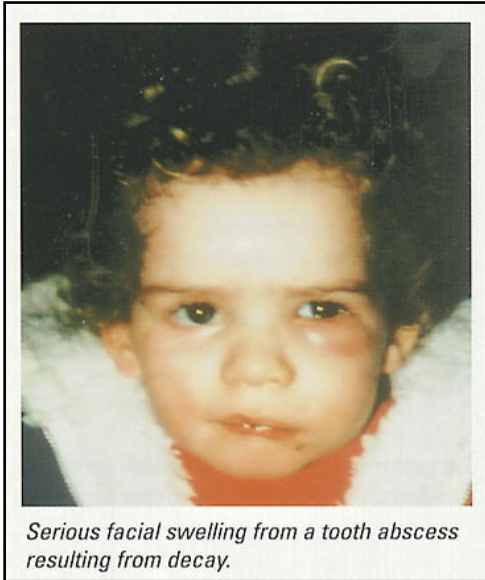


ORAL HEALTH AND THE COMMONWEALTH'S MOST VULNERABLE CHILDREN: A STATE OF DECAY



The Massachusetts Society for the Prevention of Cruelty to Children In Collaboration With:

American Academy of Pediatrics, MA Chapter
Believe in Me Foundation
Boston Public Health Commission
Boston University Goldman School of Dental Medicine
Brigham and Women's Hospital
Children's Hospital Boston
Children's League
Delta Dental Plan of Massachusetts
The Forsyth Institute
Harvard School of Dental Medicine
Health Care for All
The Health Foundation of Central Massachusetts
Horizons for Homeless Children
Lower/Outer Cape Community Coalition
Massachusetts Alliance For Families
Massachusetts Citizens for Children
Massachusetts Dental Hygienists Association
Massachusetts Dental Society
Massachusetts Head Start Association
Massachusetts Law Reform Institute

Massachusetts League of Community Health Centers
Massachusetts Public Health Association
Massachusetts School Nurse Organization
National Association of Social Workers, MA Chapter
Northeast Center for Research to Evaluate & Eliminate
Dental Disparities
Tuckerman Coalition
Tufts University School of Dental Medicine
Women's Educational and Industrial Union
The Honorable Antonio F.D. Cabral, Representative
The Honorable Thomas N. George, Representative
The Honorable Peter J. Koutoujian, Representative
The Honorable Stephen P. LeDuc, Representative
The Honorable Kathleen M. Teahan, Representative
The Honorable Harriette L. Chandler, Senator
The Honorable Thomas McGee, Senator
The Honorable Richard T. Moore, Senator
The Honorable Marc R. Pacheco, Senator
The Honorable Susan C. Tucker, Senator

March 2004

Acknowledgements

The Massachusetts Society for the Prevention of Cruelty to Children (MSPCC) was established in 1878 and is dedicated to protecting and promoting the rights and well being of children. MSPCC provides services to 30,000 children and families across Massachusetts each year and engages in advocacy and public education. This policy paper highlights an issue of child neglect.

MSPCC's interest in children's oral health originated with the agency's work with foster parents across the Commonwealth. Many foster parents reported great difficulty finding dental care for the abused and neglected children who have been placed in their homes. As MSPCC began researching the issue, it quickly became clear that poor oral health and lack of access to dental care is a problem not just for children in state custody, but also for children who live in poverty and have MassHealth or no health insurance. (Although this paper focuses on children, it is also important to note that low-income, disabled and vulnerable adults in Massachusetts are also suffering, as adult dental coverage through MassHealth was virtually eliminated by the Commonwealth in 2002.)

This paper describes and offers specific recommendations to address the poor oral health status and unmet dental care needs of our vulnerable children in Massachusetts. Sadly, the paper reiterates some recommendations from the 2000 Report of the Special Legislative Commission on Oral Health because they were never implemented. It is truly a state of decay. It is unacceptable that our children continue to suffer in pain because they can not get the treatment they need and because we have not fully implemented proven prevention strategies.

The principal author of this report was Julie Farber, Director of Policy and Planning at MSPCC. All of the entities issuing this paper contributed to its content and helped formulate its recommendations. MSPCC would especially like to thank the following individuals for their significant contributions to the paper: Dr. Michael Monopoli, Delta Dental Plan of Massachusetts; Dr. Stephen Shusterman and Dr. Howard Needleman, Children's Hospital; Dr. Raul Garcia, Northeast Center for Research to Evaluate & Eliminate Dental Disparities; Dr. Michelle Henshaw and Kathy Lituri, Boston University Goldman School of Dental Medicine; Nancy Kressin, Boston University School of Public Health; Dr. Robert Boose and Karen Rafeld, Massachusetts Dental Society; Dr. Sean Palfrey and Cathleen Haggerty, MA Chapter of the American Academy of Pediatrics; Dr. Richard Niederman, The Forsyth Institute; Dr. Shelly McBride, Massachusetts Academy of Pediatric Dentistry; Cheryl Haddad, Massachusetts Alliance for Families (MAFF); Dr. Giusy Romano-Clarke and Dr. Mark Doherty, Dorchester House; Lori Berry and Dr. William Eaves, Lynn Community Health Center; Dr. Janice B. Yost, The Health Foundation of Central Massachusetts; Clare McGorrian, Health Law Advocates; Alison Staton and Brian Rosman, Health Care for All; Dr. Anthi Tsamtsouris, Tufts University School of Dental Medicine; Scott Mason, Massachusetts League of Community Health Centers; Ellen Leicher, UMass Medical School and Central Massachusetts Oral Health Initiative; B.L. Hathaway, Lower/Outer Cape Community Coalition; Mary Foley, Massachusetts Department of Public Health; Mary-Helen Hollingsworth, Massachusetts Division of Medical Assistance; and Jamie Cox, an MSPCC intern from Tufts University.

Support for the printing of this paper was generously provided by The Health Foundation of Central Massachusetts and the Oral Health Collaborative of Massachusetts. Oral health is a primary focus of The Health Foundation, which has made more than \$3.2 million in grants addressing this issue. The Oral Health Collaborative of Massachusetts is a group of individuals representing the public and private sectors and diverse aspects of oral health policy and care delivery.

Marylou Sudders
President and CEO
Massachusetts Society for the Prevention of Cruelty to Children

American Academy of Pediatrics, MA Chapter

www.aap.org

The mission of the American Academy of Pediatrics is to attain optimal physical, mental, and social health and well being for all infants, children, adolescents, and young adults through advocacy, education, research, service, and improving the systems through which Academy members deliver pediatric care.

Believe In Me Foundation

www.ericwilliamsfoundation.org

Founded by National Basketball Association professional basketball player Eric Williams, the Believe In Me Foundation, Inc. provides oral health education, information and assistance to children and families.

Boston Public Health Commission

www.bphc.org

The nation's first health department, the Boston Public Health Commission protects, promotes and preserves the health and well being of all Boston residents through a wide range of health initiatives that target preventable disease and injury.

Boston University Goldman School of Dental Medicine

www.dentalschool.bu.edu

The mission of Boston University Goldman School of Dental Medicine is to provide excellent education to dental professionals throughout their careers; to shape the future of dental medicine and dental education through research; to offer excellent health care services to the community; to participate in community activities; and to foster a respectful and supportive environment.

Brigham and Women's Hospital

www.brighamandwomens.org/

As part of the Partners HealthCare System, Brigham and Women's Hospital is dedicated to serving the needs of the community and committed to providing the highest quality health care to patients and their families, expanding the boundaries of medicine through research, and training the next generation of health care professionals.

Children's Hospital Boston

web1.tch.harvard.edu

Children's Hospital Boston is the largest pediatric medical center in the United States. Children's strives to be the leading source of research and discovery, seeking new approaches to the prevention, diagnosis and treatment of childhood diseases as well as to educate the next generation of leaders in child health.

Children's League

childrensleague@hotmail.com (email)

The Children's League of Massachusetts is a statewide association representing more than 50 private and public organizations providing services to children and their families.

Delta Dental Plan of Massachusetts

www.deltamass.com/

Delta Dental Plan of Massachusetts is the largest provider of dental benefits in the state, covering nearly 2 million people. Delta Dental is dedicated to making a difference in our community through oral health education, research, and philanthropic initiatives focused on improving the oral health of uninsured and underinsured populations.

The Forsyth Institute

www.forsyth.org

The Forsyth Institute strives to improve human health, through innovative research and education in oral and craniofacial biology and related biomedical sciences.

Harvard School of Dental Medicine

www.hsdm.harvard.edu/asp-html

The Harvard School of Dental Medicine's core purpose is to improve oral health and thereby the overall quality of life by contributing fundamental knowledge, excellence, and leadership. HSDM is dedicated to attaining the highest standards of patient care; meeting the dental needs of its local community; and contributing to the advancement of global issues.

Health Care for All

www.hcfama.org

Health Care for All is dedicated to making adequate and affordable health care accessible to everyone, regardless of income, social or economic status.

The Health Foundation of Central Massachusetts

www.hfcm.org

The mission of The Health Foundation is to use its resources to improve the health of those who live or work in the Central Massachusetts region with particular emphasis on vulnerable populations and unmet needs.

Horizons for Homeless Children

www.horizonsinitiative.org

The mission of Horizons for Homeless Children (formerly The Horizons Initiative) is to improve the lives of homeless children and their families.

Lower/Outer Cape Community Coalition

coalition@c4.net (email)

The Lower/Outer Cape Community Coalition is a community-wide alliance working to improve the quality of life on the Lower/Outer Cape by developing programs to address critical needs including affordable health and dental care, transportation, and livable wages.

Massachusetts Alliance for Families

www.kidsnetmaff.org/cocoon/maff/home

The Massachusetts Alliance for Families (MAFF) offers opportunities for foster, adoptive, kinship and guardianship families to come together and provide mutual support to each other.

Massachusetts Citizens for Children

www.masskids.org

Founded in 1959, Massachusetts Citizens for Children (MCC) is a non-profit statewide child advocacy organization whose mission is to improve the lives of the state's most vulnerable children through advocacy by concerned citizens.

Massachusetts Dental Hygienists Association

www.massdha.org

The Massachusetts Dental Hygienists Association strives to improve the public's total health, and to advance the art and science of dental hygiene.

Massachusetts Dental Society

www.massdental.org

The Massachusetts Dental Society, a constituent of the American Dental Association, is dedicated to the continuing improvement of the health of the general public and the professional development of its member dentists.

Massachusetts Head Start Association

The Massachusetts Head Start Association is the membership organization for all Head Start child development programs in the state.

Massachusetts Law Reform Institute

www.mlri.org

The Massachusetts Law Reform Institute (MLRI) is a nonprofit statewide legal services support center with a mission to represent low-income people, elders, and people with disabilities.

Massachusetts League of Community Health Centers

www.massleague.org

The Massachusetts League of Community Health Centers provides leadership to its membership in achieving their goals and to promote accessible, quality, community-responsive health care.

Massachusetts Public Health Association

www.mphaweb.org

The Massachusetts Public Health Association (MPHA) is a statewide membership organization that seeks to improve the public's health, promote the establishment of health care as a human right, and secure optimal community, personal, and environmental health.

Massachusetts School Nurse Organization

www.msno.org

The Massachusetts School Nurse Organization promotes and advances quality school health services throughout the Commonwealth, as well as the interests, rights and professional growth of its members.

Massachusetts Society for the Prevention of Cruelty to Children

www.mspcc.org

MSPCC is a private, non-profit society dedicated to leadership in protecting and promoting the rights and well being of children and families.

National Association of Social Workers, MA Chapter

www.naswma.org

The Massachusetts Chapter of the National Association of Social Workers (NASW) has 8,300 members and is the major professional social work organization in the state.

Northeast Center for Research to Evaluate and Eliminate Dental Disparities

www.creedd.org

The NIH-funded Northeast Center for Research to Evaluate and Eliminate Dental Disparities identifies factors contributing to oral health disparities and develops and tests strategies for eliminating them.

The Tuckerman Coalition

<http://users.rcn.com/fpbedfor/tuckerman>

The Tuckerman Coalition is a ministry of advocacy for families and children living in poverty.

Tufts University School of Dental Medicine

www.tufts.edu/dental

Tufts University School of Dental Medicine is committed to excellence in education, research, patient care, and community service. TUSDM provides education to diverse predoctoral and postdoctoral students to prepare them to practice dentistry in the 21st century with knowledge of many different patient populations, dental specialties, and varied practice settings.

Women's Educational and Industrial Union

www.weiu.org

The mission of the Women's Educational and Industrial Union (WEIU) is to expand educational and economic opportunities and achieve social justice for all women.

Massachusetts Legislators:**The Honorable Antonio F.D. Cabral, Representative**

House Chair, Joint Committee on Human Services and Elderly Affairs

The Honorable Thomas N. George, Representative

Member, House Committee on Bills in the Third Reading
Member, Special Commission on Oral Health, 2000

The Honorable Peter J. Koutoujian, Representative

House Chair, Joint Committee on Health Care

The Honorable Stephen P. LeDuc, Representative

House Chair, Legislative Children's Caucus

The Honorable Kathleen M. Teahan, Representative

Member, Joint Committee on Health Care
Member, Special Commission on Oral Health, 2000

The Honorable Harriette L. Chandler, Senator

Senate Chair, Joint Committee on Housing & Urban Development
Member and Former House Chair, Joint Committee on Health Care

The Honorable Thomas M. McGee, Senator

Senate Chair, Legislative Children's Caucus
Senate Chair, Joint Committee on Criminal Justice
Member, Joint Committee on Human Services and Elderly Affairs

The Honorable Richard T. Moore, Senator

Senate Chair, Joint Committee on Health Care

The Honorable Marc R. Pacheco, Senator

Chair, Senate Post Audit & Oversight Committee
Member, Special Commission on Oral Health, 2000

The Honorable Susan C. Tucker, Senator

Senate Chair, Joint Committee on Human Services and Elderly Affairs
Member, Committee on Health Care

Table of Contents

	<u>Page #</u>
Executive Summary -----	6
I. Introduction -----	10
II. The Children’s Oral Health Crisis -----	13
<i>A. Prevalence and Consequences of Poor Oral Health</i> -----	13
<i>B. Dental Sealants</i> -----	16
<i>C. Fluoridation</i> -----	18
<i>D. Lack of Access to Care</i> -----	20
1. <i>Reimbursement Rates</i> -----	23
2. <i>Cumbersome Administration of MassHealth</i> -----	24
3. <i>Limiting MassHealth Practice Size</i> -----	25
4. <i>Missed Appointments</i> -----	26
5. <i>Cultural Competence</i> -----	28
<i>E. Arbitrary Separation of Oral Health and “General” Health</i> -----	28
III. Recommendations -----	30

Executive Summary

In 2000, a Massachusetts Special Legislative Commission on Oral Health issued a report which stated that the Commonwealth “faces a very serious crisis in access to oral health care for its poorest and most vulnerable residents.” Since the Commission’s report, access to dental care has not improved. It is now 2004 and the crisis continues. Hundreds of thousands of children do not receive needed dental care. For these children, pain and discomfort and poor self-esteem related to poor oral health is a part of their daily lives. Prevention efforts—proven and cost-effective—have increased in Massachusetts, but are not widespread.

Dental decay is a disease that is caused by a bacterial infection. Dental decay in childhood is linked to increased risk for future decay, and studies suggest that chronic oral infections are associated with other health problems later in life such as heart disease, diabetes, and unfavorable pregnancy outcomes.¹

The implications of untreated dental illnesses are not just cosmetic; they are serious and can be permanent. Significant tooth decay, pain, or infection can inhibit learning, speech, and eating, leading to problems in school, negative self-image, poor nutrition and systemic disease and disability. Nationally, more than 51 million school hours are lost each year due to dental-related illnesses.² In addition, untreated dental illnesses can create changes in a person’s appearance that negatively impact his/her employability.

According to the 2000 report, *Oral Health in America: A Report of the Surgeon General*, “Oral health is integral to general health. You cannot be healthy without oral health. Oral health and general health should not be interpreted as separate entities.”³ Unfortunately, medical care and dental care have been segregated from one another, contributing to reduced access to oral disease prevention and treatment services.

Children living in poverty or foster care in Massachusetts have difficulty accessing needed dental care primarily due to the fact that very few dentists accept MassHealth, the Commonwealth’s health insurance program for poor children and children in state custody. According to data from the Massachusetts Division of Medical Assistance (DMA), only about 600 (12%) out of more than 5,000 dental care providers in Massachusetts provide MassHealth dental services for children.^a Indeed, the number of providers accepting MassHealth has declined by approximately 35% since 1996. In 2003, Massachusetts received the grade of “F” from the Oral Health America National Grading Project on the availability of Medicaid dental providers.⁴

The low rate of dentists participating in MassHealth is due primarily to cumbersome administrative requirements; reimbursement rates that do not cover most dentists’ costs of providing care; a state anti-discrimination law that does not allow dentists to limit the number of MassHealth patients they treat, potentially leading to providers becoming overwhelmed with patients seeking services; the problem of missed appointments; and a lack of training for dentists specifically related to working with diverse populations.

State data indicate that 70 percent of children on MassHealth do not receive any dental care. Accordingly, low-income children in Massachusetts experience high rates of oral

^a Each of these 600 dentists billed for a minimum of \$5,000 in MassHealth services in one year.

infections and disease. Preliminary results from a 2003 survey of 3rd graders in Massachusetts on MassHealth indicate that 65% have a history of dental disease; 40% have *untreated* decay; and 16% have *urgent* needs, requiring immediate care.

Addressing children's poor oral health and the lack of access to dental care in the Commonwealth requires a multi-pronged approach and the involvement of multiple stakeholders. Sadly, the recommendations listed below repeat many of those made in 2000 by the Special Legislative Commission. Although some steps have been taken in terms of implementing prevention strategies, access to care has not improved. Hundreds of thousands of children in Massachusetts lack access to dental care. The access problem demands immediate resolution, and strategies to prevent oral infections and disease must be implemented statewide.

The following four key recommendations should be implemented in the short term in order to ensure access to care:

1. Increase MassHealth reimbursement rates to a level that provides an adequate provider panel.
2. Implement a Third Party Administrator (TPA) for the MassHealth Dental program. A TPA is a private dental insurer that would administer the MassHealth program in an effort to address concerns about the Commonwealth's administration of the program.
3. Implement the pilot in Worcester that allows dentists to limit the number of MassHealth patients in their practice (limiting MassHealth patients is not currently allowed). This so-called "caseload cap" pilot has been approved in statute; however, it is predicated on the establishment of the TPA (as described in Recommendation #2). It may also be helpful to consider caseload cap pilots in a few additional locations. These pilots will provide information useful in determining whether broader implementation of "caseload caps" will result in increased access to dental care for children.
4. Create a Task Force through statute or executive order with assigned responsibility for overseeing and tracking implementation of the recommendations listed above and below. The Task Force should not spend additional time studying the issue; the issue has been sufficiently studied.

As steps are taken to meet the immediate need for treatment, the Commonwealth and other key stakeholders must also make a commitment to implement strategies that prevent oral infections and disease in the first place. We have the proven technology and know-how to prevent oral infections and disease. No child should have to suffer in pain. The recommendations below provide a blueprint to accomplish these goals:

Access to Preventive Care and Treatment

- Develop additional school-based dental clinics in areas of greatest need. This will be most effective if dental clinics exist within the context of broader school-based health and social services. Elementary schools would be a good place to start, given children's developmental stage and the possibility for greatest impact.
- Provide state funding for the equipment and start-up of dental sealant programs in all areas where need exists.
- Support pediatricians to provide oral health education to families in their practices, conduct basic screenings of children and refer to dental professionals when appropriate.
- Implement Medicaid case management to assist with family issues (e.g., help schedule appointments, arrange transportation and child care, etc.). Medicaid provides federal match dollars to support case management time spent related to a patient's healthcare needs.
- Explore the option of auxiliary dental personnel (hygienists, dental assistants) providing preventive care in non-traditional settings. Dentists, auxiliary personnel, the academic/research community and other relevant stakeholders should explore this issue together to determine if expanding responsibilities can appropriately and effectively respond to the needs of children. The dental schools, hospitals and The Forsyth Institute could provide leadership and the latest research to inform an evidence-based approach to this issue.
- Provide funding and technical assistance to support capacity building of Community Health Centers (CHCs) and expansion of the dental partnering program (in which private dentists agree to treat MassHealth patients and CHCs handle billing and administration).

Oral Health Education

- Implement additional school-based oral health education programs so that every school district has one.
- Implement a major statewide public education campaign with basic prevention information for parents and children (on public transportation, print media, radio and television).
- Train public and private social service agency staff to 1) educate families about oral health and 2) include and track dental care issues and appointments in family case plans.

Fluoridation

- Implement statewide fluoridation.

Nutrition

- Provide healthy meals and snack options in local schools. A bill is currently pending in the legislature that would mandate healthier choices in school vending machines and a healthier menu in school cafeterias (H. 3519, *An Act Relative to the Treatment of Obesity*, Rep. Koutoujian). This bill was developed in response to concerns about child and adolescent obesity; however, its passage would also benefit oral health.

Integrating Oral Healthcare and Pediatric Care

- Develop and implement an integrated training curriculum for medical/dental students.

- Develop and implement Continuing Medical Education (CME) on oral health for pediatricians and other primary care providers, and for dental providers treating very young children.
- Co-locate medical and dental services whenever possible.

Human Resources

- Expand loan forgiveness incentives for new dentists who practice in underserved areas. Include dentists who work in private practices that accept MassHealth.
- Expand training for dental students in working with diverse populations.
- Provide support for pediatric dental residencies.
- Expand the recruitment of minority and low-income students into dental schools.

I. INTRODUCTION

In 2000, the Massachusetts Special Legislative Commission on Oral Health issued a report which stated that the Commonwealth “faces a very serious crisis in access to oral health care for its poorest and most vulnerable residents.”⁵ Since the Commission’s report, access to dental care has not improved. It is 2004 and the crisis still exists. Hundreds of thousands of children do not receive needed dental care. For too many children, pain and discomfort related to poor oral health is a part of their daily lives. Prevention efforts—proven and cost-effective—have increased in Massachusetts, but are not sufficiently widespread.

This paper focuses on the oral health status and dental care needs of children in Massachusetts; however, it should be noted that MassHealth coverage (the Massachusetts Medicaid program) for adult dental care was virtually eliminated in 2002.

Dental decay is a disease caused by a bacterial infection. It is the most common childhood disease (regardless of family income level), more common than asthma and hay fever. Preliminary results from a 2003 survey of Massachusetts 3rd graders suggest that almost half of the Commonwealth’s children (48%) have a history of dental disease (cavities and/or fillings); 26% have *untreated* decay (cavities); and 7% have *urgent needs* (such as abscesses) requiring immediate care.⁶

Children living in poverty fare even worse. For 3rd graders on MassHealth, the survey found the following:

- 65% have a history of dental disease;
- 40% have *untreated* decay; and
- 16% have *urgent* needs requiring immediate care.

A 2000 report from the U.S. Surgeon General declared poor oral health a “silent epidemic” affecting millions of America’s children⁷ and poor children are disproportionately affected by this epidemic. Twenty-five percent of children experience 80 percent of all dental decay. While dental disease has become less prevalent among middle and upper-income children, it remains a significant health problem for low-income and minority children.⁸ In addition, many abused and neglected children living in foster care in Massachusetts—some of our most

“Although dental problems don’t command the instant fears associated with low birth weight, fetal death or cholera, they do have the consequences of wearing down the stamina of children... Bleeding gums, impacted teeth and rotting teeth are routine matters for the children I have interviewed... Children get used to feeling constant pain. They go to sleep with it. They go to school with it. Sometimes their teachers are alarmed and try to get them to a clinic. But it’s all slow and heavily encumbered with red tape and waiting lists and missing, lost or cancelled welfare cards, that dental care is often long delayed. Children live for months with pain that grown-ups would find unendurable. The gradual attrition of accepted pain erodes their energy and aspirations. I have seen children...with teeth that look like brownish, broken sticks. I have also seen teenagers who were missing half their teeth. But, to me, most shocking is to see a child with an abscess that has been inflamed for weeks and that he has simply lived with and accepts as part of the routine of life.”

Jonathan Kozol, writing about the impact of lack of dental care on low-income and minority children in his book, *Savage Inequalities*.

vulnerable children—suffer from poor oral health and their foster parents have great difficulty finding dental care for them. The implications of untreated oral infections and disease are not just cosmetic; they are serious and can be permanent. Significant tooth decay, pain, or infection can inhibit learning, speech, and eating, leading to problems in school, negative self-image, poor nutrition and systemic disease and disability. Nationally, more than 51 million school hours are lost each year due to dental-related illnesses.⁹ In addition, untreated dental illnesses can create changes in a person’s appearance that negatively impact his/her employability.

Oral infections and disease in childhood have been linked to increased risk for future infections and disease, and studies suggest that chronic oral infections are associated with an array of other health problems such as heart disease, diabetes, and unfavorable pregnancy outcomes.¹⁰ According to the U.S. Surgeon General, “Oral health is integral to general health. You cannot be healthy without oral health. Oral health and general health should not be interpreted as separate entities.”¹¹

Children living in poverty or foster care in Massachusetts have difficulty accessing needed dental care as very few dental providers accept MassHealth, the Commonwealth’s health insurance program for poor children and children in state custody.

“No one should suffer from oral diseases or conditions that can be effectively prevented and treated. No schoolchild should...be unable to concentrate because of the pain of untreated oral infections.”

**National Call to Action to Promote Oral Health.
U.S. Department of Health and Human Services
April 29, 2003**

According to data from the Massachusetts Division of Medical Assistance (DMA), only about 600 (12%) out of more than 5,000 dental care providers in Massachusetts provide MassHealth dental services for children.^b

In fact, state data indicate that 70 percent of children on MassHealth do not receive any dental care. The low rate of dentists participating in MassHealth is due primarily to cumbersome administrative requirements; reimbursement rates that are significantly below market; a state anti-discrimination law that does not allow dentists to limit the number of MassHealth patients they treat; and the problem of missed appointments.

Another contributing factor is the lack of training for dentists specifically related to working with diverse populations. A national survey of dentists conducted in 2001 found that practitioners who reported having no training in treating Medicaid-covered children were significantly less likely to see children covered by Medicaid.¹²

^b Each of these 600 dentists billed for at least \$5,000 in MassHealth services in one year.

Hospitals, university-based clinics and Community Health Centers (CHCs) meet some of the need, but cannot serve the vast number of children (and adults) seeking services. The pressure on these sources has also increased recently due to the virtual elimination of MassHealth coverage for adult dental services in March 2002. This has put financial strain on these providers in general and particularly on the free care pool.

This monograph describes the oral health crisis for children in Massachusetts and offers specific recommendations to address this critical issue. In addition to its specific recommendations, at a minimum, this monograph attempts to educate Massachusetts policymakers and the public about three facts:

- Oral health is integral to general health. Children cannot be healthy without oral health. Poor oral health leads to numerous decrements in children's quality of life, not the least of which is pain and reduced daily functioning and well being. The separation of oral health from overall health in the health care community and in the minds of the public is not based in scientific fact or reason.
- Tooth decay is the most chronic childhood disease (more common than asthma and hay fever), yet it is also the most preventable. Prevention strategies exist that are proven and cost-effective.
- The Commonwealth's most vulnerable children do not have sufficient access to needed dental care and suffer needlessly from oral infections and disease. Many children experience pain and discomfort on a daily basis. These children should not be suffering.

Solutions exist. **It cannot be overemphasized that oral infections and disease are preventable.** The prevention of oral infections and disease and access to dental care for all children in the Commonwealth—including low-income children and children in state custody—deserves the immediate attention and collaborative efforts of policymakers, the dental and medical communities, the academic and research communities, public agencies, local school systems, human service providers and families.

Note: Oral Health Information and Strategies

In addition to promoting particular policy positions, the authors of this paper wanted to take advantage of this opportunity to share basic oral health information and prevention strategies. Many prevention strategies are simple things that parents can do. Information and strategies are highlighted throughout in thick-lined boxes and appear on their own pages for easy photocopying and sharing.

II. THE CHILDREN'S ORAL HEALTH CRISIS

A. Prevalence and Consequences of Poor Oral Health

Tooth decay is caused by a bacterial infection and is the most widespread chronic childhood disease, 5 times more common than asthma and 7 times more common than hay fever. Nationally, dental decay affects approximately 50 percent of first graders and 80 percent of 17-year-olds. Sixty percent of adolescents have gum disease.¹³

Poor oral health affects children living in poverty disproportionately. Twenty-five percent of children experience 80 percent of all dental decay. One-fifth of children in low-income families have **early childhood caries** (baby bottle tooth decay),¹⁴ which increases a child's risk for future tooth decay.¹⁵

Preliminary results from a 2003 survey of Massachusetts 3rd graders indicate that 48% of all children and 65% of children on MassHealth (low-income children) have a history of dental disease (cavities and/or fillings); 26% of all children and 40% of MassHealth children have *untreated* decay (cavities); and 7% of all children and 16% of MassHealth children have *urgent needs* and require immediate care because of large cavities/infection.¹⁶ In another study conducted in Cambridge, Lawrence and Boston, dental screenings found that 38-48% of children needed restorative dental care, with 9-14% requiring immediate referral for treatment. Students at one Boston high school had four times as many cavities as the national average.¹⁷

Dental caries in childhood have been linked to increased risk for future caries, and chronic oral infections are associated with an array of other health problems such as heart disease, diabetes, and unfavorable pregnancy outcomes.

The extremely high prevalence of oral infections and disease among all children in Massachusetts, especially among poor children, is particularly concerning given that it is almost wholly preventable.

Dietary sugars and starches increase the risk of tooth decay. The types of food that children eat, as well as the frequency and timing of ingestion, is a key determinant of oral health. As of February 2004,

there is a bill pending in the state legislature (H. 3519, sponsored by Representative Peter Koutoujian) that would mandate healthier choices in school vending machines and a healthier menu in school cafeterias. This bill was developed in response to concerns about child and adolescent obesity; however, its passage would also benefit oral health.

The consequences of poor oral health are significant and costly. The implications of untreated dental illnesses are serious and can be permanent. Significant tooth decay, pain, or infection can inhibit learning, speech, and eating, leading to problems in school, negative self-image, and poor nutrition. More than 51 million school hours are lost each year due to dental-related illnesses.¹⁸ Children with oral infections "fail to pay attention, disrupt learning for others and both they and their classmates fall behind."¹⁹

What is Tooth Decay and How is it Caused?

- Dental caries (tooth decay) is one of the most common of all disorders. It usually occurs in children and young adults but can affect any person. It is the most important cause of tooth loss in younger people.
- Bacteria are normally present in the mouth. The bacteria convert all foods-especially sugar and starch-into acids. Bacteria, acid, food debris, and saliva combine in the mouth to form a sticky substance called plaque that adheres to the teeth. It is most prominent on the grooved chewing surfaces of back molars, just above the gum line on all teeth, and at the edges of fillings. Plaque that is not removed from the teeth mineralizes into calculus (tartar). Plaque and calculus irritate the gums, resulting in gingivitis and ultimately periodontitis.
- The acids in plaque dissolve the enamel surface of the tooth and create holes in the tooth (cavities). Cavities are usually painless until they grow very large inside the internal structures of the tooth (the dentin and the pulp at the core) and can cause death of the nerve and blood vessels in the tooth. If left untreated a tooth abscess can develop.
- Plaque and bacteria begin to accumulate within 20 minutes after eating, the time when most bacterial activity occurs. If plaque and bacteria are left on the teeth, cavities can develop and untreated tooth decay can result in death of the internal structures of the tooth and ultimately the loss of the tooth.
- Dietary sugars and starches (carbohydrates) increase the risk of tooth decay. The type of carbohydrate and the timing and frequency of ingestion are more important than the amount. Sticky foods are more harmful than nonsticky foods because they remain on the surface of the teeth. Frequent snacking increases the time that acids are in contact with the surface of the tooth.

Source: Medline Plus Health Information, a service of the U.S. National Library of Medicine and the National Institutes of Health
<http://www.nlm.nih.gov/medlineplus/ency/article/001055.htm>

MSPCC

Early Childhood Caries (Baby Bottle Tooth Decay)

What is baby bottle tooth decay?

Decay in infants and children is called baby bottle tooth decay. It can destroy the teeth and most often occurs in the upper front teeth. But other teeth may also be affected.

What causes baby bottle tooth decay?

Decay occurs when sweetened liquids are given and are left clinging to an infant's teeth for long periods. Many sweet liquids cause problems, including milk, formula and fruit juice. Bacteria in the mouth use these sugars as food. They then produce acids that attack the teeth. Each time your child drinks these liquids, acids attack for 20 minutes or longer. After many attacks, the teeth can decay.

It's not just what is put in your child's bottle that causes decay, but how often — and for how long a time. Giving a child a bottle of sweetened liquid many times a day isn't a good idea. Allowing a child to fall asleep with a bottle during naps or at night can also harm the child's teeth.

Why are baby teeth important?

Your child's baby teeth are important. Children need strong, healthy teeth to chew their food, speak and have a good-looking smile. Baby teeth also keep a space in the jaw for the adult teeth. If a baby tooth is lost too early, the teeth beside it may drift into the empty space. When it's time for the adult teeth to come in, there may not be enough room. This can make the teeth crooked or crowded.

How can baby bottle tooth decay be prevented?

Sometimes parents do not realize that a baby's teeth can decay soon after they appear in the mouth. By the time decay is noticed, it may be too late to save the teeth. You can help prevent this from happening to your child by following the tips below:

1. After each feeding, wipe the baby's gums with a clean gauze pad. Begin brushing your child's teeth when the first tooth erupts. Clean and massage gums in areas that remain toothless, and begin flossing when all the baby teeth have erupted, usually by age 2 or 2½.
2. Never allow your child to fall asleep with a bottle containing milk, formula, fruit juice or sweetened liquids.
3. If your child needs a comforter between regular feedings, at night, or during naps, give the child a clean pacifier recommended by your dentist or physician. Never give your child a pacifier dipped in any sweet liquid.
4. Avoid filling your child's bottle with liquids such as sugar water and soft drinks.
5. If your local water supply does not contain fluoride (a substance that helps prevent tooth decay), ask your dentist how your child should get it.
6. Start dental visits by the child's first birthday. Make visits regularly. If you think your child has dental problems, take the child to the dentist as soon as possible.

Source: American Dental Association

http://www.ada.org/public/topics/decay_childhood_faq.asp

MSPCC

Oral infections and disease in childhood have been linked to increased risk for future decay, and chronic oral infections are associated with an array of other health problems later in life such as heart disease, diabetes, and unfavorable pregnancy outcomes.²⁰ Lost productivity resulting from dental appointments and oral health-related complications in adults and their children amounts to 164 million hours of missed work every year.

Oral infections and disease are preventable. Fortunately, prevention strategies are not only proven but cost-effective. Dental sealants and fluoridation are two such strategies; however, they have not been fully implemented in Massachusetts.

B. Dental Sealants

A dental sealant is a liquid that is applied to the chewing surfaces of the back teeth by a dental professional and forms a plastic-like barrier that typically lasts several years. This coating protects the grooves and depressions (where food gets trapped) of the teeth from bacteria. The application usually takes less than ten minutes and requires no anesthetic.

Dental sealants are nearly 100% effective in preventing cavities from forming in the pits and grooves of teeth for as long as the sealant remains in place.

Dental sealants have been proven effective in preventing cavities. Sealants are approved and have been recommended by the American Dental Association and the Centers for Disease Control and Prevention.²¹

Some progress has been made in the area of sealants in Massachusetts. Since the release of the Special Commission's report in 2000, a number of school-based and school-linked dental sealant programs have been established or expanded with technical support from the Department of Public Health's (DPH) Office of Oral Health and funding from DMA, foundation grants, dental schools and local groups. These programs typically involve collaborations between school nurses and local dental care providers who team up to ensure that children receive screenings and sealants.

While this progress is encouraging, the fact remains that sealant programs still do not exist statewide and about half of children do not have sealants. Preliminary results from the 2003 3rd grader survey indicate that 53% of all 3rd graders and only 41% of 3rd graders living in poverty have sealants.²²

Some major cities (Boston, Worcester, Springfield) do not have city-wide sealant programs and other areas (including Northern Berkshire County) have no sealant programs at all. The Commonwealth needs to finish the work it has begun and provide funding for the equipment and start-up of dental sealant programs in all areas where need exists. Once the programs are established, they should be sustained through MassHealth and private insurance billing.

Pregnancy and Oral Health

Is there a connection between my pregnancy diet and my oral health?

Eating a balanced diet is necessary to provide the correct amounts of nutrients to nourish both you and your child. What you eat during the nine months of pregnancy affects the development of your unborn child -- including teeth. Your baby's teeth begin to develop between the third and sixth month of pregnancy, so it is important that you receive sufficient amounts of nutrients – especially calcium, protein, phosphorous, and vitamins A, C, and D.

Does a woman lose calcium from her teeth during pregnancy?

It is a myth that calcium is lost from the mother's teeth during pregnancy. The calcium your baby needs is provided by your diet, not by your teeth. If dietary calcium is inadequate, however, your body will provide this mineral from stores in your bones. An adequate intake of dairy products – the primary source of calcium – or the supplements your obstetrician may recommend will help ensure that you get all the calcium you need during your pregnancy.

What if I'm hungry between meals?

During pregnancy, many women have the desire to eat between meals. While this is a normal urge, frequent snacking on carbohydrate-containing foods can be an invitation to tooth decay. The decay process begins with plaque, an invisible, sticky layer of harmful bacteria that constantly forms on teeth. The bacteria convert sugar and starch that remain in the mouth to acid that attacks tooth enamel. The longer sugars are retained in your mouth, the longer the acids attack. After repeated attacks, tooth decay can result.

Eat nutritious, well-balanced meals made up of foods from the five major food groups: breads, cereals and other grains; fruits; vegetables; meat, fish, poultry and protein alternates; and milk, yogurt and cheese. Try to resist the urge to snack constantly. When you need a snack, choose foods that are nutritious for you and your baby such as raw fruits and vegetables and dairy products. Following your physician's advice regarding diet is your wisest course.

Does pregnancy affect my gums?

During pregnancy, your body's hormone levels rise considerably. Gingivitis, especially common during the second to eighth months of pregnancy, may cause red, puffy or tender gums that tend to bleed when you brush. This sensitivity is an exaggerated response to plaque and is caused by an increased level of progesterone in your system. Your dentist may recommend more frequent cleanings during your second trimester or early third trimester to help you avoid problems.

What are "pregnancy tumors"?

Occasionally overgrowths of gum tissue, called "pregnancy tumors," appear on the gums during the second trimester. These localized growths or swellings are usually found between the teeth and are believed to be related to excess plaque. They bleed easily and are characterized by a red, raw-looking mulberry-like surface. They are often surgically removed after the baby is born. If you experience pregnancy tumors, see your dentist.

It's especially important to maintain good oral health during pregnancy. Studies indicate that pregnant women who have severe gum disease may be at increased risk for pre-term delivery, which in turn increases the risk of having a low-birthweight baby. If you notice any changes in your mouth during pregnancy, see your dentist.

What can I do to keep my mouth healthy during pregnancy?

To help prevent tooth decay and periodontal disease, brush your teeth thoroughly twice a day with a fluoride toothpaste to remove plaque. Be sure to clean between your teeth daily with floss or interdental cleaners. Ask your dentist or hygienist to show you how to brush and floss correctly. When choosing oral care products, look for those that display the American Dental Association's Seal of Acceptance, your assurance that they have met ADA standards of safety and effectiveness.

Source: American Dental Association

http://www.ada.org/public/topics/pregnancy_faq.asp

MSPCC

C. Fluoridation

Living in a fluoridated community from birth reduces tooth decay by as much as 40 percent. **According to the federal Centers for Disease Control and Prevention, every dollar spent on fluoridation saves an estimated \$38 in treatment costs.**²³ Just 50 cents per person per year covers the cost of fluoridation in an average community. That is a cost of only \$35 over the lifetime of a 70-year-old. This compares to the cost of just one cavity filling at more than \$75.

Despite the proven benefits and cost-effectiveness of fluoridation, Massachusetts lags behind other states in implementing fluoridation. According to the Department of Public Health, of 289 communities in Massachusetts with a community water supply, only 135 communities (representing 62 percent of the population in Massachusetts) have fluoridated water. It should be noted that this is an increase from 2000, when only 120 communities in Massachusetts had fluoridated water.

Water fluoridation has been recognized by the Centers for Disease Control and Prevention as one of the 10 Best Public Health Achievements of the 20th Century.

The cost of fluoridation start-up—construction, materials and fluoride for first year—are covered by the state. Local governments need only pay for the fluoride after the first year, the costs of which are minimal. One problem is that fluoridation is frequently voted down in local government referendums, due to misinformation or lack of public knowledge of the proven benefits and extremely low costs.

In some non-fluoridated communities, the Massachusetts Department of Public Health, Office of Oral Health supports fluoride mouth rinse programs that served 59,000 children in FY 2003 and 46,000 children in FY 2004. (The number served declined from 2003 to 2004 due to state budget cuts.) Thousands of children in Massachusetts live in non-fluoridated communities and do not have access to fluoride mouth rinse programs.

The Commonwealth should educate local communities and help them to implement fluoridation.

Selected Massachusetts Prevention Initiatives

Oral health is a primary focus of **The Health Foundation of Central Massachusetts**. The Foundation's projects related to prevention include the following:

- ✓ Educating primary care physicians, pediatricians, and nurses at UMass Memorial, Heywood Hospital and Health Alliance on oral health screening, advising and referring.
- ✓ Educating MSPCC outreach workers, who in turn, educate parents of young children about good oral health.
- ✓ Providing fluoride varnishes (which need only be applied two - three times per year, compared to fluoride rinses which are required weekly) to more than 4,600 children in 13 Worcester public elementary schools through the UMass Memorial Ronald McDonald Caremobile and the Quinsigamond College Dental Hygiene program.
- ✓ Providing dental screenings and sealants to hundreds of children in Webster and Southbridge with additional support from the W.K. Kellogg Foundation. <http://www.hfcm.org/>

The Northeast Center for Research to Evaluate and Eliminate Dental Disparities (CREEDD) is an initiative of the National Institute of Dental and Craniofacial Research, National Institutes of Health, and is based at the Boston University School of Dental Medicine, in Boston, Massachusetts. CREEDD, established in 2001, receives more than \$1.5 million each year in grant support from the National Institutes of Health (NIH), and is funded through July 2008. Among other projects, the Center is training pediatricians and nurses at **Boston Medical Center** on oral health issues and how to talk to families about them. <http://www.creedd.org/>

The **Massachusetts Dental Society (MDS) Foundation** is dedicated to improving the oral health of Massachusetts residents, providing access to care for less fortunate members of society, and enhancing the educational opportunities of individuals pursuing a dental career. One of the Foundation's prevention projects is *Operation: Healthy Smile*, a partnership with the Marlborough Boys & Girls Club to provide oral screenings for children in the Marlborough Public Schools. <http://www.massdental.org/>

The Forsyth Institute is a world-renowned oral health research institute located in Boston. Among many basic science and clinical research projects, Forsyth is conducting a demonstration study in Lynn and in Barnstable County that will provide oral health education, sealants and other preventives to elementary school students and compare their oral health outcomes with a control group. Forsyth hypothesizes that 1) oral infections will be reduced and oral health improved; 2) this prevention approach will be cost-effective; and 3) academic achievement will be enhanced. <http://www.forsyth.org/>

The **Oral Health Foundation** is an initiative of DSM, doing business as Delta Dental Plan of Massachusetts. The Foundation makes grants to programs that are working towards reducing oral health disparities in underserved populations throughout Massachusetts. A key funding strategy is promoting models of preventive care. Recent grants include:

- ✓ Addition of an oral health component into the Family Van, a mobile health care unit that will add free culturally and linguistically appropriate oral health education, preventive dental care, and enhanced access to dental services for uninsured and underinsured populations in the Boston neighborhoods of Roxbury, Mattapan, and Dorchester.
- ✓ Support for One Smile at a Time II, a program providing preventive dental care and oral health education to elementary school students in the Lowell public school system. Students from the Dental Hygiene and Dental Assisting programs at Middlesex Community College will provide most of these services.

The **Lower/Outer Cape Community Coalition** (Cape Cod) conducts the Tooth Tutoring Program, a five component prevention program that include prevention education for 5th graders who then tutor 2nd graders on how to brush their teeth. The five components are a public awareness campaign, dental health education, screening by dentists, fluoride varnishes (pre-school) and sealants (school-aged), and engaging primary care physicians.

D. Lack of Access to Care

Federal law requires states to provide dental care to all Medicaid-eligible children from birth to 21 years of age. Low-income children and children in foster care in Massachusetts are typically covered by MassHealth, the Medicaid program for Massachusetts.

However, only about 12 percent of dental providers (600 out of 5,000 providers) in Massachusetts provide services for children on MassHealth.^c In fact, the numbers of dentists participating in MassHealth is on a serious decline and has been for years. According to DMA data, the number of dentists billing for MassHealth services declined by 35 percent between 1996 and the present.

Not surprisingly, data indicate that a substantial portion of children on MassHealth do not receive any dental care. According to DMA, only 28 percent of children on MassHealth received a dental service in FY 2002, leaving 72 percent of children who received no dental services.^d

Dentists do not participate in MassHealth primarily due to reimbursement rates that do not cover their costs, cumbersome administrative requirements and frequent missed appointments. In addition, a state anti-discrimination law that does not allow dentists to limit the number of MassHealth patients they treat, can potentially lead to overwhelming demands on participating dentists. This particular issue would likely recede in importance if a sufficient number of dentists were to join MassHealth, which is dependent on resolution of rate levels, administrative issues and other issues described in more detail below.

"I take younger kids – toddlers and preschoolers – and I would say that 99% have problems with bottle rot or cavities. Last year I had an emergency with a three-year-old whose lips and face became swollen due to an infection stemming from bad teeth. I called every dentist on the MassHealth list in New Bedford and Dartmouth and not one of them would take a child under the age of 5. I finally found a dentist in Brockton, which is a 45-minute drive from here. I have social workers calling me to get the name of that dentist because there just aren't any others."

New Bedford Foster Parent

Lack of training specifically related to working with the diverse populations is also an issue. A national survey of dentists conducted in 2001 found that practitioners who reported having no training in treating Medicaid-covered children were significantly less likely to see children covered by Medicaid.²⁴

^cEach of these 600 dentists billed for at least \$5,000 in MassHealth services in one year.

^dData provided by DMA to MSPCC January 15, 2004.

2000

- ✓ Dental care is the second-most requested health service in calls to the Mayor's Health Line in Boston.
- ✓ The Massachusetts Special Legislative Commission on Oral Health reports that DMA receives 4000 calls **per month** from MassHealth members unable to find dental care.
- ✓ *Health Care for All v. Romney* filed. Lawsuit charges that the Commonwealth violated federal Medicaid requirements by failing to maintain a large enough network of dentists to provide services to all eligible MassHealth members.

2003

- ✓ MA receives a grade of "F" from the Oral Health America National Grading Project on the availability of Medicaid dental providers.

In 2000, dental care was the second-most requested health service in calls to the Mayor's Health Line in Boston. That same year, the Massachusetts Special Legislative Commission on Oral Health reported that the Division of Medical Assistance was receiving 4000 calls per month from MassHealth members unable to find dental care, more than for any other service. Following the release of the Commission's report, *Health Care For All v. Romney* was filed, alleging that the Commonwealth violated federal Medicaid requirements by failing to maintain a large enough network of dentists to provide services to all eligible MassHealth members. In 2003, Massachusetts received the grade of "F" from the Oral Health America National Grading Project on the availability of Medicaid dental providers.²⁵ Certain areas of the state have few or no dental providers, let alone providers that accept MassHealth.

Health Care For All v. Romney

After the Special Legislative Commission issued its report in 2000, the public interest law firm Health Law Advocates sued state officials on behalf of Health Care For All and a group of MassHealth families. The case, Health Care For All v. Romney, was filed in the federal district court for Massachusetts and assigned to Judge Rya Zobel.

Health Care For All charges the state defendants with violating federal Medicaid requirements by failing to maintain a large enough network of dentists to provide services to all eligible MassHealth members. Health Care For All will seek a court order requiring the defendants to make all changes necessary to comply with federal law. The case is expected to go to trial in spring 2004.

Community Health Centers (CHCs), the dental schools and hospitals provide critical dental services but lack the staff, space and funding to adequately address the overwhelming need that exists in Massachusetts.

Currently, there are 34 CHCs in Massachusetts that have dental clinics. Last year, these clinics provided 46,000 dental visits for children (representing about 30,000 children, some having multiple dental visits). CHC dental clinics have been negatively impacted by the recent elimination of MassHealth dental benefits for adults. Former adult MassHealth recipients now seeking free care are placing an extra burden on the CHCs, further compromising their ability to provide services for children. Some steps have been taken in recent years to expand the capacity of the CHCs. The CHCs are an essential safety net, but serve less than 10 percent of the MassHealth population and, thus, cannot provide the only solution to this major access crisis.

The dental schools (Boston University, Harvard and Tufts) meet some of the need but are also struggling given the elimination of MassHealth dental benefits for adults. (The dental schools do not have access to the free care pool.) It should be noted that the dental schools in Massachusetts are a resource not just for providing direct services, but also for their capacity to provide training to other disciplines on oral health prevention and care. In addition, the dental schools can play an important role in encouraging young dentists to serve low-income populations.

Children's Hospital in Boston provided more than 22,000 dental visits for almost 5,000 children last year. Approximately 70 percent of those children are MassHealth members. Hospitals should not be a major provider of dental services in the state; however, families seek care for their children in hospitals because they can not access it in their own communities. This can contribute to

The CHC Dental Partnering Project

In January 2001, the Division of Medical Assistance (DMA) implemented the CHC Dental Partnering Project, which was designed to encourage CHCs to increase their volume of dental services by offering a \$7 enhancement fee to qualified CHCs for every MassHealth recipient served. The project does not provide any funding to CHCs up front, but expects CHCs to expand services by:

- ✓ adding staff;*
- ✓ expanding hours;*
- ✓ establishing new clinics; and*
- ✓ subcontracting with private providers who do not normally accept MassHealth (and for whom the CHCs would do their billing).*

Once CHC's are able to document to DMA that they have expanded services in these ways, DMA will grant the \$7 per patient enhancement fee.

According to DMA, 25 out of 50 CHCs in Massachusetts have qualified to be included in the CHC dental partnering program, meaning they have engaged in some of the above-described activities to expand their dental services.

However, subcontracting between CHCs and private dental providers has been minimal. Only 5 CHCs have subcontracted with a total of just 10 private dentists across Massachusetts. Stakeholders indicate that lack of publicity and the administrative burdens of this program have been an obstacle to more widespread implementation.

the problem of missed appointments as discussed below. For example, when families from Pittsfield seek care at Children's Hospital because they can not find it in Western Massachusetts, they frequently end up missing their appointments, due to lack of transportation.

The sections below discuss the access issues noted above in more detail.

1. Reimbursement Rates

In 2000, the Massachusetts Special Legislative Commission on Oral Health estimated that the fees paid to dentists by MassHealth in 1999 were, on average, only half of the *median* fees of dentists in Massachusetts, or approximately what only 20% of practicing dentists received for their services. The Commission stated that "reimbursement must be raised immediately to at least meet the cost of providing care."

Although the MassHealth dental fee rates have been raised twice since the Commission's report, the current rates still remain comparable to the regular fees of only 20 to 30% of dentists. These MassHealth fees are not sufficient to attract an adequate number of dentists to the MassHealth program. In a letter to State

Medicaid Directors in January 2001, the Health Care Financing Administration (now the Center for Medicaid and Medicare Services) stated that the combination of low utilization of dental services by Medicaid recipients and reimbursement rates below the median creates a presumption of a states' failure to meet federal Medicaid standards.

With fee rates so low, it is not surprising that only approximately 12% of practicing dentists in Massachusetts participate in MassHealth. Dental offices are generally willing to accept reduced fees for a portion of the patients in their practice, but the reductions must take into account the dentist's cost of providing care. Dentists are usually independent providers with substantial fixed overhead costs. In order to develop a panel of dentists that is sufficient to provide adequate care for MassHealth recipients, a fee schedule that allows the necessary number of dental providers to meet their costs must be offered.

Other states that have increased Medicaid rates to be more competitive with market rates have successfully increased the number of dentists participating in the Medicaid program and consequently increased the number of children receiving care. Alabama, Delaware, Georgia and South Carolina increased dental reimbursement rates to a level that 70 to 85 percent of dentists say is comparable to their usual fee.²⁶ Numbers of dental visits, claims submitted, and participating Medicaid

*The state of **Minnesota** has adopted multiple strategies aimed at creating incentives for dental students and dentists to care for its most at-risk and under-served citizens. The state established a loan forgiveness program for dental students who serve in an office in which at least 25 percent of the patients are on publicly financed care.^a In addition, certain dentists identified by state officials as "critical access" providers are reimbursed at a higher rate than the standard Medicaid rate.*

dentists have increased substantially in these states, demonstrating the direct effect that provider participation in the Medicaid program has on patients' access to care.

The combination of increased reimbursement rates and collaboration with private dental insurers has also been effective in several states. In Michigan, dental visits increased from 18 percent to 44 percent of children eligible for Medicaid and the number of participating dentists jumped 300 percent as a result of a 37-county pilot program through the Delta Dental Plan of Michigan. The program increased reimbursement rates to competitive levels, changed billing procedures to parallel private insurance procedures, and decreased the stigma associated with Medicaid by giving patients cards resembling those of private insurance providers.

2. Cumbersome Administration of MassHealth

Dentists report that administrative issues limit their willingness to become MassHealth providers. Administrative issues include:

- a billing process that requires billing forms and follow-up procedures that are time consuming and incompatible with typical dental office billing procedures. (MassHealth now accepts the standard ADA form for the

- minority of dentists who bill electronically; however, the majority of dentists who do not bill electronically are still required to use forms that are unique to MassHealth.)
- difficult access to customer service support for resolution of administrative problems and lack of communication when claims are suspended or rejected;
 - a prior approval process, unlike other dental insurers, that requires multiple forms to be submitted, often delays treatment, and is assigned to a single provider rather than an office site;
 - lack of user friendly materials for provider information; and
 - lack of user friendly materials and customer support for recipients to understand their benefits and to find current active providers.

As HIPAA (Health Insurance Portability and Accountability Act of 1996) compliant electronic billing mechanisms become more available, some of the more difficult billing issues will hopefully be alleviated for the minority of dentists who bill electronically for services. However, the other administrative issues still need to be resolved.

As noted above, some states have contracted with private dental insurers to improve the administration of their Medicaid dental programs.

3. Limiting MassHealth Practice Size

A state anti-discrimination law precludes dentists from limiting MassHealth patients to a certain percentage of their patient population. An unintended consequence is that some dentists who may be willing to serve a limited number of MassHealth patients do not join MassHealth for fear of being overwhelmed by demand.

A pilot program in Worcester County that would allow a so-called “caseload cap” in an effort to increase the number of participating dentists and increase access to care was approved in Massachusetts law (Section 217 of Chapter 184 of the Acts of 2002). The pilot is to be funded in part by the Health Foundation of Central Massachusetts and the Kellogg Foundation. However, the pilot is predicated on the implementation of a Third Party Administrator (TPA), a private dental insurance company that would administer the MassHealth program, in an effort to address some of the administrative issues described above. DMA has not made the commitment to fund the TPA.

The Worcester pilot would provide information useful in determining whether broader implementation of “caseload caps” will result in increased access to dental care for children. Expansion of a caseload cap strategy should be pursued thoughtfully. Such efforts must be continually evaluated in terms of their impact on access to services. Furthermore, these approaches must be considered in light of their potentially broader implications for the anti-discrimination law.

4. Missed Appointments

When families miss appointments, children do not receive needed care and conditions worsen. Missed appointments also constitute wasted time, when other children who were denied appointment slots could have been served. In addition, missed appointments cause financial loss for dental care providers. A variety of factors contribute to missed appointments, including the challenges and complications that arise from living in poverty, such as lack of reliable transportation.

The expansion of school-based and school-linked services can play a significant role in addressing this issue. By providing services where children are, school-based programs eliminate many of the access barriers typically encountered by underserved populations. Additional strategies include the following:

- implementing Medicaid case management services (that would support access to all health care, including oral health);
- streamlining the administrative process for transportation reimbursement for dental appointments;
- partnering with pediatricians and primary care providers to discuss and emphasize with families the importance of dental care and keeping appointments;
- co-locating pediatric medical care and dental care services, whenever possible; and
- training public and private social service providers involved with families to discuss dental care with families and include dental appointments in case plans, etc.

Strategies in Massachusetts and Other States for Improving Access to Care

Strategies that have been implemented to increase access to care generally fit into one of two major approaches: 1) address systemic issues in Medicaid program to increase provider participation; or 2) implement initiatives which rely upon dentists volunteering their services. While the authors of this paper strongly support the first approach, the second approach should continue to be part of the mix of strategies implemented in Massachusetts, given the dire situation.

In **Michigan**, dental visits increased from 18 percent to 44 percent of children eligible for Medicaid and the number of participating dentists jumped 300 percent as a result of a 37-county pilot program through the Delta Dental Plan of Michigan. The program increased reimbursement rates to competitive levels, changed billing procedures to parallel private insurance procedures, and decreased the stigma associated with Medicaid by giving patients cards resembling those of private insurance providers.

As part of an effort to improve its Medicaid program, **Georgia** challenged all dentists in October 2000 to accept at least five new children enrolled in Medicaid every year through its “**Take Five**” campaign. Although the strategy was successful in increasing Medicaid participation, such an approach is currently prohibited in Massachusetts by the anti-discrimination statute in the State’s Medicaid regulations.

Alabama provided children with immediate and convenient access to dental care by mobilizing dentists in the National Guard to set up dental care tents on elementary school playgrounds across the state.

The **Robert Wood Johnson Foundation’s** “Pipeline, Profession and Practice: Community-Based Dental Education” program is aimed at expanding community-based practice sites and expanding access to oral health care for vulnerable populations through dental school and community partnerships. A related aim is to expand the recruitment of minority and low-income students into dental schools. **Boston University School of Dental Medicine’s** “**New England Dental Access Program**” will receive approximately \$1.5 million over 5 years (2002-2007) from RWJF to increase the numbers of such students in its dental school.

The W.K. Kellogg Foundation and the Health Foundation of Central Massachusetts are funding an initiative that will 1) explore a dental residency program at the University of Massachusetts Medical School; and 2) pilot a strategy to recruit area dentists back into the Medicaid program by allowing a caseload cap. (Note: #2 is stalled due to lack of funds appropriated by the legislature for a third party administrator [TPA] required for this pilot.)

The 2003 Give Kids a Smile Oral Health Survey of 3rd Graders (sponsored by the Massachusetts Dental Society, Delta Dental Plan of Massachusetts, DPH and Department of Education) provided free dental screenings by volunteer dentists for more than 3,400 children from 95 schools across Massachusetts during the past year.

The Massachusetts Dental Society (MDS) Foundation’s *Gateway Health Access Program & Oral Health Initiative of North Central Massachusetts* is expanding access to dental care for thousands of low income families and individuals in Worcester county and outlying areas.

Massachusetts has some programs to recruit and retain dentists working in Community Health Centers. Tuition reimbursement/scholarships are provided for a small number of dentists who work/commit to work full and part-time at CHCs.

The **Lower/Outer Cape Community Coalition** partnered with the Cape Cod District Dental Society to launch the Cape Cod Dentists Care Program in which local dentists provide low to no cost dental care for a limited number of income-eligible patients either at their own dental office or at a community health/dental center.

5. Cultural Competence

There are 3 major issues related to cultural competence. First, minorities are underrepresented in the field of dentistry. Second, dentists do not generally receive adequate training around cultural competency. Third, private dental practices do not generally have bilingual staff or use interpreter services.²⁷ MassHealth does not cover interpreter services.

Community Health Centers are probably best equipped to provide culturally appropriate services; however, there are only 34 community health centers with dental clinics and they serve only a small portion of the population in need.

Steps need to be taken to address these issues. The Massachusetts dental schools should make a commitment to conduct outreach to colleges and universities to recruit minority students. Funding must be identified to support financial aid for these students. The dental schools should also partner with appropriate resources to ensure that dental students receive cultural competency training. A more diverse and culturally competent provider population may reduce the need for interpreter services.

E. Arbitrary Separation of Oral Health and “General” Health

Historically, medical care and dental care have been completely separate—separate provider groups, separate funding sources, separate physical locations for services, etc. The Children’s Dental Health Project reports that “turf battles” have posed obstacles to integrating and coordinating medical and dental services. Pediatric dentists have viewed the oral health of young children as its “exclusive preserve,” and have been resistant to the idea of medical intervention. Primary care physicians have reported feeling overburdened by their existing professional responsibilities, let alone having to learn about and address oral health in their patients.²⁸ This artificial separation decreases the likelihood that children will receive dental disease prevention and early intervention services.

Dentists and Pediatricians: Joining Forces

The American Academy of Pediatrics states that “pediatricians, family practitioners, pediatric nurse practitioners and physician assistants should be trained to perform an oral health risk assessment on all children beginning by 6 months of age to identify known risk factors for early childhood dental caries.” AAP Policy Statement, May 2003

The American Academy of Pediatric Dentistry (AAPD) “encourages both dental and non-dental health care providers to use (the) CAT (Caries Risk Assessment Tool) in the care of infants, children and adolescents.” AAPD Policy, Adopted 2002

While the separate financial and service delivery structures for dental and medical care remain a significant challenge and despite turf battles and other concerns, there has been increased recognition of the following in recent years (spurred by the Surgeon General’s report in 2000):

- ✓ oral health is part and parcel of overall health;

- ✓ pediatric and primary care providers can and should play a role in screening for and preventing poor oral health; and
- ✓ dental and medical care providers should be working together toward the improved oral health of their patients.

However, studies have shown that most pediatricians have not received adequate information about preventive oral health practices during medical training. Those who have received training are more likely to provide oral health information to their patients and to refer patients for dental treatment.

In 1999, through the University of Massachusetts Medical School, the DMA developed a training curriculum for primary care physicians aimed at preventing early childhood caries and focusing on oral health screening, referral to dentists, and educating patients about oral health. All primary care providers who participate in MassHealth received training materials, including posters of children's dental development, patient pamphlets, and a pocket card for physicians. Some physicians participated in training sessions but training has not been provided statewide.

In Western Massachusetts, Head Start programs are beginning an initiative to engage pediatricians and primary care providers in training to enhance their ability to provide information about oral health and make appropriate referrals.

The NIH-supported Northeast Center for Research to Evaluate and Eliminate Dental Disparities (CREEDD) of Boston University is implementing a program to train pediatricians and nurses at Boston Medical Center to advise and counsel their patients' parents or caregivers regarding decreasing risks for early childhood caries.

Although these are promising initiatives, they are piecemeal. A comprehensive approach with the goal of fully integrated care in Massachusetts has yet to be achieved.

Integrating Oral Health and Pediatric/Primary Care

“Almost all American children see a pediatrician during the course of the year, so pediatricians could be natural allies in the battle against (poor oral health) by examining their patients and advising and counseling parents and caregivers about the child’s exposure to risk factors for the disease...In pediatric practice, pediatricians’ emphasis on putting children to sleep on their backs led to a significant decrease in SIDS deaths...appropriately trained physicians and nurses can have a similar impact (on oral health).”

Nancy Kressin, Northeast Center for Research to Evaluate and Eliminate Dental Disparities (CREEDD), Boston University School of Public Health and Boston University Goldman School of Dental Medicine

III. RECOMMENDATIONS

Addressing children's poor oral health and the lack of access to dental care in the Commonwealth requires a multi-faceted approach and the involvement of stakeholders at every level and in many different settings.

Unfortunately, the recommendations listed below repeat many of those made in 2000 by the Special Legislative Commission because the crisis still exists. Although some steps have been taken in terms of implementing prevention strategies, access to care has not improved. Hundreds of thousands of children in Massachusetts lack access to dental care and are suffering.

*Education and awareness measures, such as the **Watch Your Mouth campaign in the State of Washington**, have reached broad audiences through Public Service Announcements, radio advertisements, posters, the distribution of materials to professional and political offices, and other such methods.*

The access problem demands immediate resolution, and strategies to prevent oral infections and disease must be implemented statewide.

The following four key recommendations should be implemented in the short term in order to ensure access to care:

1. Increase MassHealth reimbursement rates to a level that provides an adequate provider panel.
2. Implement a Third Party Administrator (TPA) for the MassHealth Dental program. A TPA is a private dental insurer that would administer the MassHealth program in an effort to address concerns about the Commonwealth's administration of the program.
3. Implement the pilot in Worcester that allows dentists to limit the number of MassHealth patients in their practice (limiting MassHealth patients is not currently allowed). This so-called "caseload cap" pilot has been approved in statute; however, it is predicated on the establishment of the TPA (as described in Recommendation #2). It may also be helpful to consider caseload cap pilots in a few additional locations. These pilots will provide information useful in determining whether broader implementation of "caseload caps" will result in increased access to dental care for children.
4. Create a Task Force through statute or executive order with assigned responsibility for overseeing and tracking implementation of the recommendations listed above and below. The Task Force should not spend additional time studying the issue; the issue has been sufficiently studied.

As steps are taken to meet the immediate need for treatment, the Commonwealth and other key stakeholders must also make a commitment to implement strategies that prevent oral infections and disease in the first place. We have the proven technology and know-how to prevent oral infections and disease. No child should have to suffer in pain. The recommendations below provide a blueprint to accomplish these goals:

Access to Preventive Care and Treatment

- Develop additional school-based dental clinics in areas of greatest need. This will be most effective if dental clinics exist within the context of broader school-based health and social services. Elementary schools would be a good place to start, given children's developmental stage and the possibility for greatest impact.
- Provide state funding for the equipment and start-up of dental sealant programs in all areas where need exists.
- Support pediatricians to provide oral health education to families in their practices, conduct basic screenings of children and refer to dental professionals when appropriate.
- Implement Medicaid case management to assist with family issues. Medicaid provides federal match dollars to support case management time spent related to a patient's healthcare needs.
- Explore the option of auxiliary dental personnel (hygienists, dental assistants) providing preventive care in non-traditional settings. Dentists, auxiliary personnel, the academic/research community and other relevant stakeholders should explore this issue together to determine if expanding responsibilities can appropriately and effectively respond to the needs of children. The dental schools, hospitals and The Forsyth Institute could provide leadership and the latest research to inform an evidence-based approach to this issue.
- Provide funding and technical assistance to support capacity building of Community Health Centers and expansion of the dental partnering program (in which private dentists agree to treat MassHealth patients and CHCs handle billing and administration).

Oral Health Education

- Implement additional school-based oral health education programs so that every school district has one.
- Implement a major statewide public education campaign with basic prevention information for parents and children (on public transportation, print media, radio and television).
- Train public and private social service agency staff to 1) educate families about oral health; and 2) include and track dental care issues and appointments in family case plans.

Fluoridation

- Implement statewide fluoridation.

Nutrition

- Provide healthy meals and snack options in local schools. A bill is currently pending in the legislature that would mandate healthier choices in school vending machines and a healthier menu in school cafeterias (H. 3519, *An Act Relative to the Treatment of Obesity*, Rep. Koutoujian). This bill was developed in response to concerns about child and adolescent obesity; however, its passage would also benefit oral health.

Integrating Oral Healthcare and Pediatric Care

- Develop and implement an integrated training curriculum for medical/dental students.
- Develop and implement Continuing Medical Education (CME) on oral health for pediatricians and other primary care providers, and for dental providers treating very young children.

- Co-locate medical and dental services whenever possible.

Human Resources

- Expand loan forgiveness incentives for new dentists who practice in underserved areas. Include dentists who work in private practices that accept MassHealth.
- Expand training for dental students in working with diverse populations.
- Provide support for pediatric dental residencies.
- Expand the recruitment of minority and low-income students into dental schools.

We have the knowledge to prevent oral disease. In addition to dentists, physicians, social workers, school nurses and others serving families should provide basic information to families about children's oral health.

Note: The information below is adapted from Bright Futures, with recognition that Bright Futures' recommendations are extremely comprehensive and may require prioritization for implementation in practice.

Stage of Development	Ways to start the discussion with families	Information/assistance to provide
Prenatal	<ul style="list-style-type: none"> ▪ Lets talk about oral health. Do you have any problems with your teeth? ▪ Do you know if there's fluoride in your drinking water? ▪ Are you brushing and flossing regularly? ▪ Are you taking prenatal vitamins? ▪ How do you plan to feed your baby? 	<ul style="list-style-type: none"> ▪ Help mom obtain a dental checkup and treatment for herself prior to the birth of the baby ▪ Help mom understand how her own oral health can impact the health of her baby ▪ Explain to mom (or other caregiver) why she must not put the baby to bed with a bottle, prop it in the baby's mouth or allow the baby to feed "at will"
Infancy	<ul style="list-style-type: none"> ▪ How is feeding going? ▪ How well does Tammy fall asleep? Do you give her a bottle in bed? ▪ What drinking water do you give Vincent? ▪ Does Pablo use a pacifier or suck his thumb? ▪ Do you put Amelia in a car seat? ▪ Are you brushing Carlos' baby teeth? ▪ Do you have a dentist for your family? 	<ul style="list-style-type: none"> ▪ Baby should have his/her first dental visit at 12 months ▪ 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" ▪ 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 ▪ At 6 months, begin to offer a cup for water or juice; clean the infant's teeth with a soft brush, beginning with eruption of the first tooth; give the infant fluoride supplements only as recommended by a health professional and based on the level of fluoride in the infant's drinking water ▪ At 9 months, encourage the infant to drink from a cup. If bottle feeding, begin weaning from the bottle

Adapted from Casamassino P. 1996. Bright Futures in Practice: Oral Health. Arlington, VA: National Center for Education in Maternal and Child Health. Available at <http://www.brightfutures.org/oralhealth>.

We have the knowledge to prevent oral disease. In addition to dentists, physicians, social workers, school nurses and others serving families should provide basic information to families about children's oral health:

Stage of Development	Ways to start the discussion with families	Information/assistance to provide
Early Childhood	<ul style="list-style-type: none"> ▪ Are you helping David brush his teeth? ▪ Does Sam's older brother have any fillings? Have you had any problems with your own teeth? ▪ Is your family using fluoridated toothpaste? ▪ Do you know about dental sealants? ▪ Is Susie drinking from a bottle or a cup? ▪ Is Miguel getting regular dental check-ups? ▪ Is Joey using a pacifier? 	<ul style="list-style-type: none"> ▪ Toddlers should have dental visits every 6 months ▪ Give the child fluoride supplements only as recommended by a health professional and based on the level of fluoride in the infant's drinking water ▪ Familiarize yourself with the normal appearance of your child's gums and teeth so you can identify problems if they occur ▪ At 12 months, begin brushing the toddler's teeth with a pea-size amount of fluoridated toothpaste; make an appointment for the toddler's first dental exam; wean the toddler from the bottle ▪ At 15 and 18 months, continue to brush the child's teeth with a pea-size amount of toothpaste. Children under 5 do not have the manual dexterity to properly clean their own teeth ▪ At 3 years, <i>begin</i> teaching the child to brush his/her own teeth
Middle Childhood	<p>To caregiver</p> <ul style="list-style-type: none"> ▪ Are you familiar with dental sealants? ▪ Do you know what to do if Eliza knocks out one of her teeth? ▪ Is Steven brushing and flossing without being reminded? <p>To child</p> <ul style="list-style-type: none"> ▪ How often do you brush your teeth? Do you know why it's important? ▪ What kind of snacks do you eat? ▪ Do you wear a mouth guard when you play sports? 	<ul style="list-style-type: none"> ▪ Children should have dental visits every 6 months ▪ Ensure that the child brushes his teeth twice a day; regularly supervise the tooth-brushing ▪ Give the child fluoride supplements as recommended by a health professional and based on the level of fluoride in the infant's drinking water ▪ Schedule dental appointments ▪ At 6 years, if the child regularly sucks fingers or thumb, begin to intervene gently to help the child stop ▪ At 8 years, teach the child how to floss; teach the child not to smoke ▪ At 10 years, help the child understand the dangers of smoking and other drugs

Adapted from Casamassino P. 1996. Bright Futures in Practice: Oral Health. Arlington, VA: National Center for Education in Maternal and Child Health. Available at <http://www.brightfutures.org/oralhealth>.

We have the knowledge to prevent oral disease. In addition to dentists, physicians, social workers, school nurses and others serving families should provide basic information to families about children's oral health:

Stage of Development	Ways to start the discussion with families	Information/assistance to provide
Adolescence	To adolescent <ul style="list-style-type: none"> ▪ When do you eat...at home? At school? ▪ When was the last time you went to the dentist? ▪ How often do you brush/floss your teeth? ▪ How you feel your teeth look? ▪ Did you smoke any cigarettes in the last month? ▪ Do you wear a helmet when riding a bike or a motorcycle? 	<ul style="list-style-type: none"> ▪ Adolescents should have dental visits every 6 months ▪ Brush teeth twice a day and floss daily ▪ Schedule dental visits

Adapted from Casamassino P. 1996. Bright Futures in Practice: Oral Health. Arlington, VA: National Center for Education in Maternal and Child Health. Available at <http://www.brightfutures.org/oralhealth>.

ENDNOTES

-
- ¹ U.S. Department of Health and Human Services (2000). *Oral Health in America: A Report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health.
- ² Ibid.
- ³ Ibid.
- ⁴ Keep America Smiling: Oral Health in America (2003). The Oral Health America National Grading Project.
- ⁵ The Oral Health Crisis in Massachusetts: Report of the Special Legislative Commission on Oral Health. February 2000.
- ⁶ Massachusetts Dental Society, Delta Dental Plan of Massachusetts, Massachusetts Department of Public Health, Massachusetts Department of Education (2003). *Give Kids a Smile: 2003 Oral Health Survey of Third Grade School Children*. Preliminary Findings.
- ⁷ US Department of Health and Human Services (2000).
- ⁸ Ibid.
- ⁹ Ibid.
- ¹⁰ Ibid.
- ¹¹ Ibid.
- ¹² Journal of the American Dental Association (December 2003). *Access to dental care for children in the United States: A survey of general practitioners*. Vol. 134.
- ¹³ US Department of Health and Human Services (2000).
- ¹⁴ Bruerd B, Jones C. (1996). Preventing baby bottle tooth decay: Eight year results. *Public Health Reports* 111:63-65 as cited in U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau, Oral Health Resource Center (1998). *Oral Disease: A Crisis Among Children of Poverty*.
- ¹⁵ O'Sullivan DM, Tinanoff N. (1993). Maxillary anterior caries associated with increased risk in other primary teeth. *Journal of Dental Research* 72:1577 as cited in U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau, Oral Health Resource Center (1998). *Oral Disease: A Crisis Among Children of Poverty*.
- ¹⁶ Massachusetts Dental Society, Delta Dental Plan of Massachusetts, Massachusetts Department of Public Health, Massachusetts Department of Education (2003). *Give Kids a Smile: 2003 Oral Health Survey of Third Grade School Children*. Preliminary Findings.
- ¹⁷ The Oral Health Crisis in Massachusetts: Report of the Special Legislative Commission on Oral Health. February 2000.
- ¹⁸ US Department of Health and Human Services (2000).
- ¹⁹ The Forsyth Institute. *The Unguarded Gate: Protecting Children's Oral Health*.
- ²⁰ US Department of Health and Human Services (2000).
- ²¹ Massachusetts Department of Public Health. 2003. Fact Sheet.
- ²² Massachusetts Dental Society, Delta Dental Plan of Massachusetts, Massachusetts Department of Public Health, Massachusetts Department of Education (2003). *Give Kids a Smile: 2003 Oral Health Survey of Third Grade School Children*. Preliminary Findings.
- ²³ Centers for Disease Control and Prevention, August 2001.
<http://www.cdc.gov/OralHealth/factsheets/fl-cwf.htm>
- ²⁴ Journal of the American Dental Association. *Access to dental care for children in the United States: A survey of general practitioners*. Vol 134, December 2003.
- ²⁵ Keep America Smiling: Oral Health in America. The Oral Health America National Grading Project 2003.
- ²⁶ Keep America Smiling: Oral Health in America. The Oral Health America National Grading Project 2003.
- ²⁷ The Oral Health Crisis in Massachusetts: Report of the Special Legislative Commission on Oral Health. February 2000.
- ²⁸ Children's Dental Health Project. *The Interface Between Medicine and Dentistry in Meeting the Oral Health Needs of Young Children*.