

PRIORITY: DENTAL HEALTH (FAMILY HEALTH)

According to *Healthy People 2010*,

Millions of people in the United States experience dental caries, periodontal diseases, and cleft lip and cleft palate, resulting in needless pain and suffering; difficulty in speaking, chewing, and swallowing; increased costs of care; loss of self-esteem; decreased economic productivity through lost work and school days; and, in extreme cases, death. Millions of people in the U.S. also are at high risk for oral health problems because of underlying medical or handicapping conditions, ranging from very rare genetic diseases to more common chronic diseases such as arthritis and diabetes. Oral and facial pain affects a substantial proportion of the general population.

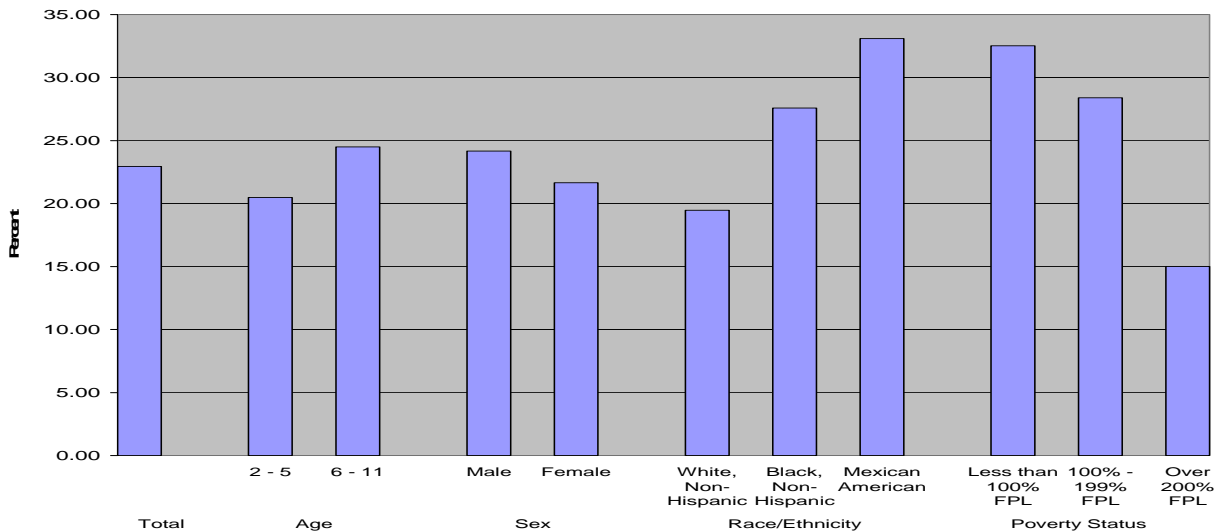
Issues and Trends

As the *Healthy People 2010* document indicates,

Dental caries is the single most common chronic disease of childhood, occurring five to eight times as frequently as asthma, the second most common chronic disease in children. Despite the reduction in cases of caries in recent years, more than half of all children have caries by the second grade, and, by the time students finish high school, about 80 percent have caries. Unless arrested early, caries is irreversible. Early childhood caries (ECC) affects the primary teeth of infants and young children ages 1 to 6 years.

The *2010 Initiative* also reports that since the early 1970s, the cases of dental caries in permanent teeth have declined dramatically among school-age children. This decline is the result of various preventive regimens such as community water fluoridation and increased use of toothpastes and rinses that contain fluoride. Dental caries, however, remains a significant problem in some populations, particularly certain racial and ethnic groups and poor children. National data indicate that 80 percent of dental caries in the permanent teeth found in children is concentrated in 25 percent of the child and adolescent population. Increased use of dental sealants, tooth brushing with fluoridated toothpaste, community water fluoridation, and sound dietary practices are needed to reduce tooth decay. Figure 1 shows the percentages of U.S. children with untreated dental cavities by age group, sex, race/ethnicity and Federal Poverty Level status from 1999 to 2004.

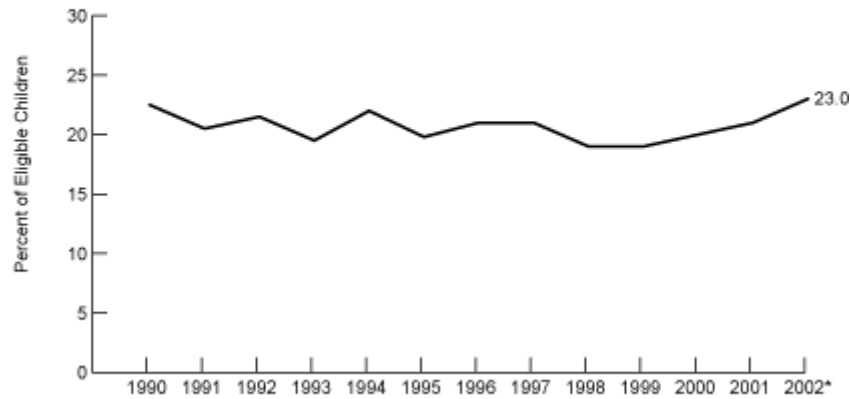
Figure 1. Percentage of U.S. Children Age 2-11 Who Have Dental Caries, by Age Group, Sex, Race/Ethnicity, and Federal Poverty Level (FPL) Status, 1999-2004.



Source: CDC National Center for Health Statistics, *Trends in Oral Health Status: United States, 1988-1994 and 1994-2004*. (ADAPTED) (http://www.cdc.gov/nchs/data/series/sr_11/sr11_248.pdf)

In Federal fiscal year 2002, only 23% of U.S. children eligible for dental services under the Medicaid Early and Preventive Screening, Diagnosis, and Treatment (EPSDT) program received a preventive dental service (see Figure 2).

Figure 2: Percentage of Eligible Children Receiving an EPSDT Preventive Dental Service: 1990-2002



*Includes data from 49 States.

Data Source: U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau, *Child Health USA 2005*. (http://mchb.hrsa.gov/mchirc/chusa_05/healthfinance/graphs/0402tdcL.htm)

Healthy People 2010 and Dental Health

The following chart presents the *Healthy People 2010* targets for the objectives pertinent to ensuring dental health, along with baseline data for the year(s) indicated. This chapter examines Chautauqua County data for the Priority: *Dental Health* indicators listed in **bold type** and selected other indicators.

Healthy People 2010 Baselines and Targets for Priority: Dental Health

Objective		Baseline*	2010 Target
		(1988-94)	
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 with dental caries experience in their teeth.	18%	11%
21.1c	Reduce the proportion of adolescents with dental caries experienced in their permanent teeth.	31% (1988-1994)	51%
21.2	Reduce the proportion of children, adolescents, and adults with untreated dental decay.	1988-1994	2010
21.2a	Reduce the proportion of young children with untreated dental decay in their primary teeth.	16%	9%
21.2b	Reduce the proportion of children with untreated dental decay in their primary and permanent teeth.	29%	21%
21.2c	Reduce the proportion of adolescents with untreated dental decay in their permanent teeth.	20%	15%
21.2d	Reduce the proportion adults with untreated dental decay in their permanent teeth.	27%	15%
21.3	Increase the proportion of adults who have never had a permanent tooth extracted because of dental crisis or periodontal disease.	31%	42%
21.4	Reduce the proportion of older adults who have all their natural teeth extracted.	26% (1997)	20%
21.5	Reduce periodontal disease	(1988-1994)	2010

21.5a	Gingivitis	48%	41%
21.5b	Deconstructive periodontal disease	22%	14%
21.6	Increase the proportion of adults and pharyngeal cancers detected at the earliest stages.	35% (1990-1995)	50%
21.7	Increase the proportion of adults who, in the past 12 months, report having an examination to detect oral and pharyngeal cancers.	13% (1998)	20%
21.8	Increase the proportion of children who have received dental sealants their molar teeth.	1988-1994	2010
21.8a	Children aged 8 years	23	50
21.8b	Adolescents aged 14 years	15	50
21.9	Increase the proportion of the U.S. population served by community water systems with optimally fluorinated water.	62% (1992)	75%
21.10	Increase the proportion of children and adults who use the oral health care system each year.	44% (1996)	56%
21.11	Increase the proportion of long-term care residents who use the oral health care system each year.	19% (1997)	25%
21.12	Increase the proportion of low-income children and adolescents who received any preventive dental service during the past year.	20% (1996)	57%
21.13	(developmental) Increase the proportion of school based health centers with a oral health component.		
21.14	Increase the proportion of local health departments and community-based health centers, including community, migrants, and homeless health center that have an oral health component.	34% (1997)	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 craniofacial anomaly rehabilitative teams.	23 states (1997)	All states
21.16	Increase the number of States and the District of Columbia that have an oral and craniofacial health surveillance system		All States
21.17	(developmental) Increase the number of tribal and state(including the District of Columbia), and the local health agencies that serve jurisdictions of 250,000 or more persons that have in place an effective public dental health directed by a dental professional with public health training.		

* Except as noted.

A. Health Data

1. Oral Health of Young Children

Table 1 shows that 53.9% of all New York State third grade children examined in 2003 had dental caries, and that caries for 29% of all children were untreated. A greater percentage of children from low income families had caries and untreated caries than children from high income families. Only about 38% of children had dental sealants (29.3% of low-SES children and 42.6% high-SES children).

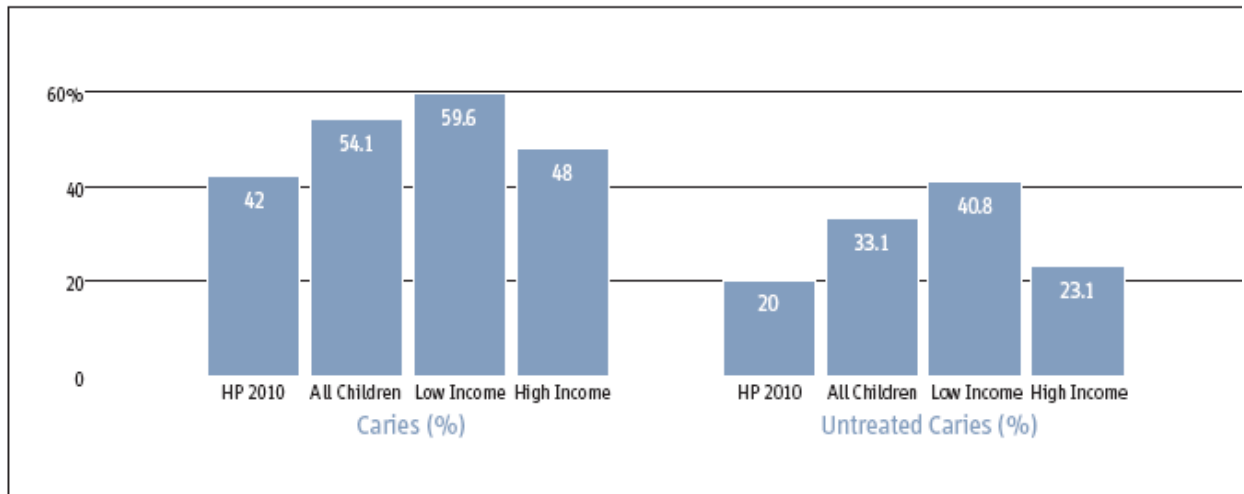
Table 1. Estimated Percentage of Third Grade Children with Caries and Dental Sealants in New York State, 2003.

Estimated Percentage of Third Grade Children with Caries Experience, Untreated Caries and Sealants				
<i>Source: New York State Oral Health Surveillance System 2003</i>				
	HP 2010 Objective	% of all children examined	% of Low SES Children	% of High SES Children
Caries Experience	42%	53.9%	66.1%	47.9%
Untreated Caries	20%	29.0%	42.0%	22.6%
One or More Dental Sealants in Place	50%	38.2%	29.3%	42.6%

Data Source: New York State Oral Health Surveillance System.
<http://www.health.state.ny.us/nysdoh/mchbg/2005application.pdf>

Figure 3 shows the prevalence of caries experienced by 3rd grade children, and the percentage of those with untreated caries in New York State for the years 2002-2004. The New York State Oral Health Surveillance System used participation in the free or reduced price lunch program as the basis for determining socioeconomic status. As might be expected, low income 3rd graders were more likely to experience caries and were also more likely to have untreated caries. As evident in the figure, the HP 2010 target has not been met.

Figure 3: Prevalence of dental caries and untreated caries (percent) in 3rd grade children, 2002-2004.



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

Data from: New York State Oral Health Plan, 2005. New York State Oral Health Surveillance System, 2002-2004.
http://www.nyhealth.gov/prevention/dental/docs/oral_health_plan.pdf

An indicator of service utilization is percentage of teeth filled, shown in Table 2 for western New York. In the later time period, fewer second-grade children in low-income communities had fillings than in the earlier period (17% in 1987-88 vs. 77% in 1979-80). For high-income second-graders, however, the percentage of fillings increased from 1979-80 to 1987-88 (50% to 72%, respectively).

For fifth graders, a much greater percentage in low-income families had fillings in 1987-88 than in 1979-80 (92% vs. 35%). For high-income community fifth-grade children, the percentages vary only slightly between the two time periods (82% and 83%).

**Table 2. Percentage of Teeth Filled in Western New York State HSA
by Grade Level and School Socioeconomic Status, 1979-80 and 1987-88.***

	Second Grade	Fifth Grade	Second Grade	Fifth Grade
Socioeconomic Status**	1979-80	1979-80	1987-88	1987-88
Low	77%	35%	17%	92%
Medium	38%	42%	50%	92%
High	50%	82%	72%	83%

* Percentage of teeth filled is an indication of service utilization. The obverse is an indication of unmet need.

** The SES score was calculated from data for the following three characteristics available on census tapes for each geographic area: number of median school years completed by persons 25 years old and over; number of percentage of unskilled workers among employed persons 16 years old and over. SES = sum of the three values.

Western New York HSA includes Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, and Wyoming Counties.

Source: *Maternal, Child and Adolescent Health Profile: New York State 1995*

<http://www.health.state.ny.us/nysdoh/mcahp/index.htm>.

Kumar et al. (2001) examined the oral health of a probability sample of second grade school children in New York State (excluding New York City). The data in Table 3 illustrate some of their findings. Compared to non-poor children, poor children were more likely to have caries, untreated caries and to have less dental coverage; and less likely to have a dental sealant on their teeth, use fluoride tablets if not in a fluoride water system, and have a regular dentist.

Table 3. Measures Indicating Use of Preventive Dental Services by Children Ages 7-9 in New York State (excluding New York City), 1997-99.

	Non-poor	Poor*
Have caries	36.6%	55.2%
Have untreated caries	28.6%	43.7%
Have a dentist	87%	63%
Presence of dental sealant	28.3%	21.1%
Regular use of fluoride tablets (non-fluoridated areas only)	52.4%	31.8%
No insurance	36.4%	44.0%
Basic insurance	38.3%	44.5%
Comprehensive insurance	25.4%	11.5%

Weighted probability data.

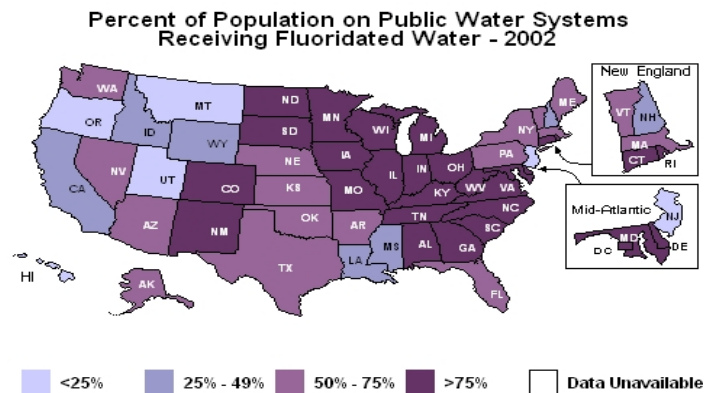
* Poor = children participating in free/reduced school lunch program or Medicaid.

Source: Kumar, J.V. et al. 2001. "Oral Health Status of Second Grade School Children in Upstate New York," *NYSDJ*, February.

2. Fluoridated Public Water Systems

Figure 3 provides a comparative view of the percentage of fluoridated public water systems for each state. In New York State, 72.9% of the water systems provide fluoride-treated water to residents in 2002. In many states in the Midwest, upper Midwest and Southeast, greater than 75% of systems provide fluoridated water to residents. The 2010 target is 75% of the U.S. population served with optimally fluoridated water.

Figure 3. Percentage of Residents on Fluoridated Public Water Systems, 2002.



Source: Water Fluoridation Reporting System 2002

<http://www2.cdc.gov/nohss/FluoridationMapV.asp?Year=2002>

B. Unmet Needs

Summary: Dental Health in Chautauqua County

If third grade children in Chautauqua County have similar dental problems as do children in western New York and New York State, over ½ of all children in the county have caries, and over 1/4 have caries that are untreated. Also, a greater percentage of children from low income families likely have caries and untreated caries than children from high income families, and fewer low-SES children likely have had dental sealants. In Western New York, the data show that low-SES children are less likely to have dental coverage, to use fluoride tablets if not in a fluoride water system, and to have a regular dentist than high-SES children. A majority of public water systems in New York State (72.9%) provide fluoride-treated water to residents; the 2010 target for the U.S. is 75% with optimally fluoridated water.

Healthy People 2010

Healthy People 2010 calls for

...half of all U.S. children to have dental sealants by 2010, but currently less than 25% of schoolchildren do. Children in some racial and ethnic groups are less likely than others to have sealants. For example, only 10% of Mexican American 8-year-olds have sealants on their teeth. CDC researchers evaluated several strategies and found that delivering sealants to all children attending low-income schools was the most cost-effective strategy for reducing disparities in sealant use. By offering school-based or school-associated sealant programs, some communities have already reached the *Healthy People 2010* objective for dental sealants. In addition, the Task Force on Community Preventive Services strongly recommends school-based or school-linked sealant programs as an effective way to prevent and control cavities.

The *Healthy People 2010* Initiative also states that

Many children and other persons in the U.S. do not receive essential dental services. Barriers to care include cost; lack of dental insurance, public programs, or providers from underserved racial and ethnic groups; and fear of dental visits. Oral health literacy among children and all groups is necessary to promote oral health and prevent oral diseases. Oral health services—preventive and restorative—should be available, accessible, and acceptable to all. In areas where different languages, culture, and health care beliefs would otherwise be barriers to care, a cadre of clinically and culturally competent providers must be available to provide care.

C. Resources in Chautauqua County

The following are some of the Chautauqua County organizations, agencies and programs that offer health services and other forms of assistance related to the dental health needs of young children and other residents.

- CACPF (reimburses daycare facilities and similar programs for providing appropriate nutrition)
- Chautauqua Opportunities, Inc. (summer lunch program)
- Chautauqua County Department of Social Services (food stamp program)
- Chautauqua County Rural Ministries: Emergency Food Pantry, Dunkirk
- Child Health Plus
- 3 Community Kitchens providing free meals (Dunkirk, Westfield, and Jamestown)
- 1 Dental Hygiene Program: Jamestown Community College
- 64 dentists
- Eat Well, Play Hard
- The Eighth District Dental Society

- 5 Farmer's Markets
- 68 Fluoridated water systems (<http://apps.nccd.cdc.gov/MWF/CountyDataV.asp?State=NY>)
- Fruits/Vegetable stands
- 4 Medicaid Providers (Chautauqua Opportunities, Community Care, Fidelis, Univera)
- Pediatric practices (dieticians available for counseling)
- Salvation Army Food Pantry, Jamestown
- STEPS Program, Chautauqua County
- Success by 6
- The Resource Center dental clinics, Dunkirk and Jamestown
- WIC Nutrition Program

D. Opportunities for Action

Opportunities for action in Chautauqua County pertinent to oral health, adapted from the *Healthy People 2010* Initiative, include the following.

- Reduce the number of dental caries in pit and fissure tooth surfaces of children.
- Increase the percentage of children receiving dental sealants by grade 3.
- Encourage dental insurance companies to pay for dental sealants for children.
- Increase oral health literacy in school curricula, particularly in the primary grades.
- Increase the implementation of water fluoridation in new communities.
- Increase the percentage of children and adolescents using fluoridated toothpaste, fluoride tablets, and/or fluoride mouth rinses, particularly in areas with unfluoridated water.
- Use media, schools, and other institutions to educate the public about the value of sealants for children shortly after their permanent molars erupt.
- Target preventive dental procedures to poor, largely inner-city and rural children in school-based or school-linked programs.
- Educate children and their parents about meeting appropriate daily dietary needs, including fruits, vegetables and calcium, and limiting sugary snacks and drinks.
- Encourage new mothers to breastfeed, and discourage infants being put to bed with juice, milk or formula bottles.
- Encourage worksite promotion of nutrition and weight management.
- Increase access to restorative services for persons in need.
- Increase access to primary preventive and early intervention service, particularly for vulnerable populations who need professional care.
- Increase surveillance of oral diseases or conditions.