

August 2005



Oral Health Plan

for New York State



NEW YORK STATE DEPARTMENT OF HEALTH

A Message

Dear Colleague:

I am pleased to present the New York State Oral Health Plan. This plan addresses the burden of oral disease in New York State and was developed by the New York State Department of Health in collaboration with the New York State Public Health Association and stakeholders from across the state.

The Plan has identified goals, objectives, and strategies covering a broad spectrum of issues related to policy, prevention, access, workforce, and surveillance and research. We hope that the guidance provided in this Plan will serve as a blueprint for achieving optimal oral health for all New Yorkers.

Oral diseases are a major health concern affecting almost every person in New York State. Dental caries and periodontal diseases have a huge economic and social cost and can be a portal for serious systemic problems. Most oral diseases are preventable which can then reduce pain, suffering, and health care expenses. Therefore, every effort to promote and implement preventive measures is a wise investment. Thus, its prevention and control is an important priority for society.

We thank everyone who has contributed to this important endeavor. As the Plan moves forward, we invite all stakeholders and interested partners to actively participate in promoting the oral health of all New Yorkers.

Sincerely,

A handwritten signature in black ink that reads "Antonia C. Novello M.D. M.P.H. Dr. P.H." The signature is written in a cursive, flowing style.

Antonia C. Novello, M.D., M.P.H., Dr. P.H.
Commissioner

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I. Executive Summary



Over the last five decades, New York has seen a dramatic improvement in the oral health of its residents through the actions of individuals, professionals, policy makers, state and local governments, educational institutions and health care organizations. The New York State Department of Health's efforts to promote oral health through research, community-based prevention interventions and programs are a testament to its commitment to achieve optimum oral health for all New Yorkers. However, much more can be done to improve oral health. Developing new collaborations and innovative service coordination models, strengthening research, and renewing educational efforts will make it possible to eliminate disparities in oral health.

These efforts are needed because oral diseases such as tooth decay, gum infections and orthodontic problems still affect a large proportion of the population. In New York State, approximately 50% of children experience tooth decay by the third grade. Tooth decay and advanced gum diseases ultimately lead to loss of some or all teeth. In 35 to 44 year-old adults, about 45% have lost one or more teeth due to tooth decay or gum diseases. About 18% of persons 65 years and older have lost all their teeth. Life threatening cancers of the mouth and throat are detected in five New Yorkers every day.

Disparities in oral health observed in national surveys are also apparent in New York State. For example, among persons 65 years and older, the percent of the population who have lost all their teeth varied from a low of 7.4% among those with greater than 12 years of education to

a high of 37.2% among those with less than 12 years of education. Although most oral diseases are preventable, not all individuals and communities benefit fully from the available preventive measures. For example, the percent of mouth and throat cancers detected in the early stage in 2001 varied from a low of 25.9% among black males to a high of 48.4% among white females. While community water fluoridation has been found to be highly effective in controlling tooth decay, about 70% of the population on public water supplies receives fluoridated water. Dental sealant, a protective coating applied on the chewing surfaces of teeth to prevent tooth decay is present in approximately 27% of 3rd grade children compared to the Healthy People 2010 target of 50%.

In recent years, new scientific reports have linked poor oral health to adverse general health outcomes. The role of chronic low-grade periodontal (gum) infections in increasing the risk for heart and lung diseases, stroke, low birth weight and premature births is being studied. A strong association between diabetes and periodontal infection has been observed. The effect of early childhood caries (tooth decay) on weight gain and failure to thrive has been reported. The impact of tooth loss on food choices is well documented. Behaviors that affect general health such as tobacco use, excessive alcohol use and poor dietary choices are also associated with poor oral health outcomes. The emergence of this connection between oral health and general health and risk factors supports oral health care as an essential component of health programs and policies.

New York State has impressive resources and assets. With five academic institutions training dentists, ten dental hygiene schools and over fifty training programs in advanced education in dentistry, New York has much to offer in terms of education, training and research. It has one of the best populations to dentist ratios in the country. A provider network of health centers, hospitals and public health programs supports the dental health needs of vulnerable populations. New York's infrastructure is further strengthened by a financing system that ensures access to care for all needy populations.

New York must capitalize on the strengths of the existing infrastructure while enabling change and engaging new allies to better address the following challenges:

- Convincing the public that oral health is an important part of their overall health;
- Improving the utilization of effective preventive measures both at the individual level and community level;
- Improving the diversity and flexibility of the dental workforce with particular attention to the geographic maldistribution of dental professionals;
- Addressing the high cost of dental education and the debt burden for new graduates that limits their ability to practice in underserved areas;
- Improving the measurement and tracking of oral diseases, risk factors, workforce and utilization of dental services.

For New Yorkers to enjoy overall health and well being, there must be new vehicles for promoting oral health and preventing disease as part of general health. Public-private partnerships at the state and local levels that involve a variety of stakeholders have the potential to become these vehicles. It is therefore imperative to create an environment that develops, nurtures and sustains these partnerships.

With this in mind, the New York State Department of Health and the New York State Public Health Association worked collaboratively with many partner organizations and individuals to develop a comprehensive State Oral Health Plan for oral health promotion, disease prevention, and control. A Steering Committee of representatives of partner organizations guided the plan development. The plan includes specific objectives for future reductions in oral disease and related risk factors and objectives for the promotion of oral health. It recognizes the previous efforts to address children's oral health and workforce shortages in rural areas. Participants at the 2001 New York State Children's Dental Summit developed an inventory of

strategies to improve children's oral health upon which this plan builds. The Southwestern New York Rural Health Care Workforce Summit provided an action plan for addressing workforce issues in rural areas.

This plan's specific goals and objectives will serve as a blueprint for all involved in improving and achieving optimal oral health. All stakeholders can use this plan as a tool to enlist partners, attract funding sources and promote action. The scope of this plan is broad, covering a spectrum of issues and concerns regarding policy, prevention, access, workforce, and surveillance and research. The following strategies have been identified as priorities for action:

1. Explore opportunities to form regional oral health networks by encouraging the Preventive Dentistry Programs, Perinatal Networks, Rural Health Networks, Local Health Departments, providers, educational institutions and other community coalitions to work together to identify prevention opportunities and address access to dental care in their communities.
2. Formalize a statewide coalition to promote oral health. A statewide coalition should bring together





professional groups, local partnerships, local health departments and providers to coordinate and link existing campaigns to communicate the importance of oral health, signs and symptoms of oral disease and ways of reducing risks.

3. Encourage professional organizations, educational institutions, key state agencies and other stakeholders to examine and make recommendations on:
 - a. Laws and regulations that affect the provision of dental services, and practice of dentistry and dental hygiene.
 - b. Financing of dental education including scholarship and loan repayment programs.
 - c. Effective approaches to address disparities in oral health including changes to curricula in schools of dentistry and dental hygiene.
 - d. Strengthening the dental health workforce including integrating dental hygiene education and training programs into undergraduate and graduate programs to advance the careers of dental hygienists.
 - e. Ways to involve retired dentists and dental hygienists who want to provide pro-bono care in not-for-profit settings.
4. Assess gaps in dental health educational materials

and explore ways to integrate oral health into health literacy programs.

5. Develop and widely disseminate guidelines, recommendations and best practices to address childhood caries, maternal oral health, tobacco and alcohol use.
6. Strengthen the oral health surveillance system so that oral diseases and their risk factors can be periodically measured by key socio-demographic and geographic variables and tracked over time to monitor progress.



II. Overview of Oral Health

Dental caries is one of the most prevalent chronic illnesses among children (1). In the United States, 30 percent of all children's health expenditures are devoted to dental care (2). Although most dental diseases are preventable, many children unnecessarily suffer the consequences of dental diseases because of inadequate home care, and inability to access preventive and treatment services in a timely manner (1;3-5).

Oral diseases in adults negatively impact their ability to eat healthy food, overall health and ultimately employability (1). Several reports link low-grade chronic infection in the mouth (periodontal diseases) to systemic illnesses such as cardiovascular diseases, respiratory ailments, and adverse pregnancy outcomes. Persons with diabetes are also at increased risk for periodontal infections (1).

Many risk factors for oral diseases are known (1). Frequent feeding in young children and the transmission of caries causing bacteria from mothers to children through common practices such as tasting infant's food before feeding are associated with early childhood caries (6-8). Lack of fluoride, frequent snacking and inadequate home care such as lack of tooth brushing increase the risk of dental caries in older children. Tobacco use is associated with both periodontal disease and oral cancer in adults (9).

There are clear socioeconomic disparities in the distribution of oral health problems. Children from low-income families have a higher prevalence of dental caries, higher frequency of untreated disease and lower utilization of preventive services (1;3-5;10-13). These differences are observed in children as young as 2-4 years as well as in the elderly. The reasons for these disparities include lack of awareness of the importance of oral health, unfamiliarity with the dental health care delivery system, lack of providers willing to participate in the publicly financed program and lack of resources to pay for care (1).

Although oral diseases are easily preventable and treatable, lack of continuous insurance coverage is a problem for many children and adults (1;3;5). Nationally, as many as 36% of children lack dental insurance coverage on any given day. For every person without health insurance



coverage, there are as many as 2.3 persons without dental health insurance coverage (14). Further, access to dental care providers is extremely limited for many children in rural and inner city areas (1;4;5;10;12;15;16).

According to the Medical Expenditure Panel Survey, people who visited a dentist paid an average of \$498 (17). Approximately 49.3% of all dental expenses were paid out of pocket. While Medicaid paid only 4% of all health expenditures for dental care, it accounted for 25.4% of all expenditures in children less than 6 years of age.

III. Priority Areas of Opportunity for Improving Oral Health: Goals, Objectives and Strategies

Goal 1: Develop and promote policies that integrate oral health promotion, disease prevention, and oral health care into state and local health policy agendas to achieve improvements in the oral health of New Yorkers.

Background

Policies based on scientific evidence and emphasizing the importance of prevention are essential for addressing the silent epidemic of dental diseases, improving oral health, and eliminating disparities. Policies should promote integration of oral health into general health and address risk factors such as tobacco and alcohol use and dietary practices. While many people have benefited from the advances in dentistry, a sizeable proportion of the population suffers from a disproportionate burden of preventable dental diseases. Therefore, opportunities should be created to encourage providers to serve vulnerable population groups as well as to attract dental professionals to underserved areas.

Issues

- Dental diseases are for the most part preventable, and effective interventions are available both at community and individual levels. These interventions are not being utilized to the fullest extent.
- In many instances, oral health remains separate and distinct from general health. Risk factors such as tobacco and alcohol use, dietary practices and other health habits, which are common to many illnesses, are also implicated in oral diseases. Therefore, oral health should be integrated into all health programs.
- Public health infrastructure and appropriate educational and training programs should be

strengthened to integrate oral health into general health programs and to provide specialized dental services.

Objectives

Objective 1.1: By 2006, identify policy options to strengthen and improve New York's capacity to advance new innovations and support new initiatives.

Objective 1.2: By 2006, identify changes in the laws and regulations that are required to assure all New Yorkers benefit from proven preventive measures, and ensure that public resources for oral health services are targeted to the populations at risk for oral diseases and that new programs improve access for underprivileged individuals.

Strategies

- Inform and educate policymakers and officials at local, state and federal levels about oral health needs, effective programs and successes.
- Create and promote regional oral health networks and a statewide Oral Health Coalition to promote oral health.
- Encourage professional organizations, educational institutions, key state agencies and other stakeholders to examine and make recommendations on:
 - Laws and regulations that affect the provision of dental services, and practice of dentistry and dental hygiene.
 - Financing of dental education and scholarship and loan repayment programs.
 - Effective approaches to address disparities in oral health including changes to curricula in schools of dentistry and dental hygiene.
 - Strengthening the dental health workforce including integrating dental hygiene education and training programs into undergraduate and graduate programs to advance the careers of dental hygienists.



- Provide guidance and technical assistance to develop Centers for Oral Health Excellence for highly specialized services. Providers would be trained in the care of special needs populations and perform services that are currently difficult to locate and obtain for the disabled, mentally ill and medically compromised.
- Assess the feasibility of bundling state, federal and local programs for small businesses to assist communities in recruiting dental providers into high need, underserved areas, and for creating a “one-stop-shopping” service for securing this assistance.
- Explore options for developing a loan forgiveness program for dental residents and dental hygienists willing to practice in underserved areas of New York.

Goal 2: Promote oral health as a valued and integral part of general health across the life cycle.

Background

According to the Surgeon General report “A National Call to Action to Promote Oral Health”, the perception that oral health is separate from general health is deeply ingrained in the American consciousness. The report identified the need to enhance the public’s understanding of the meaning of oral health and the relationship of the mouth to the rest of the body. The signs and symptoms of many oral diseases are not apparent in the early stages. Although major oral diseases such as dental caries, periodontal diseases and oral cancer are preventable, not all members of society are aware of the healthy habits required to avoid illnesses. Furthermore, fear of dentistry keeps many people away from routine care.

Issues

- Common fears and misconceptions about oral health and treatment create barriers.
- Coordinated statewide oral health education campaigns are needed.
- Educational materials are needed that are comprehensive, culturally competent and available in multiple languages, and meet appropriate literacy level for all populations.

Objectives

Objective 2.1: By 2007, assess and address gaps in oral health educational materials. Formulate and distribute culturally and linguistically appropriate materials that enhance oral health literacy to the public and providers.

Objective 2.2: By 2007, explore opportunities to build upon existing campaigns that communicate the importance of oral health, signs and symptoms of oral disease and ways of reducing risk such as Children’s Dental Health Month, National Dental Hygiene Month, Oral Cancer Awareness Week, Give Kids a Smile, Special Olympics Special Smiles and tobacco cessation campaigns.

Objective 2.3: By 2007, develop training programs that improve the skills of primary care providers, nurses, social workers and case managers in evaluating their patients' and client's oral health problems and issues, and improve their ability to counsel individuals to reduce their risk for oral disease.

Objective 2.4: By 2007, increase referrals among oral health care providers and other health specialists as warranted by examinations and health history.

Strategies

- Integrate oral health into health literacy programs. Develop and disseminate educational materials focusing attention on topics such as caries in young children, maternal oral health, oral cancer, fluoride, dental sealants and the importance of good dietary habits.



- Explore opportunities to integrate oral health into ongoing public health programs.
- Strengthen public awareness campaigns by coordinating activities and funding, partnering with stakeholders, and securing foundation support.
- Assess training needs and disseminate information on available training programs that utilize competent teachers with oral health experience to train a wide range of health care providers.
- Disseminate existing guidelines, recommendations and best practices to the dental health work force, physicians, nurse practitioners, counselors and other appropriate health care workers regarding childhood caries, maternal oral health, tobacco and alcohol use.
- Integrate oral health into primary health care by scheduling medical and dental visits together where possible, and facilitating the development of effective referral networks.
- Work with primary health care training programs to integrate inspection of the oral tissues as part of routine physical examination curricula.
- Improve oral care in primary care medical practice settings by including dental conditions on pre-printed primary care records.
- Work with professional groups to increase referrals among oral health care providers and other health specialists. Work with professional organizations of health care professionals to target physician's offices for integrating oral health screening as part of routine physical examinations, and providing anticipatory guidance to families on proper oral health care.

Goal 3: Improve access to high quality, comprehensive, continuous oral health services for all New Yorkers and eliminate disparities for vulnerable populations.

Background

Dental diseases and unmet need for dental care are more prevalent in populations whose access to oral health services is compromised by the inability to pay for services, lack of adequate insurance coverage, lack of availability of providers and services, transportation barriers, language barriers and complexity of oral and medical conditions. While Medicaid, managed care organizations, Child Health Plus and Family Health Plus insurance programs and public health clinics have expanded outreach efforts to enroll eligible persons, availability of providers with training to handle complex oral health problems remains a problem in certain geographic areas. Compounding the problem is the inability of many patients to maintain dental appointments on a regular and frequent basis. At present, only about 2,620 dentists actively participate (bill for more than \$10,000 per year) in the Medicaid program. In addition, dental offices and clinics often do not have extended hours of service to accommodate patients during evening hours and weekends. This presents a problem for the working poor to make dental appointments.

Issues

- Dental caries in young children has a significant impact on certain population groups due to the difficulty in obtaining access, lack of providers to treat young children and the cost of care.
- Many women of childbearing age do not seek dental care in a timely manner, so opportunities for preventing dental problems in women and children are missed.

- Often reimbursement for dental care for persons with special health care needs does not reflect the additional time and resources needed.
- Oral health programs in health centers and hospitals do not have the resources for outreach, education and enabling services.
- The capacity of safety net clinics is not sufficient to meet the needs of the population. The productivity of these clinics is lower due to broken appointments.
- Dental insurance programs are not available to the elderly and Medicare does not cover routine dental care.
- Access to dental care for the home bound, institutionalized, elderly and other vulnerable population groups is limited while their numbers continue to grow. Vulnerable populations include:
 - those of low income, including children, homeless and migrant workers;
 - pregnant and parenting women who also need inter-conceptional care;
 - children with special health care needs;
 - persons with HIV infection;
 - adults with mental illness, substance abuse problems and tobacco dependence;
 - developmentally disabled or physically challenged children and adults ;
 - the elderly, including those that are homebound and institutionalized; and
 - children in need of medically-necessary orthodontic care.

Objectives

Objective 3.1: By 2008, increase the number of dentists actively participating in the Medicaid program from 2620 to 3600.

Objective 3.2: By 2008, assess the number of oral health providers needed to serve people with special needs.

Objective 3.3: By 2010, increase the number of children in Medicaid and Child Health Plus who visit a dentist annually to the Healthy People 2010 goal of 57%. (Baseline percentages: Medicaid Managed Care - 36%, Child Health Plus - 41%, Medicaid Fee For Service - 37%)

Objective 3.4: By 2010, increase the number of low-income adults who receive an annual dental visit as measured by the Behavioral Risk Factor Surveillance System.

Objective 3.5: By 2008, increase the number of pregnant women in the Medicaid program who receive comprehensive dental care from 13% to 26%.

Objective 3.6: By 2010, reduce the necessity of treating children younger than 6 years in hospital operating rooms from the current level of 2900 to 1500 per year by addressing caries earlier and more effectively.

Objective 3.7: By 2008, assess the waiting time for treatment for special needs populations in hospitals and implement strategies to ensure that waiting times for routine and emergency visit appointment are no longer than one month and 24 hours, respectively.

Objective 3.8: By 2008, explore options that will encourage Article 28 facilities to establish comprehensive school-based oral health programs in areas of high need.

Objective 3.9: By 2010, increase the number of Article 28 facilities providing dental services across the state and approve new ones in areas of highest need.

Objective 3.10: By 2007, identify programs that have successfully reduced “no show” rates in dental offices and dental clinics and disseminate information about these programs.

Strategies

- Evaluate attempts to simplify administrative processes including billing, enrollment and prior approval for public insurance programs and their effect on increasing and maintaining provider enrollment.
- Explore incentives for dentists who significantly increase their service to Medicaid clients.
- Explore including a dental measure in the quality incentive program that rewards managed care plans that perform at higher levels.
- Explore development of loan repayment incentives for dentists and hygienists linked to service reimbursed by public insurance programs. (Also related to Goal #1)
- Explore models from other states that allow dental hygienists to bill for services provided in schools, nursing homes, and such other public health settings. (Also related to Goal #1)
- Promote services that allow patients greater access to oral health care, including:
 - mobile and portable dental programs;
 - school-based prevention and treatment;
 - case management or care coordination.
- Increase the number of safety net dental clinics in local health departments, community health centers, migrant health centers, and their capacity to provide care, by:
 - assessing potential non-state funding sources for dental health programs; and

- removing administrative and legal barriers to establishing innovative service sites, such as mobile vans, expanded hours and school-linked services.
- Identify barriers (e.g. resources, staffing, services) to including dental care in existing community health center clinics and hospitals that do not currently provide dental care and encourage hospitals in underserved areas to provide dental services.

Goal 4: Enhance the oral health information and knowledge-sharing infrastructure to communicate best practices, improve collaboration, and replicate effective programs and proven efforts.

Background

Dental disease prevention and health promotion programs such as water fluoridation, school-based interventions, tobacco control, efforts to integrate oral health into women, infants and children programs and case management are underutilized. Achieving and maintaining oral health requires actions on the part of individuals, professionals, communities, health care and social service agencies, and educational institutions. The American Association of State and Territorial Dental Directors has compiled a directory of many best and promising approaches for community oral health programs. Linking private and public sectors, and involving many stakeholders provide opportunities to capitalize on unique strengths and resources. The New York City Department of Health and Mental Hygiene has developed a Healthstat Provider Directory. This directory is being made available as an initial reference tool for New York City consumers of Medicaid Managed Care

and Child Health Plus, and those who advise them, in selecting primary care providers, dentists, obstetricians and gynecologists, hospitals or clinics. Several regional dental societies have also developed directories of providers that can be used by the public for locating dentists.

Issues

- Lack of oral health infrastructure at the local level has hindered the ability to communicate best practices and programs.
- Public-private partnerships at the state and local level must be encouraged and supported.

Objectives

Objective 4.1: By 2007, increase the number of oral health coalitions, partnerships and networks in the state so that there is an opportunity for people and providers to collaborate in every region of the state, gain access to the media and promote communication.

Objective 4.2: By 2010, develop a system that provides consumers with information about dental practices and facilities.

Strategies

- Promote oral health coalitions, partnerships and networks at local and regional levels to (also related to goal #1):
 - Organize regional forums for partners to discuss local problems, share best practices and success stories, and identify education needs;
 - Increase availability of care for underserved populations;
 - Involve local dentists and dental hygienists in public health issues;
 - Create opportunities for Academic Dental Centers and dental and dental hygiene students to get involved in local oral health issues;

- Develop integrated dental delivery systems that promote cooperation between the medical and dental providers;
 - Promote oral health campaigns, gain media access, and educate policy makers about success stories; and
 - Educate communities on oral health topics such as fluoridation, early childhood caries prevention, maternal oral health and tobacco cessation, oral cancer risk reduction and injury prevention.
- Enhance communication between stakeholders in different regions in the state.
 - Develop a speakers' bureau to address oral health issues.
 - Develop an inventory of effective programs and best practices that can be widely disseminated.
 - Provide technical assistance to local groups and assist in procuring funding for oral health programs.
 - Replicate the Healthstat provider directory developed by the New York City Department of Health and Mental Hygiene about dental practices and facilities in other parts of the State.

Goal 5: Address risk factors for oral diseases by targeting population groups and utilizing proven interventions.

Background

Many risk factors for oral diseases such as poor oral hygiene, lack of self-care, inappropriate infant and toddler feeding practices (such as frequent snacking and putting children to bed with bottles), lack of regular dental visits, tobacco and alcohol use are well known. Furthermore,

interventions are available. Programs such as water fluoridation, fluoride supplementation, school-based or linked dental sealant programs, screening and referral, and tobacco control have the potential to reduce the burden of oral diseases. However, both community and individual level interventions are underutilized. Some administrative mechanisms required for administering medications in schools and implementation of school-based dental programs create barriers for implementation of school-based interventions.

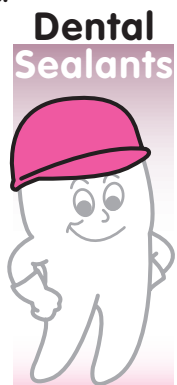
Issues

- In general, oral health care is not adequately integrated into general health care.
- Common risk factors need to be addressed by both medical and dental providers
- Low utilization of oral cancer screening and late detection of oral cancer have created a significant burden.
- Efforts to educate the public and policy makers about the benefits of water fluoridation are needed.
- Several barriers exist for promoting fluoride rinse and tablet programs in schools, Head Start Centers, and Child Care facilities.

Objectives

Objective 5.1: By 2010, increase the proportion of the population receiving fluoridated water from the current level of 70% to 75% and ensure optimum level of fluoride in community water systems.

Objective 5.2: By 2010, increase the proportion of 3rd grade children who have dental sealants to at least 50%, and reduce the proportion of children with dental caries experience and untreated caries to no more than 42% and 20% respectively.



Objective 5.3: By 2010, increase the proportion of pregnant women receiving comprehensive oral health assessments by dental providers from 13% to 26%.

Objective 5.4: By 2010, increase the percent of adults receiving an annual examination for oral and pharyngeal cancers to 50% from approximately 30%.

Objective 5.5: By 2007, encourage all schools of dentistry and dental hygiene to teach their students about the United States Public Health Services Clinical Practice Guidelines for Treating Tobacco Use and Dependence.

Objective 5.6: By 2010, ensure that all health care workers employed to assist the elderly and people with disabilities are trained in daily oral health care for the individuals they serve.

Strategies

- Actively promote fluoridation in large communities (population size greater than 10,000) and in counties with low fluoridation penetration rates. Educate the public regarding the benefits of fluoride by incorporating effective messages in health campaigns.
- In communities where fluoridation is not available, continue the supplemental fluoride program. Identify and remove barriers for implementing fluoride supplement programs.
- Ensure the quality of the fluoridation program by monitoring fluoride levels in water, conducting periodic inspections and providing feedback to water plant operators. Continue the education program for water plant personnel.
- Require oral health screening as part of the school physical examination in appropriate grade levels.
- Promote dental sealants by providing sealant equipment and funding to selected providers in targeted areas where dental sealant utilization is low.

- Encourage Article 28 facilities to establish school based dental health centers in schools and Head-Start Centers to promote preventive dental services in high need areas.
- Provide technical assistance to every dental office and dental clinic in New York State to implement the United States Public Health Services Guidelines for Treating Tobacco Use and Dependence.



Background

The availability of an adequate number of dental health professionals is essential to address the oral health needs of all New Yorkers. While the state has one of the best population to dentist ratios in the country, the distribution of practitioners is uneven. There are many rural and inner city areas in the state where shortages of dentists and dental hygienists exist and specialty services may not be available. This is compounded by the inadequate number of dentists treating underserved population groups and under representation of minorities in the workforce. Although the number of women entering dental school has increased in recent years, this is not the case for under-represented minority groups. The reasons for inadequate capacity in certain areas and lack of diversity of the workforce are complex, but include closing some dental schools and reduced enrollment in the 1980's, difficulty in recruiting and retaining dental and dental hygiene faculty, aging of the workforce, the high cost of dental education, and the high cost of establishing dental practices.

Issues

- Availability of dentists to treat persons enrolled in the Medicaid program is limited in certain areas.
- Patients experience geographic barriers to care. Waiting times for appointments at Article 28 facilities and continuity of care for high-risk populations could be improved. Efficiency could be enhanced by meaningful reductions in “no show” rates in dental clinics.
- The distribution of dentists and dental hygienists in New York State is uneven. There is a shortage of dentists and dental hygienists in some parts of New York State. Specialty services are not available in several parts of New York State.
- Many retired dentists and dental hygienists who wish to be active providers of care experience barriers such as the cost of malpractice insurance and continuing education requirements.
- Schools of dentistry and dental hygiene face difficulty in recruiting and retaining faculty.



Objectives

Objective 6.1: By 2010, all eligible areas will be designated as Dental Health Professional Shortage Area so they can access federal resources.

Objective 6.2: By 2010, develop information about workforce, facilities and demographics that will identify areas for the development of new dental practices.

Objective 6.3: By 2010, increase the under-represented minority enrollment in schools of dentistry and dental hygiene to more closely reflect the population of New York.

Objective 6.4: By 2010, support the recruitment and retention of retired dentists and dental hygienists to treat low income and special needs populations.

Strategies

- Identify ways to facilitate the application process for dental health professional shortage area designation. Provide data and technical assistance in the preparation of applications (e.g. use of Public Use Microdata Samples (PUMS) data).
- Explore models used in small business development (e.g. tax incentives, enterprise zones, loan repayment programs) to assist underserved communities to recruit dental health professionals.
- Encourage all dental and dental hygiene schools to employ best practices in the recruitment and retention of under-represented minority students. Examine how other professions recruit and retain minority students.
- Develop programs to encourage children in elementary and middle schools to consider careers in oral health.
- Strengthen the Regent’s Scholarship and similar programs for students of dentistry and dental hygiene who will work in underserved areas or who are from under-represented minority communities.

- Improve the dental admission test scores of under-represented minority students by creating and sponsoring workshops to prepare them to take the dental school entrance examinations.
- Evaluate the practice acts of other states and the impact of recent changes in New York State to address workforce issues.
- Evaluate best practices in deploying retired dental health professionals and disseminate the information to communities, health facilities and practices. Recruit and support retired dentists and dental hygienists to volunteer to care for underserved populations.
- To engage retired dental health professionals, explore ways to eliminate barriers such as the cost of malpractice liability insurance, professional licensure, and continuing education requirements and consider New York State income tax credits proportional to hours served.
- Explore ways to provide liability coverage for retired dentists and dental hygienists providing pro-bono care in not-for-profit settings.
- Explore ways to attract and retain qualified dental and dental hygiene faculty and to engage community providers in the education of new practitioners.



Goal 7: Promote educational opportunities and experiences that prepare the oral health workforce to meet the treatment needs of all New Yorkers including the underserved population groups.

Background

Traditionally, dentists and dental hygienists are trained in schools of dentistry and dental hygiene to practice in private offices. Over 90% of dentists and dental hygienists practice in private settings. Effective in 2007, dentists intending to practice in New York State will be required to undergo one year of internship training in accredited advanced education programs. This not only prepares future dentists to treat more complex dental and medical problems but also creates opportunities for rural and inner city hospitals and health centers to establish training programs, attract dentists and expose them to unique needs of underserved population group. Students trained in the community are more likely to return to practice in these settings. Schools of dentistry and dental hygiene may establish affiliation agreements to place students, offer mentors, provide training in advanced dentistry, and attract faculty.

Issues

- Educational and training opportunities in underserved areas have the potential to improve the oral health of the community.
- Schools of dentistry and dental hygiene lack resources to place students in community settings.
- Inadequate support of non-hospital based residency programs impacts training programs.

Objectives

Objective 7.1: By 2010, encourage all hospitals and health centers located in dental health professional shortage areas to develop training programs to meet the continuing educational needs of dental workforce members.

Objective 7.2: By 2010, create opportunities for all dental, dental hygiene students and residents to work in dental professional shortage areas for a significant period through externships, internships, and partnerships.

Objective 7.3: By 2010, ensure that a sufficient number of trained dentists and dental hygienists are available to provide dental care to the population with special health care needs.

Strategies

- Survey all hospitals and health centers providing dental services to determine their interest in participating in educational programs.
- Explore ways of replacing lost financing for residency programs outside of hospital settings.
- Investigate ways to overcome barriers that prevent students and residents from being assigned to internship and externship programs.
- Explore best practices used in dental and dental hygiene schools that provide internship and externship experience outside traditional training environments.
- Facilitate linkage between dental residency programs and non-dental providers in dental health professional shortage areas.
- Explore opportunities such as mini residency programs to improve the skills of the dental workforce.

- Encourage educational and training programs to update competencies and standards to enhance the treatment of children and people with special health care needs.



Background

According to the Surgeon General's report titled Oral Health in America, the public health system's capacity for addressing oral health issues is diluted and not integrated with other public health programs. The number of practitioners trained in public health is extremely limited. As a result, proven disease prevention programs are not being implemented in many communities. This has created gaps in prevention and care that affect the nation's neediest populations.

Issues

- Students and practicing dental professionals are not adequately exposed to public health issues and training. Practitioners for the most part are isolated.
- Private practitioners have not been involved in decision-making that impacts the oral health of the population.

Objectives

Objective 8.1: By 2010, identify the opportunities for dentists and dental hygienists to improve their knowledge, skills and competency in public health practice.

Objective 8.2: By 2010, increase opportunities for dentists and dental hygienists to participate in oral health coalitions and other community collaborations in their areas.



Goal 9: Develop a research agenda to test new and creative interventions and support evidence based dental public health practice.

Strategies

- Create educational opportunities in public health for dental professionals.
- Encourage partnerships between dental professionals and Area Health Education Centers (AHEC) in organizing educational and training programs.
- Identify factors that affect the participation of the dental workforce in public health programs, location of practice in dental health professional shortage areas and provision of services to underserved populations.
- Provide incentives to encourage dentists, dental hygienists and dental assistants to work in public health settings. Identify interventions to attract well-trained and motivated providers.
- Provide opportunities for training in cultural competency.
- Encourage dental schools to develop courses on ethics and implement a uniform pledge to care for all patients.

Background

Preventing and controlling childhood caries, oral cancer, periodontal diseases, and oral health problems in pregnant women and persons with special health care needs require rigorous studies to support evidence based practice. This can be accomplished through collaboration and coordination among academic and research institutions, and public health practitioners. Evaluation should be built into existing programs and campaigns to guide future efforts.

Issues

- There is a need to build creative solutions to public health problems that address the oral health needs of the whole population.
- Current strategies are not adequately addressing disparities.

Objectives

Objective 9.1: By 2006, bring together academic and research institutions and public health practitioners to develop and implement a research agenda.

Objective 9.2: By 2006, develop research activities that address the oral health issues of people with special health care needs.

Objective 9.3: By 2006, increase capacity to evaluate existing programs.

Strategies

- Convene a workgroup of researchers and public health practitioners to develop and prioritize a research agenda.
- Identify potential collaborators and funding opportunities to support research priorities. Disseminate research findings so they can be used by community organizations and are accessible to the public.
- Use the data collected through the Children with Special Health Care Needs (CSHCN) National Survey to determine if there is sufficient capacity in the system to serve their oral health care needs.
- Survey Article 28 facilities to identify their ability to provide services to children and adults with special needs.
- Collaborate with early childhood programs to conduct surveys and focus groups regarding the availability of dental care.
- Evaluate the effectiveness of existing campaigns in improving the knowledge, behavior and attitudes of the public towards oral health.
- Offer technical assistance to providers for evaluation of their public health programs.



Goal 10: Maintain and enhance the existing surveillance system to adequately measure key indicators of oral health and expand the system to include other elements and address data gaps.

Background

Several data sources are used to monitor oral diseases, risk factors, access to programs, utilization of services and workforce. The New York State Oral Health Surveillance System includes data from oral health surveys of 3rd grade children, the Behavioral Risk Factor Surveillance System, the Cancer Registry, the Congenital Malformations Registry, the Water Fluoridation Reporting System, the Pregnancy Risk Assessment Monitoring System, Medicaid, Managed Care Performance Reports, and the State Education Department's licensing data. These data are used for planning and evaluation as well as to contribute to the national database for monitoring trends in dental health. Enhancement and expansion of the current system will provide data needed for identifying problems, set priorities and assess progress towards goals and objectives.

Issues

- Data are needed to identify problems, set priorities and assess progress towards goals and objectives.
- Oral health problems including dental caries, periodontal disease, trauma, oral cancer, risk factors, distribution of the workforce, and utilization of dental services are not adequately measured and reported.

Objectives

Objective 10.1: By 2006, expand the oral health component of existing surveillance systems to provide more comprehensive and timely data.

Objective 10.2: By 2006, enhance the surveillance system to assess the oral health needs in special population groups.

Objective 10.3: By 2006, expand the existing New York State Oral Health Surveillance System to collect data from additional sources, including community dental clinics, schools and private dental practices.

Objective 10.4: By 2006, develop a system to assess the distribution of the dental workforce and the characteristics of dental practitioners.

Objective 10.5: By 2006, implement a surveillance system to monitor dental caries in one to four-year-old children.

Objective 10.6: By 2010, explore the opportunities for establishing a surveillance system to monitor periodontal disease in high-risk patients such as persons with diabetes and pregnant women.

Objective 10.7: By 2006, implement a surveillance system to monitor oro-facial injuries.

Objective 10.8: By 2006, ensure data is available to the public in a timely manner.

Objective 10.9: By 2006, encourage stakeholders to participate in surveillance activities and make use of the data that is obtained.

Strategies

- Make data more relevant to stakeholders by using GIS mapping techniques with existing data sources.
- Collect more comprehensive data on needed care for children (in addition to EPSDT visit assessment.)
- Explore annual collection of oral health data in the Behavioral Risk Factor Surveillance System (BRFSS) in order to ensure meaningful county level data.
- Explore inclusion of risk factors for oral cancer in the expanded BRFSS.
- Work with CDC and the State Education Department to explore inclusion of oral health questions in the Youth Risk Behavior Surveillance System (YRBSS).
- Assess smokeless tobacco use in the oral health module in the BRFSS and YRBSS.
- Identify the existing data collection systems regarding diabetes, the elderly and pregnant women and explore opportunities to include oral health indicators.
- Expand the Pregnancy Risk Assessment and Monitoring System (PRAMS) to ascertain dental need.





- Use approaches such as an “Index of Treatment Need” or “Report Cards” to prioritize interventions at each elementary school through the use of existing data.
- Replicate the survey of physicians and nurses (administered as part of their re-registration process every 3 years) to collect information about dentists and dental hygienists. Survey should include questions on individuals’ willingness to work with local or regional coalitions.
- Collaborate with the Department of Education to collect and analyze registration survey data, and publish a report periodically.
- Collaborate with new partners such as Head Start Centers and WIC to collect data regarding oral health status and unmet treatment needs.
- Use the Statewide Planning And Regional Cooperative System (SPARCS) to assess oro-facial injuries.
- Collect data from school based programs to assess the occurrence of oro-facial injuries and factors involved in the injury.

- Evaluate the feasibility of incorporating diagnostic codes in the billing procedures.
- Develop and maintain a web page on the NYSDOH website to display oral health data.
- Publish data on the Community Health Assessment Public Clearinghouse site.
- Communicate the results of the surveillance data to local health units, health centers, and hospitals, schools of dentistry and dental hygiene and professional organizations.
- Create partnerships to promote, share and use data.
- Partner to conduct trainings on needs assessment and development of Municipal Health Services Plans at the county level.
- Explore the feasibility of adding a measure on dental sealants to the Medicaid Managed Care quality measures.



IV. Prevalence, Risk Factors, and Workforce

In New York State, data on oral health status, risk factors, workforce, and the use of dental services are available to assess problems, monitor progress, and identify solutions. The following indicators provide useful information to assess progress toward selected Healthy People 2010 Oral Health Objectives.

PREVALENCE OF DENTAL DISEASES IN CHILDREN

Oral Health Status in Young Children

In the United States, dental caries in children is the most common chronic disease and the need for treatment is also most frequent. Nationally, a progress review toward Healthy People 2010 observed that the prevalence of dental caries in 2-4 year old children was approximately 23% (HP 2010 Target 11%). Of children aged 1-5 years enrolled in the Early and Periodic Screening, Diagnostic and Treatment Program (EPSDT), only 16% received any preventive service. A survey of a disadvantaged group of children in northern Manhattan found a high level of unmet need (18). Because management of children of this age group in a dental office is difficult, many children require treatment in an operating room. In New York, approximately 2900 children younger than 6 years of age visit a hospital annually for dental caries.

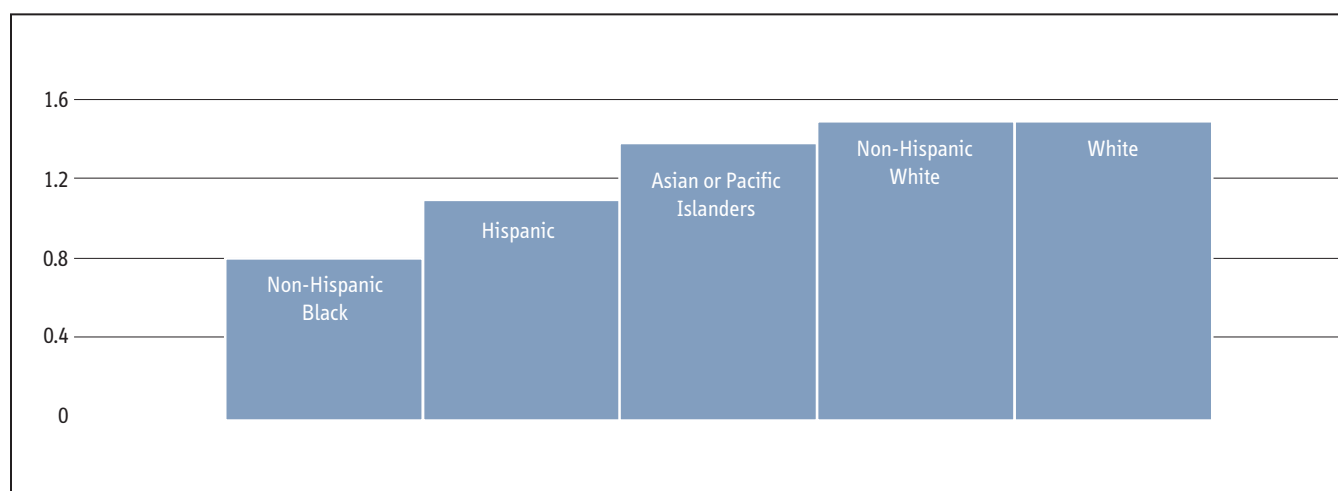
Cleft lip and Cleft Palate

Cleft lip and cleft palate are one of the most common congenital anomalies. These conditions may occur as isolated defects or as part of other syndromes. In the United States, the prevalence rates in the general population have been reported to be approximately 1.2 per 1000 births for cleft lip with or without cleft palate and 0.56 per 1000 births for cleft palate alone (1). In Year 2000, there were 183 cases of cleft lip with or without cleft palate (0.71 per 1000 births) and 143 cases of cleft palate (0.55/1000 births) in New York State. The rate of oral clefts has been reported to be higher among whites compared to that for blacks (1). In New York State, the rate varied from 0.8 to 1.5/1000 births in different racial and ethnic groups (Figure 1).

Oral Health Status in 3rd Grade Children

The following data are derived from a survey of 3rd grade children conducted during 2002-2004 by the New York State Health Department in collaboration with many partners. The survey included a randomly selected sample of children from 357 schools. The objectives of this survey were to determine the following indicators of oral health:

Figure 1. Average rate of cleft lip and cleft palate per 1000 births in New York State. Congenital Malformation Registry, 1990-2000.

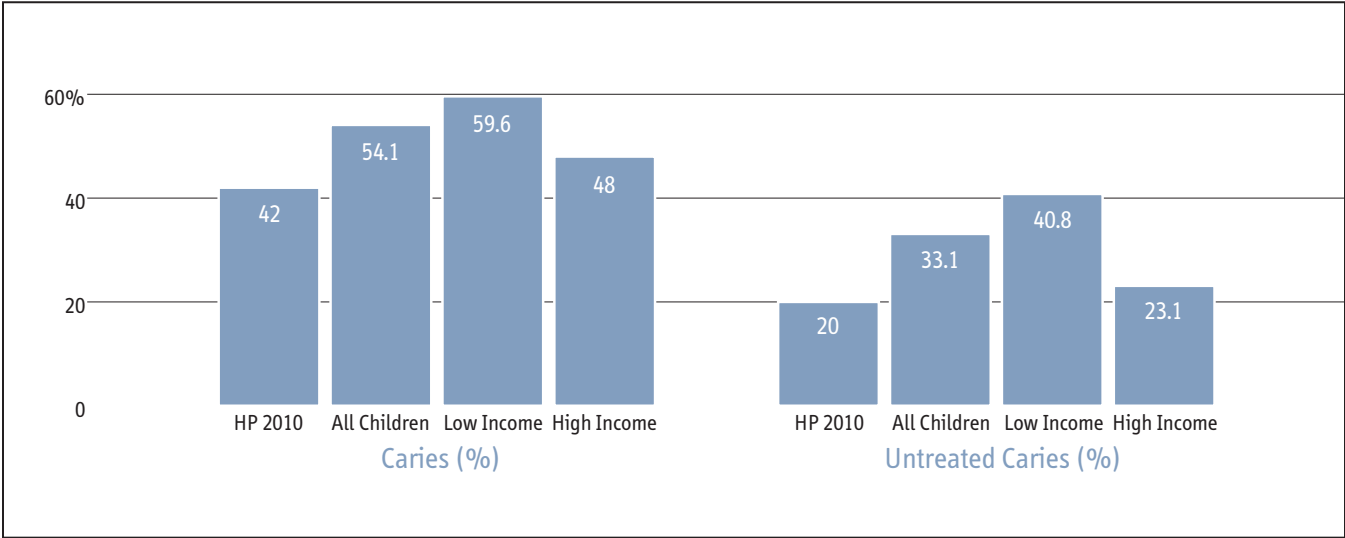


- Proportion of children with caries experience (history of tooth decay).
- Proportion of children with untreated tooth decay.
- Proportion of children with dental sealants.
- Proportion of children with a dental visit in the last one-year.
- Proportion of children who have received fluoride tablets on a regular basis.
- Proportion of children with dental insurance.

Dental screenings were conducted in schools to obtain data related to dental caries and sealant use. A questionnaire was used to gather data on last dental visit, fluoride tablet use and dental insurance.

According to this survey, the prevalence of dental caries was 54.1%. The estimated percent of children with untreated caries was 33.1%. The Healthy People 2010 (HP 2010) target for caries experience and untreated caries for 6-8 year old is 42% and 20% respectively. Consistently, both caries experience and untreated caries were more prevalent in the low-income group (Figure 2).

Figure 2. Prevalence of dental caries and untreated caries (percent) in 3rd grade children. New York State Oral Health Surveillance System, 2002-2004.



Note: Low-income children were those who reported participating in the free or reduced school lunch program.

PROTECTIVE FACTORS AND RISK FACTORS

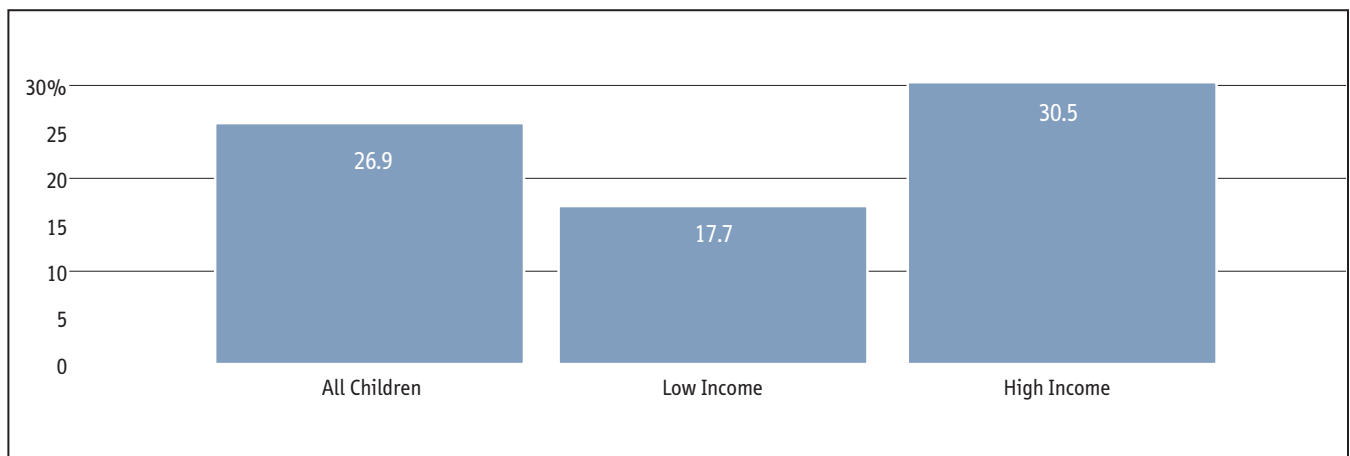
Water Fluoridation

More than 12 million New Yorkers receive fluoridated water. The percent of the population on community water supplies receiving fluoridated water is approximately 70%, compared to the Healthy People 2010 Objective of 75%. The percent of the population on fluoridation was 100% in New York City and 46% in upstate New York. Counties with large proportions of the population not covered by fluoridation are Nassau, Suffolk, Rockland, Ulster, Albany, Oneida and Tompkins.

Fluoride Use

Fluoride tablets are prescribed to children living in areas where water is not fluoridated in upstate New York State communities. New York City children receive fluoride from water. About 30.5% and 17.7% of high income and low-income children respectively in upstate New York reported the use of fluoride tablets on a regular basis (Figure 3).

Figure 3. Regular use of fluoride tablets in 3rd grade children in upstate New York State. New York State Oral Health Surveillance System, 2002-2004.

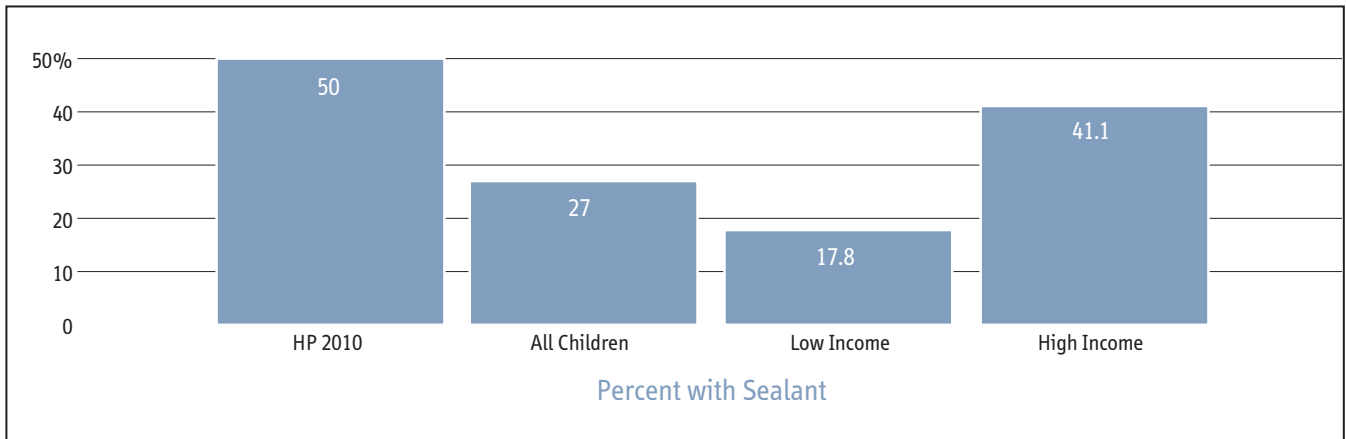


DENTAL SEALANTS

Dental sealants are protective coatings applied on the chewing surfaces of teeth to prevent caries. The presence of sealants is an indicator of access to preventive services in children. The Healthy People 2010 goal is that at least 50 percent of children should have dental sealants.

Compared to this, the estimated percent of children with a dental sealant on a permanent molar in New York State was 17.8% and 41.1% in the low and high-income groups respectively. Again, a lower proportion of low-income children had dental sealants compared to that of high-income children (Figure 4).

FigD



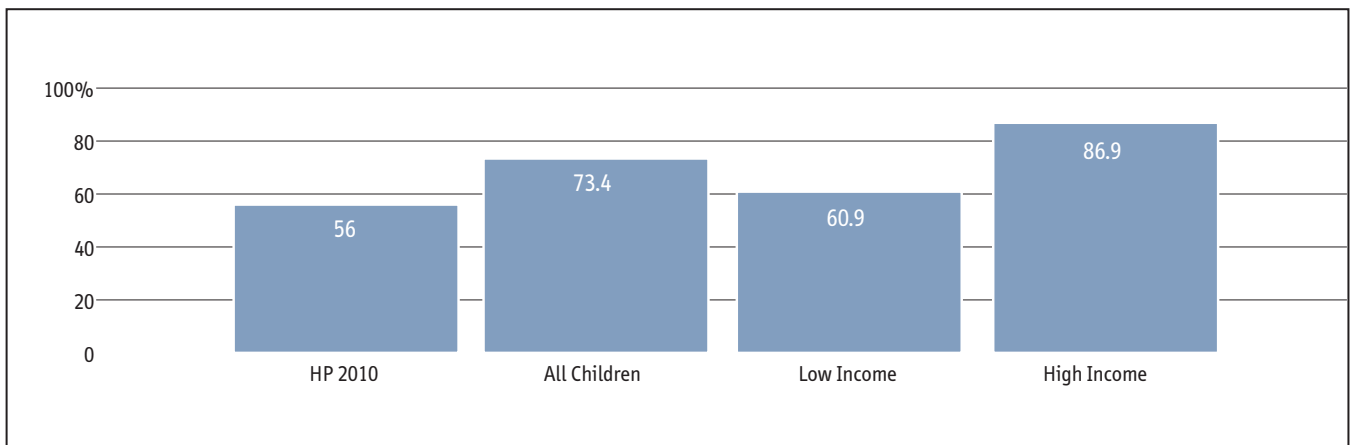
Insurance Coverage

Approximately, 80.1% of children reportedly had some type of dental insurance coverage. There was no noticeable difference in the insurance coverage between high and low-income groups. In general, self-reported insurance data tends to overestimate insurance coverage.

Dental Visit in the Past Year

The percent of children with a dental visit in the past year was 73.4%. While there was no noticeable difference in the insurance coverage between high and low income groups, a lower proportion of low income children had visited a dentist in the last one-year (60.9% vs. 86.9%). (Figure 5)

Figure 5. Dental visit in the past year in 3rd grade children. New York State Oral Health Surveillance System, 2002-2004.



Use of Dental Services in Medicaid and Child Health Plus Programs

The American Dental Association, the American Academy of Pediatric Dentistry and the American Academy of Pediatrics recommend at least an annual dental examination beginning as early as the eruption of first tooth or no later than 12 months of age. Early and periodic screening, diagnostic and treatment (EPSDT) services are required services under the Medicaid program for most individuals under age 21. According to the Centers for Medicare & Medicaid Services (CMS), approximately 24.5% of children under age 21 enrolled in the EPSDT program in Year 2003 received an annual dental visit.

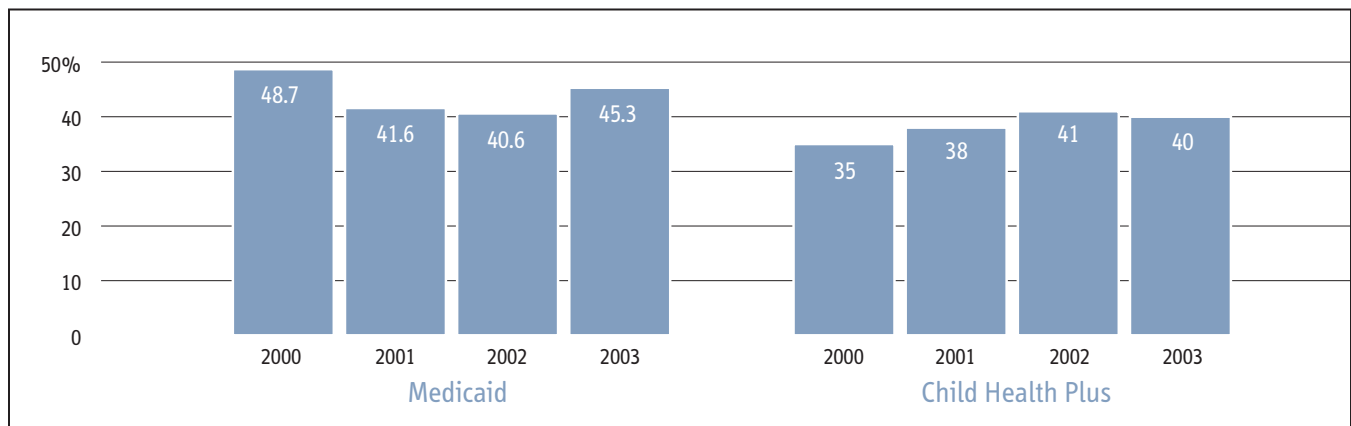
A Healthy People 2010 goal is to increase the proportion of children and adults who use the oral health care system to 56%. Because children younger than 4 years of age and those without continuous enrollment have fewer opportunities to use dental services, it is customary to assess dental visits among 4 to 21 year old continuous enrollees. For those New York State children aged 4 to 21, who are continuously enrolled for a year in 2003, 45% in Medicaid and 40% in Child Health Plus program visited a dentist (Figure 6).

Table 1. Enrolled children under age 21 receiving an annual Medicaid dental visit, CMS 416 report

CMS 416 lines 12a/ and 1	2000	2001	2002	2003
Number with any dental visit	374,821	390,495	448,667	492,819
Number enrolled	1,496,546	1,627,851	1,770,911	2,015,608
Percent with a visit	25.0	24.0	25.3	24.5

Note: This data represents all children from birth to age 21 who are enrolled in the Medicaid program

FiD 2000-2003.



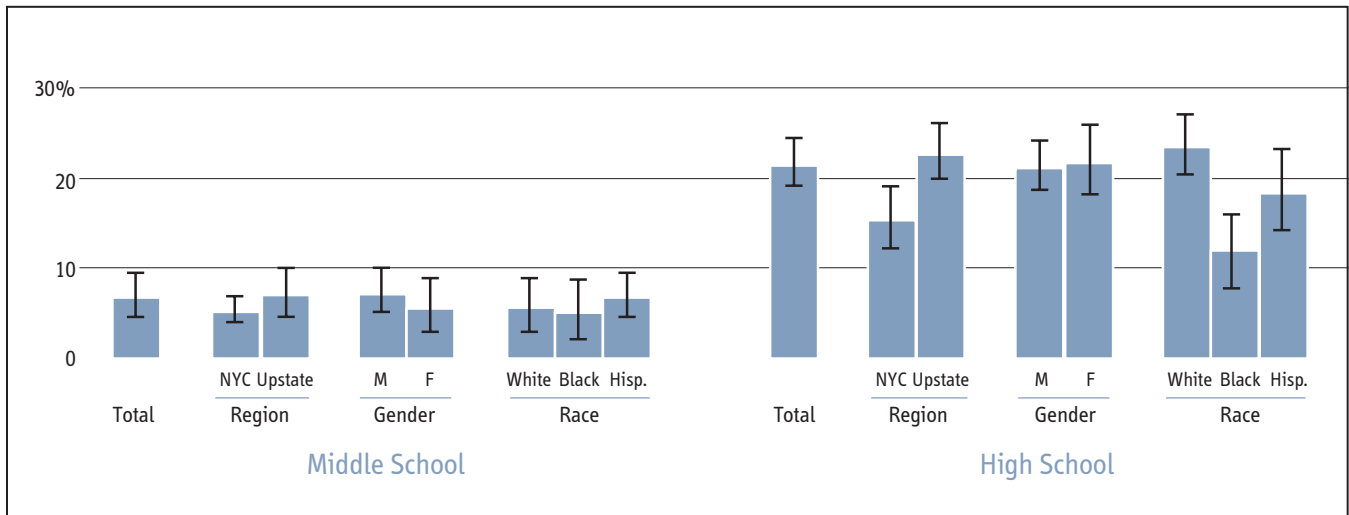
Note: Medicaid data children enrolled in enrolled children who received their dental services through fee for service Medicaid. Actual percent of the specified population receiving dental services in any given period will vary depending on definition of eligibility during the periods

Tobacco Use in Children

According to the 2002 Youth Tobacco Survey (19), the current use of cigarettes among middle school and high school students is approximately 6.7% and 21% respectively.

Among high school students, the current use of cigarettes for white, black and Hispanic students was 23.3%, 11.9% and 18.3% respectively (Figure 7).

Figure 7. Current use of cigarettes by grade, region, gender, race (New York State Youth Tobacco Survey, 2002).



PREVALENCE OF DENTAL DISEASES/CONDITIONS IN ADULTS

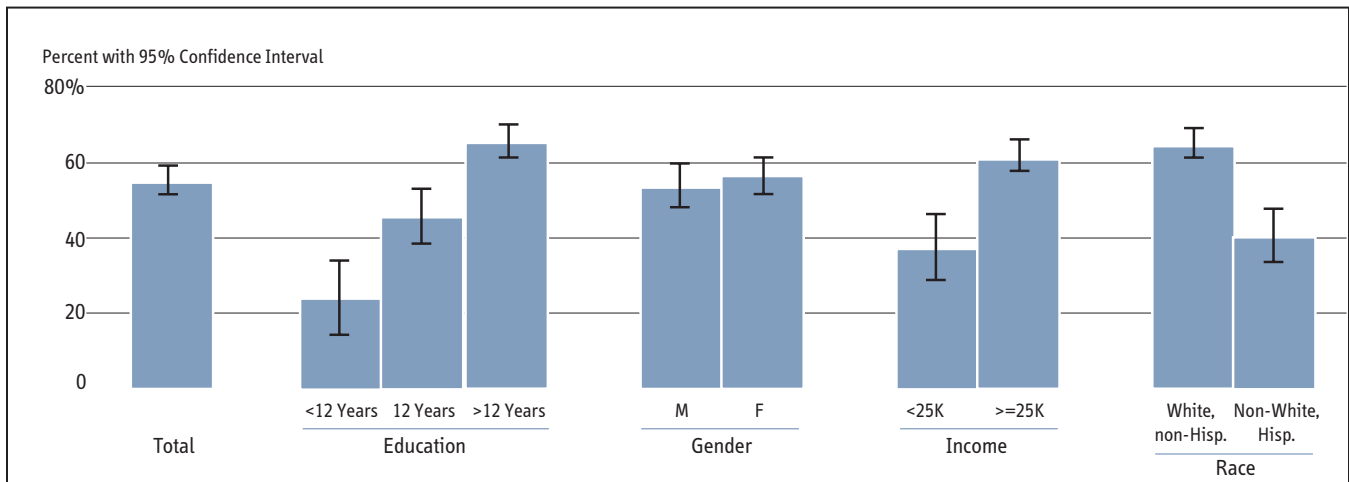
The Behavioral Risk Factor Surveillance System (BRFSS) is the main source of data on the prevalence of dental diseases and risk factors in adults. It is an ongoing statewide telephone-based surveillance system designed by the Centers for Disease Control and Prevention (CDC). BRFSS monitors modifiable risk behaviors and other factors contributing to the leading causes of morbidity and mortality in the population. New York State's BRFSS sample represents the non-institutionalized adult household population, aged 18 years and older. The oral health module includes questions on tooth loss and use of dental services. The data on oral cancer are available through the Cancer Registry. In addition, Pregnancy Risk Assessment and Monitoring System provides data on risk factors in pregnant women.

Tooth Loss in Adults

Dental caries (tooth decay) and advanced periodontal (gum) diseases ultimately lead to loss of some or all teeth, if not treated in a timely manner (20;21). Tooth loss is indicative of the importance given to oral health, availability and accessibility of dental care and the prevailing standard of care. Loss of all natural permanent teeth not only considerably reduces daily functioning in terms of chewing and speaking but also reduces self-esteem and quality of life.

One of the objectives in Healthy People 2010 is to increase the proportion of adults ages 35 to 44 who have never had a permanent tooth extracted because of dental caries or periodontal disease to 42% (16). Figure 8 shows the percent of New York adults age 35 to 44 who have never had a permanent tooth extracted because of dental caries or periodontal disease.

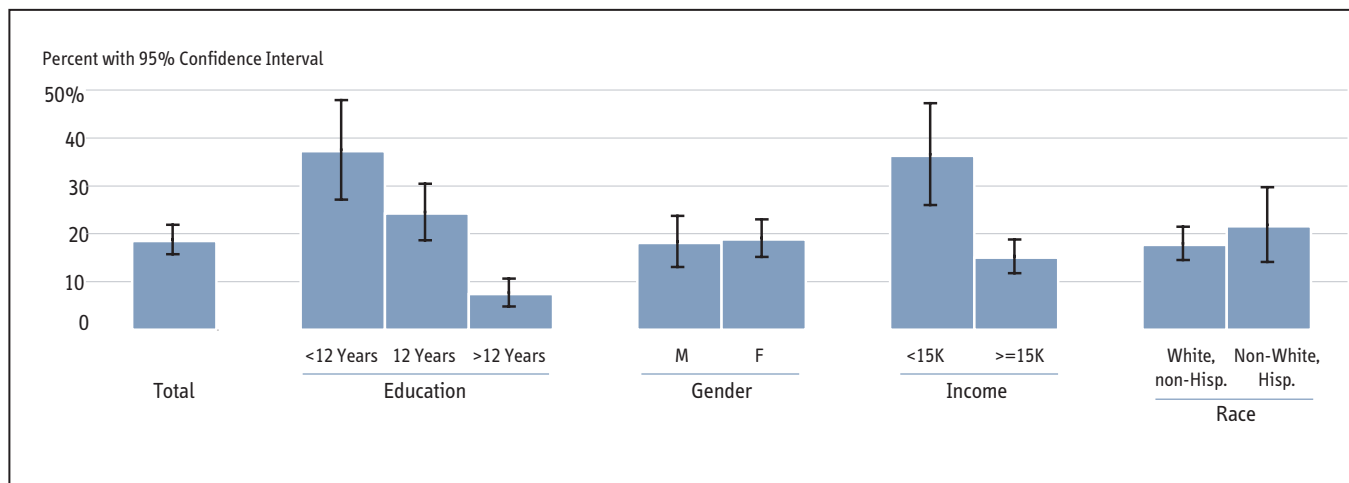
Figure 8. Percent of persons (aged 35 to 44) who have never had a permanent tooth extracted due to dental caries or periodontal disease. New York State BRFSS, 2002.



Loss of all teeth is called edentulism. Another Healthy People 2010 Objective is to reduce the proportion of older adults who have had all their natural teeth extracted to 20%. According to the Behavioral Risk Factor Surveillance

System, the percent of adults 65 years and older that had lost all their natural teeth was lower at each successive educational and income level (Figure 9).

Figure 9. Percent of persons (ages 65 and older) who have lost all natural permanent teeth. New York State BRFSS, 2002.



Oral and Pharyngeal Cancers

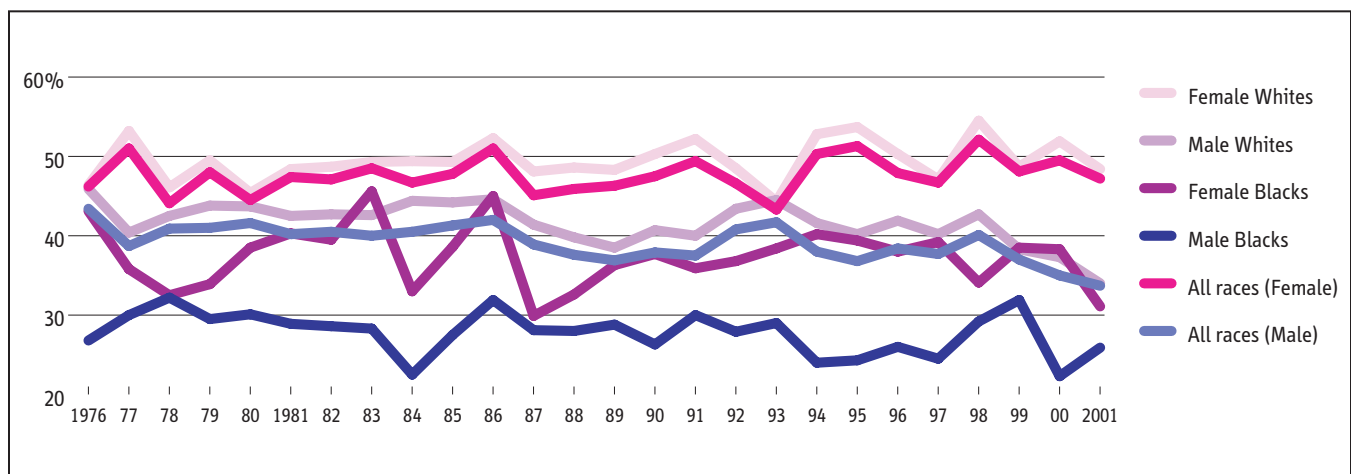
Data from the New York State Cancer Registry show an annual average of 1,976 new cases and 506 deaths of oral and pharyngeal cancer for the period 1997-2001. An average of 1,290 new cases occurred in males and 686 in females. These oral and pharyngeal cancers account for approximately 3% of all malignancies in men and 1.5% in women. The age adjusted incidence rates per 100,000 for males and females are 15.4 and 6.4, respectively, with corresponding age adjusted mortality rates of 4.1 and 1.5 in the same period (22).

Trends in incidence and mortality for oral and pharyngeal cancer in New York State show that both the incidence and

mortality have declined in the last 2 decades, particularly among black males. However, black males still have the highest incidence and mortality rates.

Despite advances in surgery, radiation and chemotherapy, the five-year survival rate for oral cancer has not improved significantly over the past several decades. The percent of cases diagnosed in early stage was 33.7 and 47.2 among males and females, respectively. African American's higher mortality can be partly attributed to the fact that their cancers are more often discovered at an advanced stage. Among black males, only 25.9% were diagnosed in an early stage (Figure 10).

Figure 10. Oral cancer cases diagnosed at early stage by gender, race and year. New York State Cancer Registry, 1976-2001.



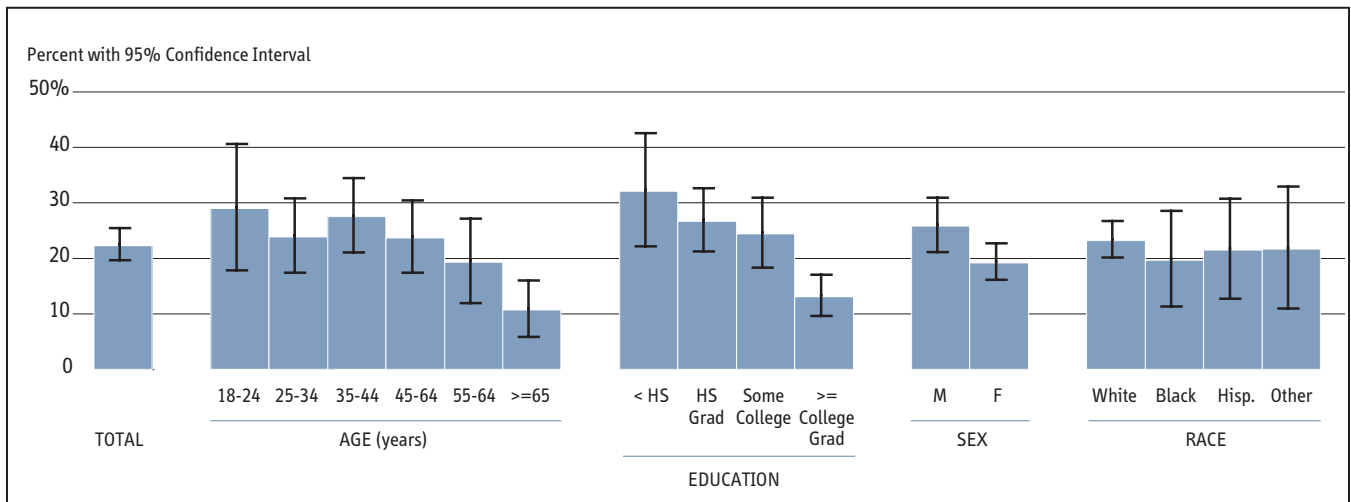
RISK FACTORS AND PROTECTIVE FACTORS

Tobacco and Alcohol Use

Tobacco use is one of the most common risk factors for oral cancer and other conditions in the mouth such as oral mucosal lesions, periodontal disease, gingival recession, and caries. The magnitude of the effect of tobacco on the occurrence of oral diseases is high, with users having many times the risk of non-users (9). Alcohol and tobacco use are the major risk factors for oral cancer, accounting for 75%

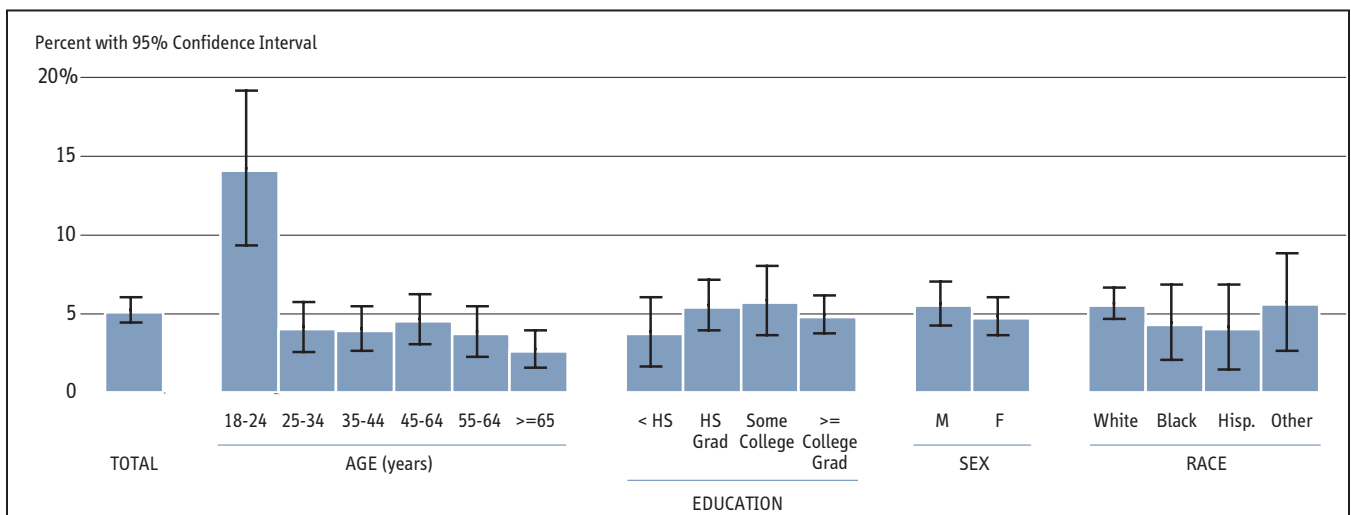
of all oral cancers (9). According to the 2002 BRFSS, the statewide current use of tobacco is about 22.3%, which is similar to the nationwide usage of 23%. Tobacco use was highest among the 18 to 24 age group at 29.0% and least in the 65 + age group at 10.7%. Alcohol use in New York State is about 5%. It is highest in the 18 to 24 age group (14.1 %).

Figure 11. Tobacco use in adults in New York State. BRFSS, 2002.



Note: Tobacco use is defined as those who have smoked more than 100 cigarettes in their lifetime and are current smokers.

Figure 12. Chronic drinking behavior in New York State (BRFSS, 2002).



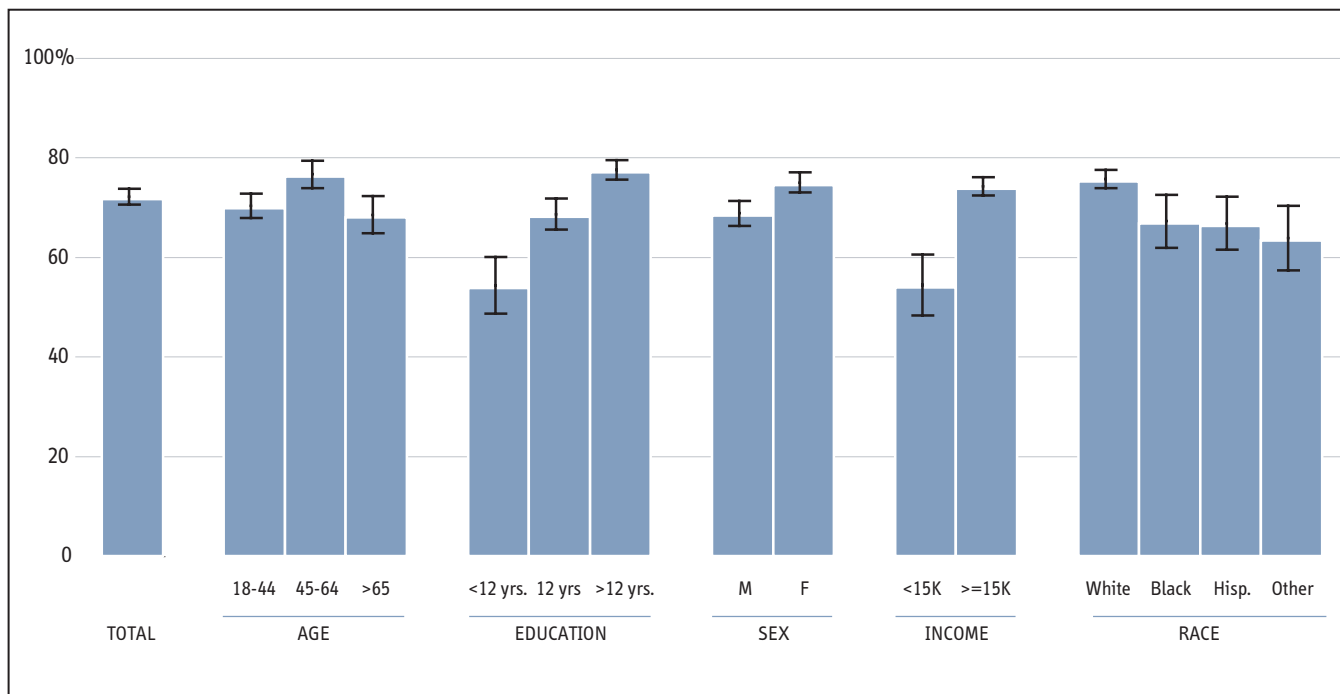
Note: Chronic Drinking Behavior is defined as having greater than 2 drinks per day for men, and 1 drink per day for women.

Dental Visit

An annual dental visit presents an opportunity for providing preventive services as well as early detection of oral lesions. According to the 2002 BRFSS data an estimated 71.7% of New Yorkers reported visiting a dentist or a dental clinic within the past year. This compares

favorably with the Healthy People 2010 Objective of increasing the proportion who uses the oral health care system each year to 56%. Low-income population visited a dentist less frequently compared to those with higher incomes (54 % vs. 73.8%).

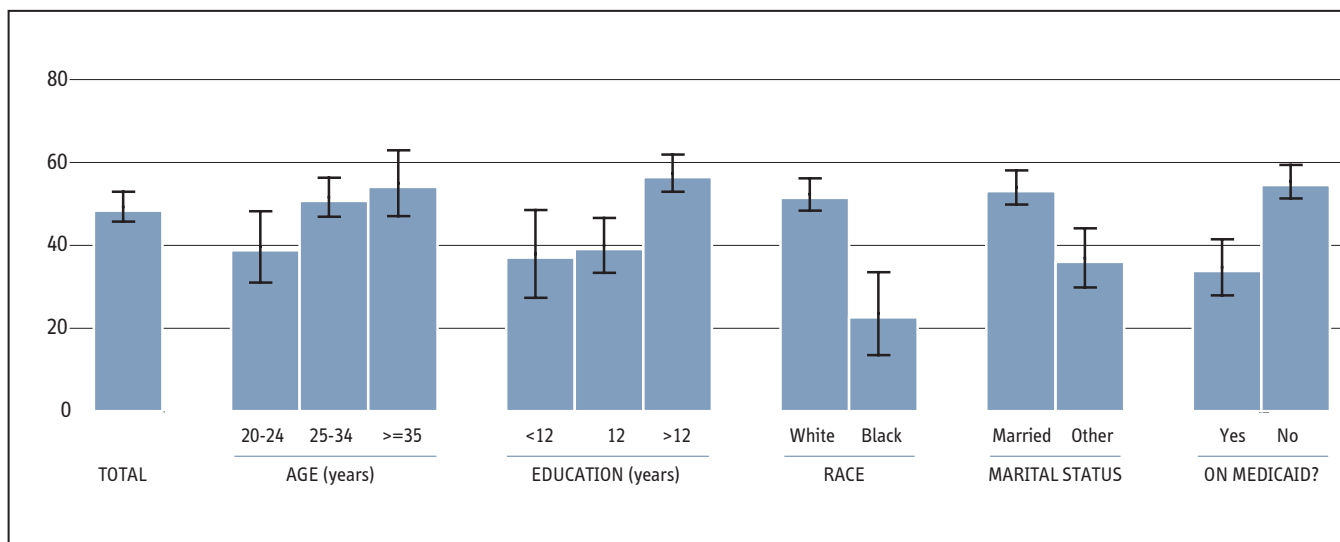
Figure 13. Percent of people who visited a dentist or a dental clinic within the past year. BRFSS, 2002.



Evidence is emerging to show that poor oral health may be associated with adverse pregnancy outcomes (1;23). Several studies have shown the associations between periodontal disease and increased risk for preterm labor and low birth weight babies. Visits to a dentist during

pregnancy are recommended to avoid the consequences of poor oral health. The use of dental services during pregnancy, as estimated from the Pregnancy Risk Assessment and Monitoring System (PRAMS) was 51.4% and 22.7% among white and black women, respectively.

Figure 14. Dental visit during pregnancy by race, age, years of education, marital status and participation in Medicaid. PRAMS 2002.



DENTAL WORKFORCE

In 2004, the number of registered dentists in New York State was 15,037. While the population to dentist ratio is favorable when compared to the national data, the distribution is geographically uneven. The concentration of registered dentists was highest in New York City followed by the neighboring counties of Suffolk, Nassau, Westchester and Rockland. The number of registered dental hygienists in New York State was 8,239. The concentration of hygienists was highest in the rest of the State followed by the counties of Suffolk, Nassau, Westchester and Rockland. While there were relatively more dentists in New York City, there was only one dental hygienist per 5,627 residents (Table 2).

While the registration data is useful to understand the relative distribution of dentists, it should be noted that not

all registered dentists and dental hygienists practice in New York State. According to the New York State Labor Department, the number of dentists working in New York State in 2000 was 11,350. The number of practicing dentists needed in New York State is projected to increase from 11,350 to 11,970 between 2000 and 2010 with nearly 320 annual openings due to both new jobs and replacements (24). This projection shows that a supply of approximately 320 new dentists are needed annually to meet the demand over the next ten years. According to the New York State Education Department's licensure data, an average of 587 new dentists register annually in New York State. However, it is not clear how many of these dentists actually practice in New York State.

Table 2. Number and distribution of registered dentists and dental hygienists by selected counties. New York State Education Department Licensure Data, 2004.

Region	Population	Number of Registered Dentists	Number of Registered Dental Hygienists	Population per Dentist	Population per Hygienist
New York City	8,085,742	6,167	1,437	1,311	5,627
Suffolk, Nassau, Westchester and Rockland	4,040,791	4,753	2,084	850	1,939
Rest of State	7,063,582	4,117	4,718	1,716	1,497
New York State	19,190,115	15,037	8,239	1,276	2,329

In-State Enrollees in New York State Dental Schools

In 2002, the number of first year enrollees in New York State dental schools was 428 of which 257 students were from New York State (Figure 15) (25) . There were another 67 New York State residents enrolled in out-of-state dental schools. Of the 428 reported enrollees in New York State dental schools, only 22 (5%) students reported being African American or Hispanic (Figure 16).

Distribution of General Dental Practitioners by Age in the US

According to the American Dental Association’s 2002 Survey of Dental Practice, the average age of a dentist is 51.1 years (26). In the US, the dentist to population ratio expressed as the number of dentists per 100,000 is expected to decline from 58.3 in 2000 to 53.7 in 2020. In part, this declining trend reflects the retirement of older dentists with insufficient numbers of new dentists replacing them (1;26). The distribution of dentists by age is shown in Figure 17.

Figure 15. In-state First Year Enrollees in New York State Dental Schools.

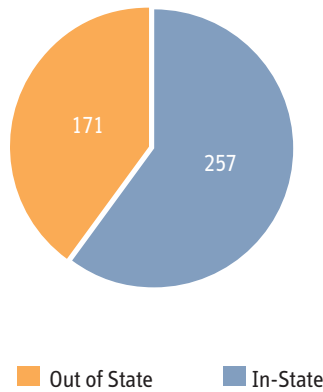


Figure 16. Number of First Year Enrollees in New York State Dental Schools by Race/Ethnicity.

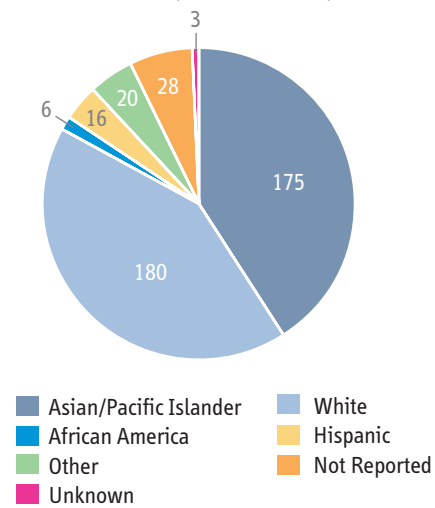
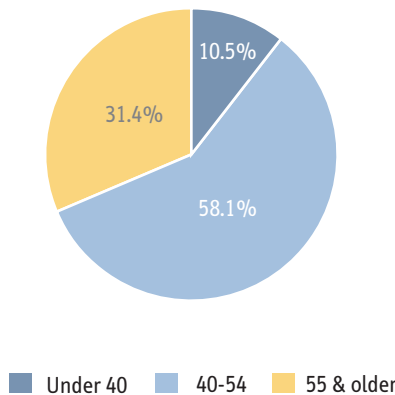


Figure 17. Distribution of dentists in the United States by age. American Dental Association, 2002.



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NEW YORK STATE DEPARTMENT OF HEALTH

The Department of Health implements and monitors statewide dental health programs to prevent, control and reduce dental diseases and other oral health conditions and to promote healthy behaviors. In addition to maintaining a focus on children, programs promote dental health among adult populations.

Bureau of Dental Health Programs

Preventive Dentistry Program

This program addresses the problem of excessive dental disease among children who reside in communities with a high proportion of persons living below 185% of the federal poverty level. The application of dental sealants, an extremely effective caries-prevention agent, in combination with a program of dental screening, referral and other preventive services, significantly improves the dental health of children in underserved communities. Twenty-five contracts have been established with local health units, health centers, hospitals and dental schools to provide primary preventive services. The activities include:

- Partnerships to promote fluoridation, dental sealants and other disease prevention interventions.
- School-based dental sealant programs.
- School-linked dental programs.
- Improving oral health of pregnant women and mothers.
- Early childhood caries prevention.
- Bellevue Hospital's program for children with impaired hearing.

Community Water Fluoridation

The Bureau of Dental Health in collaboration with the Bureau of Water Supply Protection monitors the quality of fluoridation services statewide. In addition, technical assistance is provided to communities interested in implementing water fluoridation. The Department participates in the Centers for Disease Control's Water

Fluoridation Reporting System. Information on all public water systems that fluoridate is maintained.

School-Based Supplemental Fluoride Program

The Fluoride Supplement Program consists of a school-based Fluoride Mouth Rinse Program, which serves elementary school children. It also includes a preschool fluoride tablet program that serves three to five-year-olds in Head Start centers and migrant childcare centers in fluoride-deficient areas. More than 115,000 children participate in these programs annually.

Physically Handicapped Children's Program – Dental Rehabilitation Program

The Physically Handicapped Children's Program provides medical, educational and financial assistance to children under the age of 21 who have congenital or acquired severe physically handicapping conditions. The Dental Rehabilitation Program provides financial assistance to needy children who have severe handicapping malocclusions. The program is administered at the county level. Over 7,000 children annually receive services in upstate counties and additional 12,000 children participate in New York City.



Innovative Dental Services Grant

The New York State Department of Health supports seven programs to test the effectiveness and feasibility of innovative interventions for addressing oral health problems. These include mobile and portable systems, fixed facilities and case management models. These programs use collaborative approaches to improve community-based health promotion and disease prevention programs as well as professional services to ensure continued progress in oral health. The grant supports:

- Establishment or expansion of innovative service delivery models for providing primary preventive care and dental care to underserved populations in geographically isolated and health manpower shortage areas;
- Development of case management models to address the needs of difficult to reach populations; and
- Development of partnerships and local coalitions to support and sustain program activities.

In addition, the Department has established a center at the Rochester Primary Care Network for providing technical assistance to communities interested in developing innovative service delivery models and improve the quality of existing programs. Approximately \$900,000 is committed to this initiative.

Dental Public Health Residency Program

The Dental Public Health Residency Program is designed for dentists planning careers in dental public health. It prepares residents via didactic instruction and practical experience in dental public health practice. The Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Post Secondary Accreditation and the United States Department of Education, has accredited the residency program. The program is affiliated with the School of Public Health, State University at New York, Albany, Montefiore Medical Center, Bronx and University of Rochester's Eastman Department of Dentistry. Residents are also trained at New York University College of Dentistry.

Oral Health Initiative

The Centers for Disease Control and Prevention (CDC) has awarded the Department a seven-year grant to support oral disease prevention programs. Under this initiative, the Bureau of Dental Health is building linkages with county health departments and other coalitions to improve the oral health of New Yorkers. The activities include:

- implementation of a surveillance program;
- development of a state oral health plan;
- support for program management;
- development of a statewide oral health coalition;
- partnerships to promote oral health initiatives; and
- dissemination of information and development of training programs.

New York State Oral Cancer Control Partnership

This grant from the National Institute of Dental and Craniofacial Research is to be used to design and implement future interventions to prevent and reduce oral cancer mortality and morbidity. Several studies are being conducted to assess disease burden as well as knowledge, attitude and behavior, and practice patterns of health care providers.

HRSA Oral Health Collaborative Systems Grant: School-based Dental Health Centers

The Oral Health Collaborative Systems grant supports school-based primary and preventive care services. A school-based health center, as defined by the Department of Health, is a delivery system of primary and preventive health located in a school and provided by an Article 28 hospital, diagnostic and treatment center, or community health center. Providers interested in implementing preventive services or primary care services in schools are required to apply for program authorization.

APPENDIX A

Healthy People 2010 Oral Health Objectives

- 21-1. Reduce the proportion of children and adolescents who have dental caries experience in their primary or permanent teeth.
 - 21-1a. Reduce the proportion of young children (ages 2-4) with dental caries experience in their primary teeth. **Target - 11%**
 - 21-1b. Reduce the proportion of children (ages 6-8) with dental caries experience in their primary and permanent teeth. **Target - 42%**
 - 21-1c. Reduce the proportion of adolescents (age 15) with dental caries experience in their permanent teeth. **Target - 51%**
- 21-2. Reduce the proportion of children, adolescents, and adults with untreated dental decay.
 - 21-2a. Reduce the proportion of young children (ages 2-4) with untreated dental decay in their primary teeth. **Target - 9%**
 - 21-2b. Reduce the proportion of children (ages 6-8) with untreated dental decay in primary and permanent teeth. **Target - 21%**
 - 21-2c. Reduce the proportion of adolescents (age 15) with untreated dental decay in their permanent teeth. **Target - 15%**
 - 21-2d. Reduce the proportion of adults with untreated dental decay. **Target - 15%**
- 21-3. Increase the proportion of adults who have never had a permanent tooth extracted because of dental caries or periodontal disease. **Target - 42%**
- 21-4. Reduce the proportion of older adults who have had all their natural teeth extracted. **Target - 20%**
- 21-5. Reduce destructive periodontal diseases (ages 35-44). **Target - 14%**
- 21-6. Increase the proportion of oral and pharyngeal cancers detected at the earliest stage. **Target - 50%**
- 21-7. Increase the proportion of adults who, in the past 12 months, report having had an examination to detect oral and pharyngeal cancers. **Target - 20%**
- 21-8. Increase the proportion of children who have received dental sealants on their molar teeth.
 - 21-8a. Children aged 8 years. **Target - 50%**
 - 21-8b. Adolescents aged 14 years. **Target - 50%**
- 21-9. Increase the proportion of the U.S. population served by community water systems with optimally fluoridated water. **Target - 75%**
- 21-10. Increase the proportion of children and adults who use the oral health care system each year. **Target - 56%**
- 21-11. Increase the proportion of long-term care residents who use the oral health care system each year. **Target - 25%**
- 21-12. Increase the proportion of low-income children and adolescents who received any preventive dental service during the past year. **Target - 57%**
- 21-13. (Developmental) Increase the proportion of school-based health centers with an oral health component.
- 21-14. Increase the proportion of local health departments and community-based health centers, including community, migrant, and homeless health centers that have an oral health component. **Target - 75%**
- 21-15. Increase the number of States and the District of Columbia that have a system for recording and referring infants and children with cleft lips, cleft palates, and other craniofacial anomalies to cranio-facial anomaly rehabilitative teams. **Target - 100%**
- 21-16. Increase the number of States and the District of Columbia that have an oral and craniofacial health surveillance system. **Target - 100%**
- 21-17. (Developmental) Increase the number of Tribal, State (including the District of Columbia), and local health agencies that serve jurisdictions of 250,000 or more persons that have in place an effective public dental health program directed by a dental professional with public health training. **Target - 100%**

APPENDIX A (continued)

Healthy People 2010 Oral Health Objectives

Related Objectives From Other Focus Areas

- | | |
|---|--|
| 1. Access to Quality Health Services | 15. Injury and Violence Prevention |
| 2. Arthritis, Osteoporosis, and Chronic Back Conditions | 16. Maternal, Infant, and Child Health |
| 3. Cancer | 17. Medical Product Safety |
| 5. Diabetes | 18. Mental Health and Mental Disorders |
| 6. Disability and Secondary Conditions | 19. Nutrition and Overweight |
| 7. Educational and Community-Based Programs | 20. Occupational Safety and Health |
| 8. Environmental Health | 22. Physical Activity and Fitness |
| 11. Health Communication | 23. Public Health Infrastructure |
| 12. Heart Disease and Stroke | 25. Sexually Transmitted Diseases |
| 14. Immunization and Infectious Diseases | 26. Substance Abuse |
| | 27. Tobacco Use |

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