# Oral Health
# Needs Assessment

***The state of oral health***

***In Sullivan County, NY***

***March 2016***

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Public Health
Prevent. Promote. Protect.
Sullivan County
Public Health Services

**Prepared for the Oral Health Coalition of the Sullivan County Rural Health Network by**

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March 30, 2016

Dear Sullivan County Residents,

I am pleased to present the first ever Oral Health Needs Assessment commissioned for Sullivan County Public Health Services and the Sullivan County Rural Health Network. This needs assessment was completed as a result of our desire to better understand some of the issues and barriers that may be involved in our county's poor oral health statistics, with an emphasis on children and pregnant women.

In August 2014, we held the County's first Health Summit which focused on the top three NYS Prevention Agenda priority areas identified by the county in its 2013-17 Community Health Needs Assessment. The top three priorities are to 1) prevent chronic disease, 2) improve mental health and reduce substance abuse, and 3) improve maternal and child health. Following the health summit, a committee of health and human service providers and concerned residents started meeting to implement some of the recommendations regarding maternal and child health. An Oral health Coalition formed under the leadership of Health Department staff and began meeting with community organizations to identify ways to increase availability of oral health education, prevention education and access to dental care. Several initiatives have been implemented, with a renewed commitment among all involved providers to focus on women and children's oral health and to incorporate teaching parents the importance of good oral health practices. This includes a special emphasis on health education with parents to reduce baby bottle tooth decay and for parents to reduce the amount of sugar sweetened beverages they give their young children, which also can lead to obesity at an earlier age.

In January 2016, the Public Health Services started a pilot program with PRASAD Children's Dental Health Program to provide oral screenings to children and pregnant women in its WIC clinic in Liberty using volunteer dental hygienists twice per month. This partnership is one example of the many initiatives that are under way with our community partners to improve oral health. Hudson River Healthcare provides dental services to low income residents and is also a key community provider and partner.

Many factors are involved with poor oral health status of specific populations. This can include a lack of awareness about the importance of good oral hygiene in infancy, early childhood and during pregnancy, poverty, lack of transportation and other barriers to care, a lack of dental providers for the population size, a small number of dental practices willing to provide services to low income families or the uninsured, and a lack of fluoridated water throughout the very large rural county except in the Village of Monticello. Most schools no longer provide fluoride tablets or rinses as part of their school health programs. In addition, there is a need for primary care providers and pediatricians to be more aggressive in offering fluoride prescriptions to mothers of young children who live in rural areas throughout the county.

This report outlines some of the access issues and concerns identified through a brief needs assessment over a brief, six week period and although it does not identify all possible issues, it is the start to what we hope will lead to additional studies and opportunities to obtain resources to improve oral health in Sullivan County. We hope you find it useful. I invite you to join us in our efforts to improve oral health in Sullivan County and to call us with questions and become involved in the Oral Health Coalition. Finally, I want to thank Health Promotion Strategies, Inc. and the staff at Public Health for their insight, contributions, and continued commitment to improving the health of all Sullivan County residents.

Yours truly,

Nancy McGraw

Nancy McGraw, LCSW, MBA
Public Health Director

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## Executive Summary:

Sullivan County is a beautiful rural county of about 1000 square miles with a population of 75,943 (2014 census estimates). Monticello, the county seat, is located about 100 miles northwest of New York City. The county health department, Sullivan County Public Health Services, has commissioned this first of its kind Sullivan County Oral Health Needs Assessment.

Sullivan County Public Health Services is a founding member of the Sullivan County Oral Health Coalition. The coalition came into being as a response to the ongoing poor dental status of county children. This document focuses its attention primarily on the oral health of children and pregnant women in Sullivan County, with a limited discussion of other vulnerable populations.

***Maternal and child focus:*** Maternal and Child Health is one of the three priority areas in the Sullivan County Community Health Improvement Plan for 2013-2017 (the plan can be seen at the Sullivan County Public Health Services website by going to http://www.co.sullivan.ny.us and clicking on Departments, then choosing Public Health Services, and finally Data and Reports).

Why start with maternal and child oral health? Oral health issues during pregnancy can result in premature birth and other problems, and it is now known that the developing fetus' dental health can be affected. During childhood, oral health issues not only have a severe impact on a child's overall health, growth and development, but can impact the child throughout life. Prevention is simple and yet not always accessible to everyone for a variety of reasons explored in this report. The cost effectiveness of prevention is explained as a return on investment (ROI), with examples taken from the Medicaid Dental Fee Schedule.

Although the focus is on maternal and child health, and statistics, the health of some groups of

people are more impacted by local economics and social pressures than others and the challenges to receiving oral health care for certain other segments of the Sullivan County population, for example, the elderly, those with mental illness, and others, are also defined.

### *Resources:*

Because there was no current list of dental practices or of those dental treatment facilities specializing in care for low income or other special populations and open to the public in Sullivan County, a comprehensive search to enumerate and verify all active dental practices was completed and a list developed. The county planning department, using the list and working with the Public Health Director, created a local map highlighting the areas in the county served by these dental practices.

### *Gaps and Barriers:*

The gaps and barriers are outlined and most will not be a surprise to anyone familiar with Sullivan County health and economic issues. A lack of transportation, low income, and no dental insurance were some of the main findings of the report. In anecdotal reports, finding a dentist to accept a pregnant woman having dental problems was sometimes difficult.

### *Gathering local information:*

In an effort to learn more about local oral health, a number of steps were taken:

- Surveys were developed for three audiences, with input from the Public Health Director and from a dentist who is an active member of the Oral Health Coalition. The purpose was to solicit feedback and experience from a balance of perspectives related to oral health. The surveys included:

1. A dental practice survey
2. A school nurse survey, and

3. An anonymous public survey regarding oral health experiences and practices during pregnancy and childhood (older than six months of age).

- Information was also collected by interviews conducted by trained WIC staff using forms made for this purpose. (WIC is the "Special Supplemental Nutrition Program for Women, Infants, and Children" providing supplemental foods, nutrition education and health care referrals for eligible women, infants and children until age five. Participants are generally low income, placing them at particular risk for oral health issues and thus it was felt that they were an important group to highlight). Nutritionists interviewed WIC maternal program participants for a seven day period. The interviews had two purposes:

1. To learn about the oral health status and practices of low income women enrolled in WIC during their pregnancies, and
2. To learn about their children's oral health and oral health habits

No names were collected and the writer of this assessment never saw the women who were interviewed.

- Last, two focus groups were held to gain informal and anecdotal input:

1. A focus group of professionals who belong to the Rural Health Network, and
2. A focus group of moms who are living with some of these oral health issues.

Although the short time to complete the survey and interview projects did not allow for the solicitation and analysis of the large number of responses needed to be representative of the entire county, the information received was helpful as a whole in conjunction with existing local and state statistics and along with the focus groups. The school nurse surveys can be seen as quite representative of public schools from the school nurse viewpoint as there was an 85% response rate. All survey and interview tools as well as the list of dental practices and the dental practice map can be viewed in Appendices B and E.

### *Highlights of Findings:*

The findings of the local research are thoroughly documented in this report and there are many charts and tables. Overall, it was somewhat surprising to learn that, of the people interviewed and surveyed, the majority never received fluoride supplements, one of the most cost effective decay prevention tools. We found that the majority of children, again for whom we have data, drink sweet beverages at least once a day, and often twice. We also learned that the mobile dental van available at schools but open to all children in the county, including infants, is very underutilized.

We did learn that since Medicaid Managed Care and the Affordable Care Act (sometimes known as "Obamacare") were implemented, many more people in the county, particularly children, now have access to dentists than was the case in the past, because there are many dental practices that participate in the plans. Last, we learned that there are very concerned health professionals, including dentists and school nurses, who really want to help.

At the end of the report, recommendations for going forward were made based on existing research, best practices, professional guidelines and standards and the survey, interview and focus group results. Expansion of the Oral Health Coalition to include partners who can champion change in regard to implementing preventive oral health practices in pediatrician and obstetrician offices, in schools, in neighborhoods and in other settings is important. Looking at the dental shortages that may not qualify the entire county as a Dental Health Professional Shortage area, but may qualify portions of the county is another area to explore. In all, ten recommendations are included for consideration. There are many dedicated and talented people putting their focus on this problem right now and that bodes well for a successful outcome and improved oral health, first for pregnant women and children, and next for others in Sullivan County.

**Oral health as part of overall health:** It is an ongoing evolution in thinking for health professionals, policymakers and others to fully understand oral health's importance to, and impact on, overall health. This attention to oral health as an important consideration of overall wellness was first brought to wide public attention by US Surgeon General Dr. David Satcher in his 2000 report entitled "Oral Health in America". At that time, he also specifically highlighted the significant racial and socioeconomic disparities in the state of oral health, which still persist today.

Far from being a cosmetic issue alone, an increasing body of research has connected poor oral health (which includes health of the gum, teeth, and jawbone) with a range of very poor health outcomes in children and adults. Additionally, systemic health conditions, for example, diabetes or anemia, are sometimes first recognized by changes in the mouth. Research has also linked periodontal disease in pregnant women with low birth weight and premature deliveries (March of Dimes) affecting not just the mother but her baby as well.

## Oral health in childhood is linked to overall health throughout life:

A child with untreated dental caries ("cavities") is often a child who has difficulty playing, eating, sleeping, and paying attention in school because of mouth pain. Consequently, that child can suffer from emotional outbursts and crankiness, poor nutrition, weight loss, chronic fatigue, school absences, poor grades and, when teeth are unsightly or have broken or been extracted, poor self-esteem. In the US, 51 million school hours per year are lost due to dental problems (Surgeon General's report). According to the American Academy for Pediatric Dentistry as well as many other credible sources, tooth decay is the most common chronic childhood disease in the US, and it is much more severe in children who live in poverty, and children of color and/or Hispanic ethnicity. Children living in rural areas are also less likely to receive dental care than their counterparts in more populated areas, according to the National Rural Health Association. When children grow up with a lack of attention to dental health, they

will likely continue those practices into adulthood. As one of our professional focus group members noted, within many families living in poverty, poor and missing teeth often become a cultural norm, thus perpetuating the cycle into future generations.

Many serious systemic diseases as well as low birth weight or premature births have been associated with chronic oral health problems and infections in adults. The more common of these are diabetes, heart and lung disease, and stroke. In addition, poor oral health is related to the ability to get and keep a job, and is responsible for more than 164 million lost hours of work (New York State Department of Health, hereafter referenced as NYSDOH). Thus, ensuring good oral health in children is likely to ensure a healthier, longer and more productive life.

## How to protect oral health?

Oral health in children starts during pregnancy. According to the Children's Dental Health Project's Oral Health and Pregnant Women Resource Center, "a mother's oral health strongly predicts her child's oral health status". Protecting childhood oral health is fairly straightforward once the child is born but not always so easy to attain and maintain for people living in challenging circumstances such as poverty or single parent families. Having the child seen by a dentist regularly for prevention and treatment beginning in infancy is important. Providing regular oral hygiene such as wiping the gums of infants after drinking or eating, brushing teeth until a child begins to brush for themselves, ensuring that sugary foods and drinks are kept out of the diet or at least to a minimum, avoiding sharing of objects from one mouth to another (including from parent to child) and providing healthy foods are all key to good oral health.

In areas with no fluoridation of the municipal water supply, fluoride supplements prescribed by a dentist or pediatrician are recommended by the Centers for Disease Control (CDC) because fluoride has been proven through extensive research to prevent tooth decay. In Sullivan County, the only municipal water system that is fluoridated is in the Village of Monticello,

where the population comprises about 9% of the population of Sullivan County (2014 US census estimates). According to the American Dental Association,

> *Community water fluoridation is the single most effective public health measure to prevent tooth decay. Additionally, the Centers for Disease Control and Prevention proclaimed community water fluoridation as one of 10 great public health achievements of the 20th century.*
> (*http://www.ada.org/~/media/ADA/Member%20Center/FIles/fluoridation_facts.ashx*)

Less than half (46.3%). of third graders in Sullivan County were reported to take fluoride tablets regularly according to NYSDOH (Refer to NYSDOH map in Appendix D). There was low fluoride utilization also reported in the local survey and in WIC participant interviews, detailed later in this document.

Fluoride varnish applications two to four times per year applied by a dentist, dental hygienist, or pediatrician or registered nurse especially trained in their application have been found to be very effective in caries prevention starting with the primary teeth. Dental sealants applied by dentists on permanent molar surfaces provide additional protection, and are especially recommended for children at high risk for dental caries (NYSDOH).

## Return on investment (ROI): cost effectiveness of preventive care:

"Keeping people healthier is one of the most effective ways to reduce health care costs", states the Trust for America's Health (TFAH), a non-profit, non-partisan organization dedicated to protecting health. Preventive care is far more inexpensive than the cost of delayed treatment, and the longer treatment is delayed, the more expensive it becomes. Illustrating this, the current New York State Department of Health Medicaid Managed Care dental fee schedule lists the dental practice reimbursement for application of dental sealants, a decay preventive coating for tooth surfaces, at $35 per tooth, compared to the cost of fillings at $50-$98 per tooth, root canal at $250-$400 per tooth, and crowns at $290-$500 per tooth. Young children,

particularly between the ages of 3-5, with severe early childhood caries may require hospitalization for their treatment, costing at least $4,500 (NYSDOH Prevention Agenda). Research has also shown that the ROI for community water fluoridation is $38 of savings on the cost of dental treatment for every dollar spent on fluoridation (National Conference of State Legislatures Oral Health Overview, 2013; CDC).

## Pregnant women and children in Sullivan County:

The US Census Bureau estimated that the population of Sullivan County overall had declined from 77,547 in 2010 to 75,943 in 2014, a drop of 2.1%. The average number of pregnant women who give birth in the county is 832 per year (2,496 births for a three year period of 2011-2013, NYSDOH vital statistics). The population of children under 18 (birth through 17 years) is approximately 16,669, or about 22% of the population. Altogether, then, about 23% of the population in Sullivan County comprises pregnant women and children from birth up to 18 years.

The following information is about children under age 18 from the 2014 Census estimates: 76.5% are White, 9.4% Black, 1.6% Asian, and 6.3% other. About 21% are Hispanic, 2.3% are foreign born, and 2.1% are in foster care or otherwise living with non-relatives. In the previous 12 months, almost 26% had lived below the poverty level, and 32.3% currently are living in a household with SSI, Public Assistance, or SNAP (Food Stamps). A little more than half live in owner occupied homes and the remainder in rental units. About 90% attend public schools and the rest private schools, and about 85% of children graduate high school.

## Population 65 years and older:

Although not the primary focus of this oral health needs assessment, it is important to at least mention this population that is so affected by oral health problems. The census bureau estimates that there are 12,059 people in Sullivan County or almost 16% of the population in this age category, the age at which Medicare eligibility begins. Medicare coverage is often a

boon and a great relief to many people who are, sometimes for the first time, covered at a reasonable monthly fee for physician visits, hospitalization, outpatient procedures, and to some degree, medications. However, Medicare is not much help in regard to dental health. This is an excerpt from Medicare's website in March, 2016:

> *Medicare doesn't cover most dental care, dental procedures, or supplies, like cleanings, fillings, tooth extractions, dentures, dental plates, or other dental devices. Medicare Part A (Hospital Insurance) will pay for certain dental services that you get when you're in a hospital. Part A can pay for inpatient hospital care if you need to have emergency or complicated dental procedures, even though the dental care isn't covered.*
> (www.medicare.gov)

Most people who enter the social security retirement system are on a fixed income and costs of dental care are a challenge for them. Nationally, 19% of people 65 and older have lost all their teeth (CDC, 2011-2012 statistics). As older people leave work, they often lose dental insurance just as their income drops. Many are also unable to get to a dentist for care as they may lose their driving ability or become homebound by physical disability. Many oral cancers are not discovered early enough because so many seniors can no longer afford to see the dentist. These oral cancers tend to have very poor outcomes, and the earlier they are detected, the better the person's survival chances. Unfortunately, higher mortality rates for people of color exist with these cancers as for many other cancers (CDC, 2006). The recognition of the importance of and need for oral care for seniors cannot be overstated.

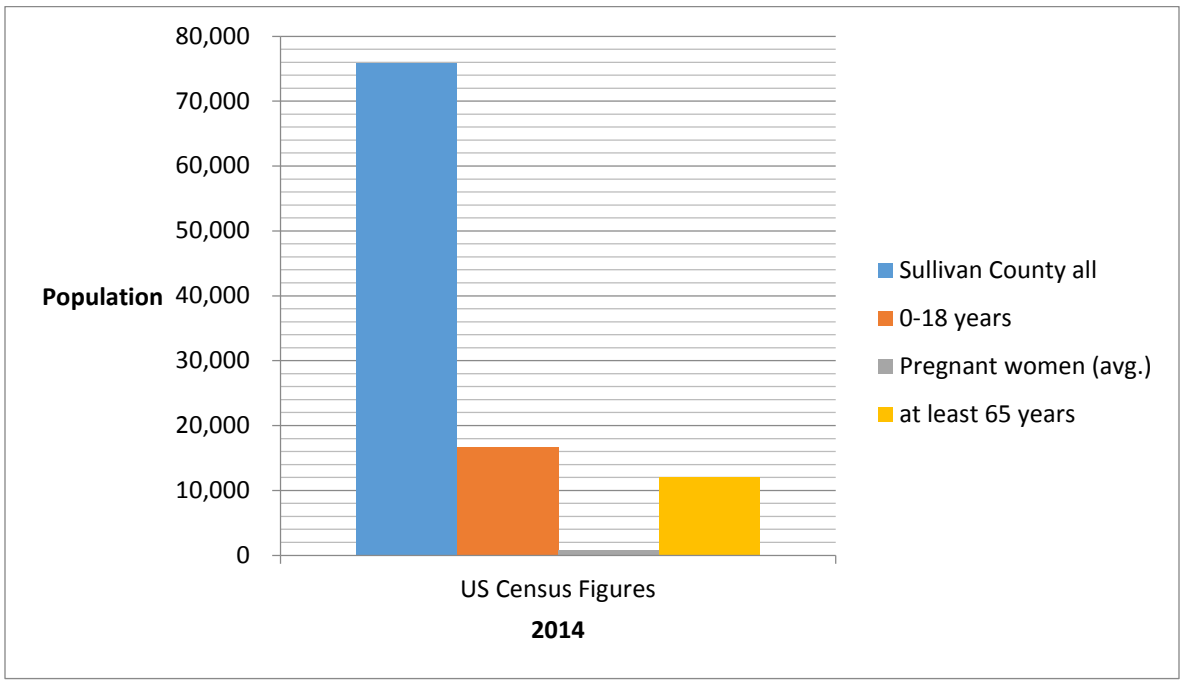



**Chart 1: # of pregnant women, children 0-18, and people over 65 compared to the population**

*Graph by Health Promotion Strategies LLC*

## Other special populations:

Additional groups at high risk for oral health issues include all ages living in poverty, people with physical disabilities who cannot easily access care, those with severe mental health issues who have difficulty managing priorities and tasks, the homeless, those who are homebound for a variety of reasons, and those in the developmentally disabled categories. Many belong to more than one of these groups simultaneously. Members of these groups may also be included as part of the maternal and child health or senior populations previously discussed. Although not within the scope of this document, a closer look at some of the issues creating barriers to access to health care and dental care for these populations might be useful at some point.

### *Overview of oral health in the US, New York State, and Sullivan County:*

It is not possible to separate health from oral health; as noted earlier, they are intricately

linked. Sullivan County, as many readers know by now, has struggled to improve the poor overall health outcome rankings that have been published annually in the Robert Wood Johnson Foundation (RWJF) county health rankings report (www.countyhealthrankings.org) beginning in 2010 (2016 county health ranking for Sullivan County can be seen in Appendix D). Relatedly, NYSDOH periodically works in conjunction with each county to conduct an oral health survey in a representative sample of schools, examining the mouths of third graders. The report from the last survey, 2009-2011, revealed that Sullivan County had double the state rate overall of untreated caries (dental cavities). This graph shows some of the findings from the survey in Sullivan County compared to the findings for the state as a whole.

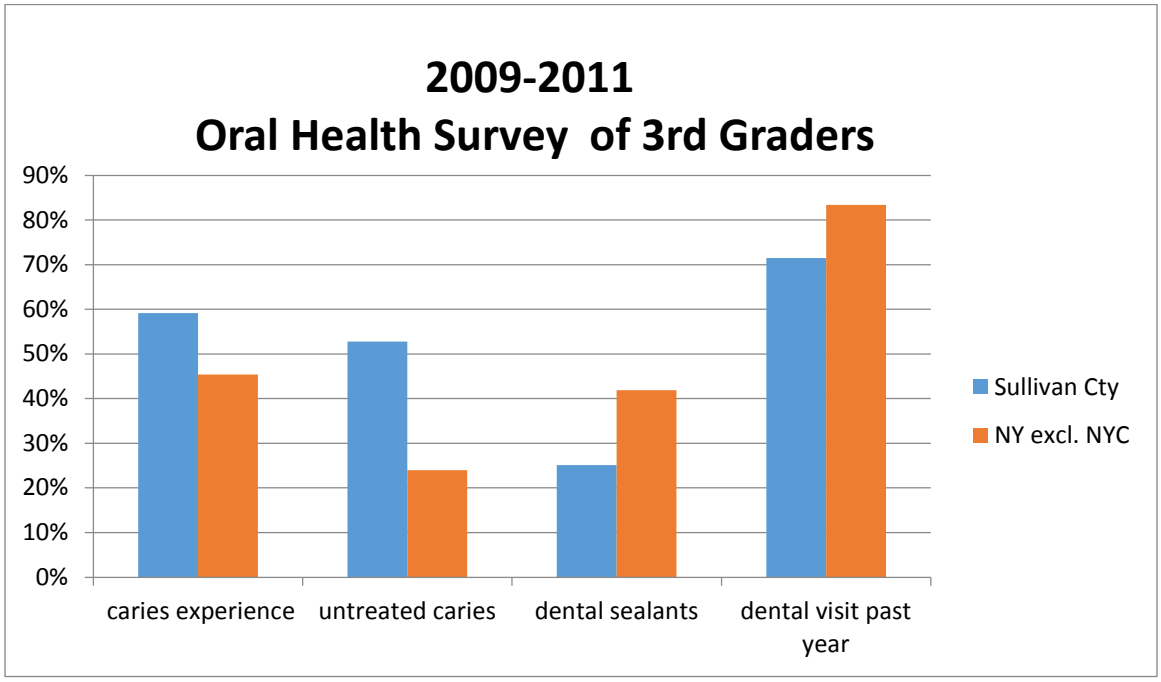



**Chart 2: Oral Health survey findings of Sullivan County students compared to NYS**

Data from New York State Department of Health

*Chart by Health Promotion Strategies LLC*

The Sullivan County 3rd grade caries experience (the column on the far left and defined by NYSDOH as the presence of a cavity or a filling) is highest in the Hudson Valley Region, which

according to the NYSDOH category of "regions" includes the counties of Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester. There are eight counties in the state where children's caries experience exceeds those of the children in Sullivan County. However, it is especially disturbing that the *untreated* dental caries (presence of an untreated cavity) rate in Sullivan County is higher than in every other county in the state (see map in Appendix D entitled "Percentage of Children with Untreated Caries"). What this represents is that although Sullivan County may not have the most children with an experience of tooth decay, there is a marked disparity in Sullivan County of children receiving any treatment for their decayed teeth.

## Relation of poverty to poor oral health:

According to the Healthy People 2020 Oral Health Overview at www.healthypeople.gov, "A person's ability to access oral health care is associated with factors such as education level, income, race, and ethnicity". There is an abundance of research by esteemed public health, academic and financial institutions (including the World Bank), demonstrating the strong link between poverty and poor health. As the RWJF President Dr. Risa Lavizzo-Mourey wrote, "We know that a child's life expectancy is predicted more by his ZIP code than his genetic code" *(Open Forum: Voices and Opinions from Leaders in Policy, the Field, and Academia, September 2012).*

A snapshot of the poverty in Sullivan County will in part explain the poor health and poor oral health outcomes. The CDC defines poverty as:

> *When a person or group of people lack human needs because they cannot afford them. Human needs include clean water, nutrition, health care, education, clothing, and shelter. … Families or people with income below a certain limit [as set by the US Social Security Administration] are considered to be below the poverty level.*

Federal Poverty guidelines which establish eligibility for many programs are seen in Table 1.

| Table 1:2015 POVERTY GUIDELINES FOR THE 48 CONTIGUOUS STATES AND DC | |
|---|---|
| **Persons in family/household** | **Poverty guideline** |
| 1 | $11,770 |
| 2 | $15,930 |
| 3 | $20,090 |
| 4 | $24,250 |
| 5 | $28,410 |
| 6 | $32,570 |
| 7 | $36,730 |
| 8 | $40,890 |
| ***For families/households with more than 8 persons, add $4,160 for each additional person.*** | |

**Table 1 : Poverty Guidelines for most of US, 2015**

Source: US Department for Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, March 2016

Sullivan County has an overall poverty rate of 18%, compared to the state rate of 15.6%. Of children under eighteen in Sullivan County, 26% live in poverty, higher than the state rate of 22%. And of those families with female heads of households and children present, 46.3% live in poverty, compared to an average of 38.4% for NY state (February 2016 Poverty Profile, www.nyscommunityaction.org). There is more detailed information about Sullivan's population of children under the heading "Pregnant women and children in Sullivan County".

The US Department of Health and Human Services' Office of Disease Prevention and Health Promotion defines health disparities as "A particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage" (healthypeople.gov). Poverty, unfortunately, is often linked with race and ethnicity and health disparities associated with race and ethnicity as well as low income level are well established in New York and in the US. The poverty, race and ethnic related disparities also, of course, include disparities in oral health.

The New York State Oral Health Plan, published in December, 2014 noted that low income or minority residents are at higher risk overall for experiencing dental decay. The combination of poverty and minority status, therefore, has created an even greater oral health disadvantage for children and adults in the county.

In Sullivan County, Blacks experience more than double the poverty rate as Whites, and Hispanics also live in poverty more often than Whites. You can see the stark contrast between the percentage of each racial and ethnic group in poverty compared to each group's percentage of the overall population in charts 3 and 4:

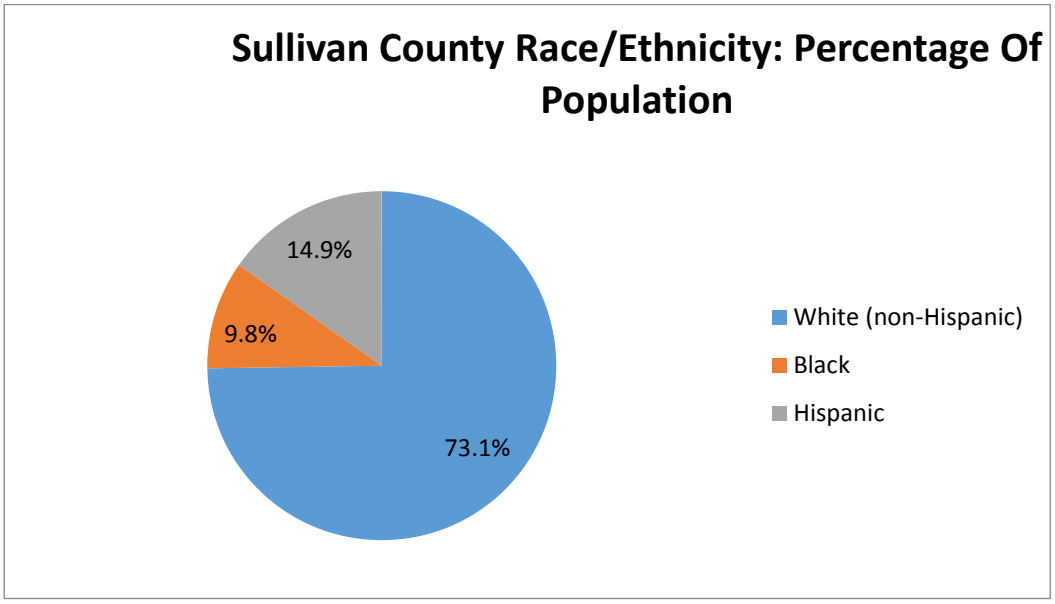



**Chart 3: Sullivan County Race/Ethnicity: Percentage Of Population**

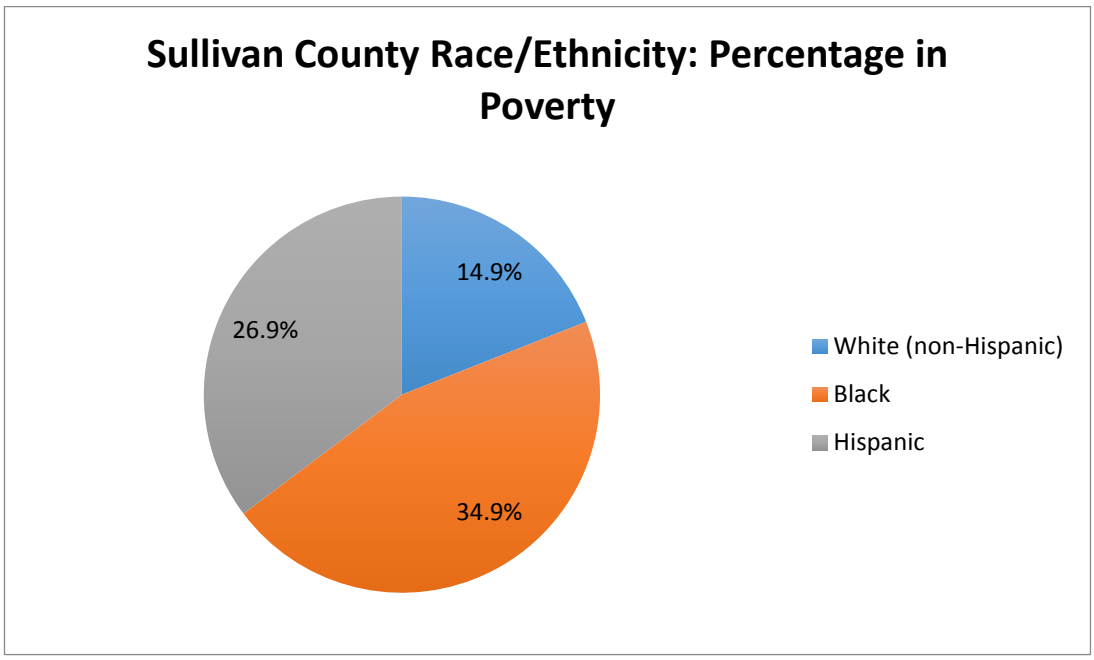



**Chart 4: Sullivan County Race/Ethnicity: Percentage in Poverty**

Data from US Census, 2014 estimates

*Charts by Health Promotion Strategies LLC*

## Resources:

The resources available to receive screenings and treatment primarily for dental health care for Sullivan County residents includes fifteen private practices, two article 28 dental facilities (see blue box for explanation), one of which is classified as a school-based health center, one Federally Qualified Health Center Dental Clinic (blue box), and as a last resort, the emergency department of the local hospital (for most residents that is Catskill Regional Medical Center, although some may go outside of the county or state for facilities closer to them). Managed Care Plans along with other dental plans are an additional resource without which many people currently accessing dental care would be unable.

### *Dental offices:*

Table 2 provides an overview as of March 2016. There is no prior database of information listing

the various dental practices and services or of all the Dentists in the county (list now in Appendix B). The table includes private as well as publicly funded dental care resources.

**Table 2: Summary of Sullivan County Dental Practices Open to the Public** ***(subject to change)***
***Insurance plans (including Managed Medicaid &Child Health Plus ) have online searchable Provider Databases of their participating dentists***

| Main service | # of practices | Locations | Payment * | Comment |
|---|---|---|---|---|
| General Dentistry<br><br>(Private Practices) | 15 | Barryville, Callicoon, Eldred, Ferndale, Harris, Liberty, Monticello, Narrowsburg, Rock Hill, S. Fallsburg, Woodridge, Wurtsboro | Varies depending on practice. Most accept insurances and many accept Medicaid Managed Care (MMC) and Child Health Plus (CHP). | Many see children and will see pregnant women. A few have the bulk of their practice as cosmetic care but they all state they do general dentistry. |
| Pediatric Dentistry: school-based health center | 1 | Hurleyville, Liberty WIC, and most public schools | Accept MMC, CHP and insurances; sliding fee scale for uninsured. | Dental diagnostic and treatment clinic under Article 28 of NYS Public Health Law (PHL). Mobile dental van for pediatric dental education, prevention, & treatment. |
| Oral Surgery | 2 | Monticello | Accept MMC, CHP and private insurances. | Private offices |
| National franchise: multiple dentists, generalists and specialists | 2 | Liberty, Monticello | Most MMC, CHP and insurances accepted, accept "Care Credit" cards as well. | In addition to general dentistry, specialties include pediatric dentistry and oral surgery |
| Federally Qualified Health Center Dental Clinic (FQHC) | 1 | Monticello | Accept MMC, CHP and insurance. Sliding fee scale for uninsured. | General dentistry. |
| Specializing in dentistry for people with behavioral challenges | 1 | Monticello | Accept MMC, CHP and insurances; sliding fee scale for uninsured. | Dental diagnostic & treatment center regulated under PHL Article 28 . Open to general public. |
| Orthodontia (Braces) | 2 | Monticello | Check offices about Insurance | One practice participates in the Physically Handicapped Children's Program. |
| Total | 24 | | Private practices often do not accept uninsured unless payment is received day of service. | |

**Table 2: Summary of Sullivan County Dental Practices Open to the Public**

**Definitions:**

**Federally Qualified Health Center (FQHC):** A federally designated facility that in return for enhanced reimbursement by Medicare and Medicaid and other benefits, "must serve an underserved area or population, offer a sliding fee scale, provide comprehensive services, have an ongoing quality assurance program, and have a governing Board of Directors" (HRSA).

**School- Based Health Center (SBHC**): Designated by the New York State Department of Health based on need and on an application process by the provider, and considered to be one of the most effective and efficient ways to provide preventive care to children, a dental SBHC provides dental health education, dental hygiene services and dental treatment onsite at schools.

**Diagnostic and Treatment Center under Article 28 of NYS Public Health Law:** A clinic which operates under strict state guidelines, adherence to specified standards including those regarding billing, employment, supervision, and patient care and receives enhanced Medicaid and Medicare reimbursement directly.

### *Medicaid Managed Care and Child Health Plus Plans:*

There are three Managed Medicaid plans for Sullivan County, all which include dental coverage: Crystal Run Health Plan, MVP and Fidelis. (MVP took over the Medicaid Managed Care "market" in Sullivan County from Hudson Health Plan.) MVP has the most enrollees as of March 2016 (all plan data courtesy of Health Plans and Sullivan County Department of Family Services). A further breakdown was available from MVP data only, which is summarized in chart # 6.

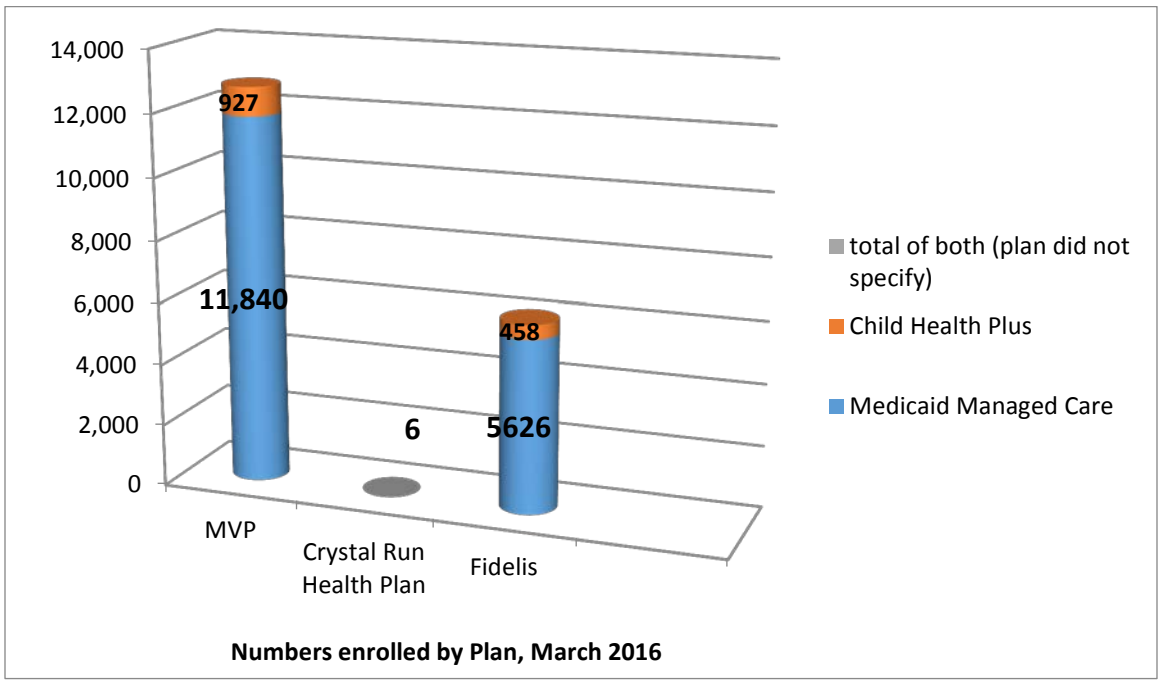



**Chart 5: Sullivan County Medicaid Managed Care Members Enrolled, by Plan**

*Chart by Health Promotion Strategies LLC*

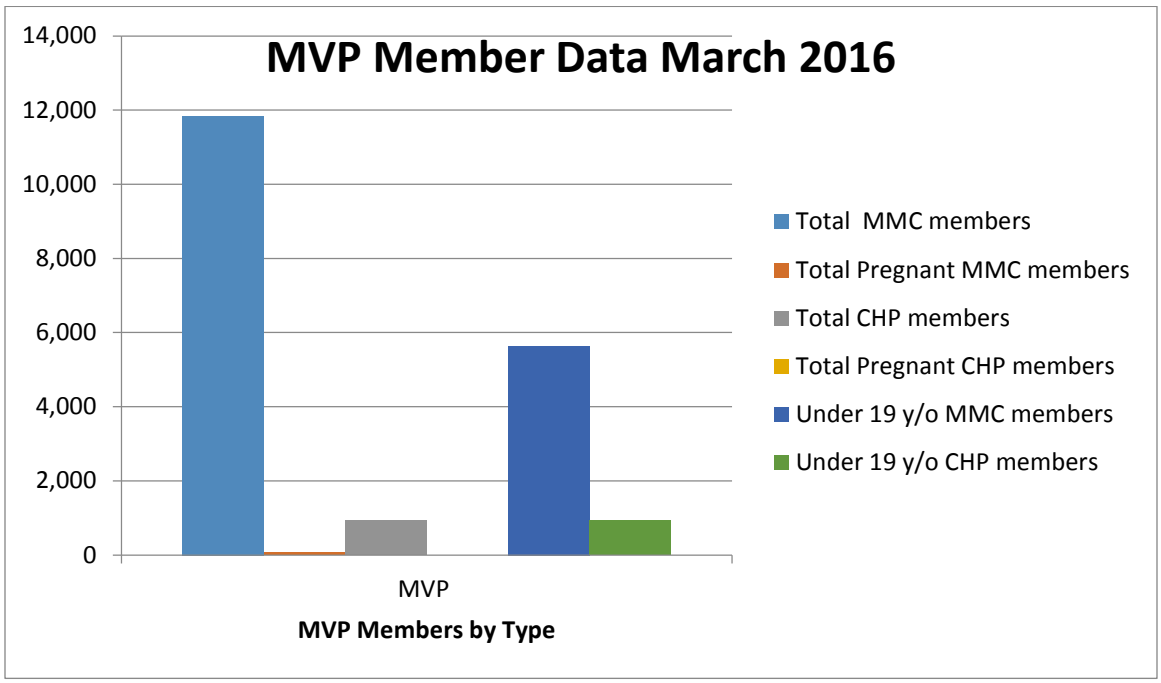



**Chart 6: MVP Medicaid Managed Care Company members in Sullivan County**

*Chart by Health Promotion Strategies LLC*

***School based services:*** School nurses representing all public school districts responded to a survey about oral health in their schools. Slightly more than half indicated that a variety of services were available to students ranging from dental health education to dental treatment. Almost half stated that none were offered. (chart # 9)

***Dental providers for the uninsured, Medicaid and Child Health Plus recipients:***

For the children and pregnant women who are uninsured or for those with Medicaid Managed Care (MMC) or Child Health Plus (CHP), and for those children with low cost dental coverage that is a mandated part of the Affordable Care Act (ACA or "Obamacare") , there are many choices of provider where dental care may now be obtained. It has been one advantage of the switch from fee for service Medicaid to managed care Medicaid that a much broader number of dental practices participate in the plans. In the past, with fee for service (sometimes called "straight") Medicaid, it was very difficult to find any dental practice that participated.

***The PRASAD Children's Dental Health Program,*** an Article 28 mobile dental clinic and school-based health center (SBHC) conveniently visits county schools and is able to provide dental health education, preventive and restorative dental services without parents needing to take time off from work or to drive anywhere. The program is a real benefit in a county where there is no public transportation and there are many low income children as previously described. This service is an important resource that has the capacity to serve more school children. PRASAD CDHP also currently provides dental health education and free dental screenings to children and pregnant women enrolled in the WIC program at Sullivan County Public Health Services.

PRASAD CDHP currently serves children in the following school locations:

| School sites | Address | School District |
|---|---|---|
| Benjamin Cosor Elementary School | 15 Old Falls Rd, Fallsburg 12733 | Fallsburg |
| Liberty Elementary School | 201 N Main St, Liberty 12754 | Liberty |
| George L Cooke Elementary School | 69 Richardson Ave, Monticello 12701 | Monticello |
| Kenneth L Rutherford Elementary School | Patricia St Monticello 12701 | Monticello |
| Roscoe Central School | 6 Academy St. Roscoe 12776 | Roscoe |
| Livingston Manor Elementary School | 19 School St. Livingston Manor 12758 | Livingston Manor |
| Tri-Valley Elementary School | 34 Moore Hill Rd Grahamsville 12740 | Tri-Valley |
| BOCES Sullivan County | 85 Ferndale Loomis Rd, Liberty 12754 | Sullivan County |
| Head Start Woodbourne | Route 52 Woodbourne 12788 | Woodbourne |
| PRASAD Main office | 465 Brickman Rd, Hurleyville, NY 12747 | NA |

**Table 3: School locations served by PRASAD CDHP March, 2016**

*Table furnished by PRASAD Children's Dental Health Program, Inc.*

PRASAD schedules appointments at the different sites according to the number of applications received. Parents can bring their children to any site. PRASAD sees children from six months to eighteen years of age.

***Hudson River Healthcare***, a Federally Qualified Health Center (FQHC) in Monticello includes a Dental Clinic and will accept people of all ages regardless of ability to pay. Hudson River has a robust Spanish-English bilingual staff.

***Discovery Health Center Dental Clinic***, which is operated as an Article 28 Diagnostic and Treatment Center, is associated with the Center for Discovery but will see people from the public. They are skilled in working with people with behavioral issues.

It should be mentioned that there is also a FQHC Dental Clinic in the Ulster County village of Ellenville, which is convenient to some parts of the Towns of Neversink and Fallsburg; for example, Grahamsville and Woodbourne. People who live in these areas of Sullivan County and are without insurance also use that clinic as it is closer to them than Monticello. All FQHCs must accept MMC and also offer a sliding fee scale (see box "Definitions).

Federally Qualified Health Centers, Article 28 Treatment Centers, and School-Based Health Centers are generally the best options and most affordable ways to receive high quality professional dental care for those who are low-income, uninsured and/or underinsured.

## Gaps and Barriers to Oral Health Care:

***Scarcity of dentists in some areas of the county:*** According to the 2016 RWJF County Health Rankings, there is one dentist in Sullivan County for every 2,450 residents. For New York as a whole, the ratio is 1,280:1. Although Sullivan County does not currently qualify as a Dental Health Professional Shortage Area (see blue box: "What is a Dental Health Professional Shortage Area?" ), there are nevertheless what might be described as "deserts" of dental practice presence in the county, for example, in some parts of Northern and Western Sullivan County. (Refer to the map entitled "Dental Facilities" in Appendix B). Especially with the lack of public transportation that mostly affects low income, elderly, and/or disabled residents, getting to a dentist can be far more of a challenge for some people living in these areas.

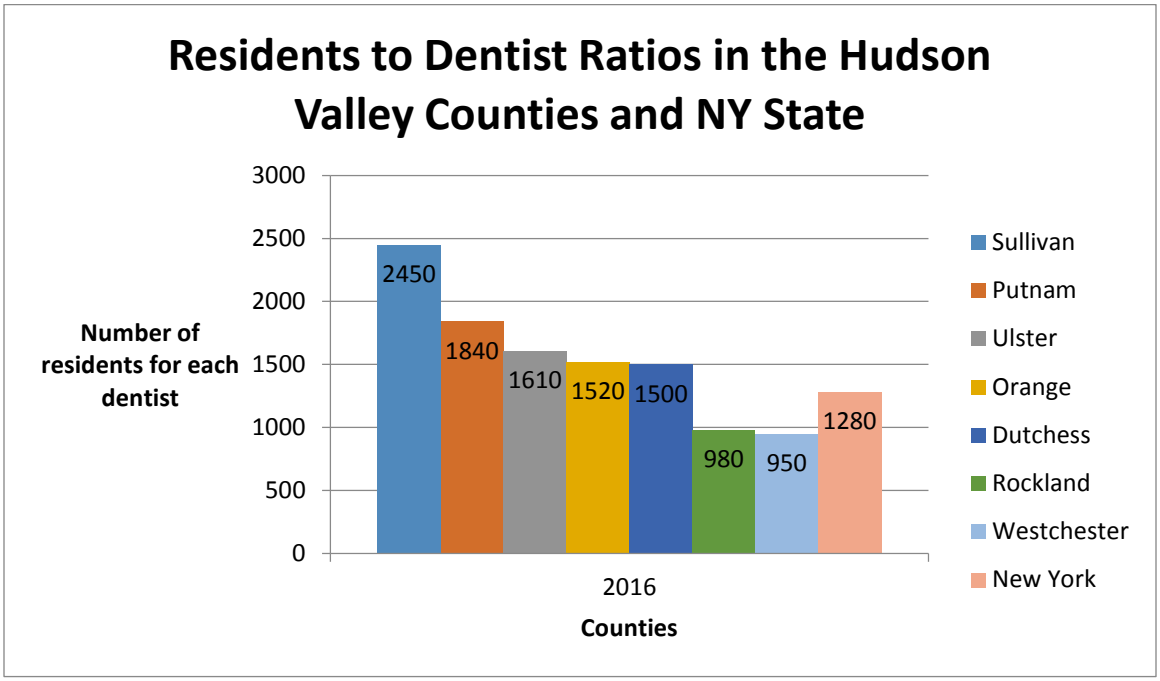



**Chart 7: Resident to dentist ratio in Sullivan County and surrounding counties**

Data from County Health Rankings, source National Provider Identification Files (CMS)

*Chart by Health Promotion Strategies LLC*

**What is a Dental Health Professional Shortage Area (DHPSA)?**

A DHPSA is defined as a region with a ratio of at least 5,000 residents to each full time dentist ( 5,000:1). DPHSAs are designated by the US Health Resources and Services Administration, commonly referred to as HRSA, which is a branch of the US Department of Health and Human Services (HHS) charged with developing the criteria and the DHPSA designation. HRSA also designates two other Health Professional Shortage Areas in the US including primary care and mental health professional shortage areas.

***Insufficient number of pedodontists (pediatric specialty dentists):*** According to the Medicaid Managed Care Plans in Sullivan County and our dental practice survey, there are a maximum of 8 full-time pedodontists, which is likely a greater number of full time specialists than are

actually accessible in the county. Some plans list multiple providers who rotate for each other and fill in, when in actuality, the number of full time dentists is not a true measure of access. To calculate a very rough idea of the ratio of pedodontists to the pediatric population, one may divide 16,669 children, birth through 17 (according to census estimates) by 8 full time pediatric dentists or pedodontists and arrive at a rough ratio of 2,084:1. It is probable that the ratio is higher (greater population of children to dentists). It is important to understand that dental ratios calculated by existing methods may not truly reflect accessibility. This is why it is important that local needs assessments are conducted to reflect the existing health care system.

***Lack of a coordinated, affordable and widely available public transportation system:***

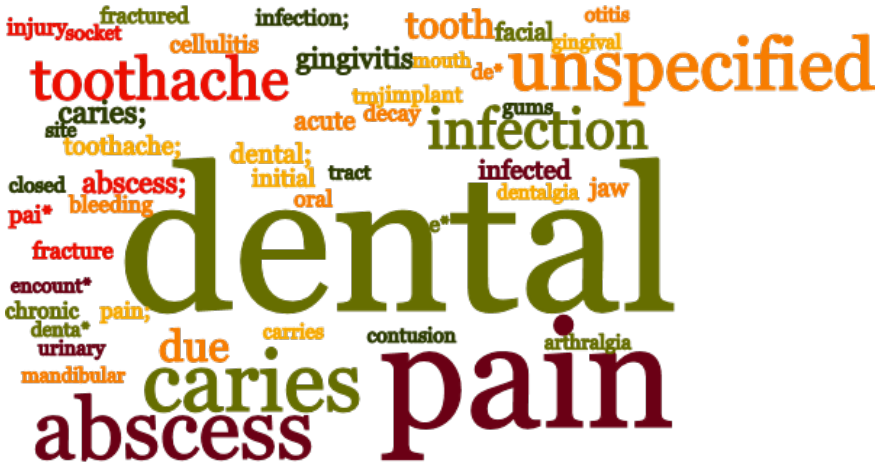
Being dependent on others for transportation makes seeking preventive dental care very difficult. Low income individuals or families unable to purchase and maintain a car, families who share one car between two or more drivers, single parent families, those who do not qualify for Medicaid (so cannot use Medicaid transportation to get to dental appointments), residents with physical or mental disabilities who are not able to drive, and others may struggle to get to a dentist appointment.

In many cases, simply because they are dependent on other people, transportation destinations may not always be the choice of the rider. If the driver needs to shop, then the rider will shop at the same place. Taking a rider to dental appointments may be last on any driver's list unless there is an emergency.

***No dental insurance or high deductible and co-pay:*** The Affordable Care Act (ACA), known by many simply as "Obamacare", mandates services as part of the essential health benefits for children but not for adults and so although dental insurance is available through the Health Exchanges as a separate package for adults, premiums may not be affordable. One of the focus group contributors mentioned that although low income parents may not themselves be able

to afford their own dental care, they are so happy their children have dental coverage and can get care. People who receive dental coverage through their employment often have high co-pays and deductibles. Many employers, especially minimum and low wage employers, do not provide a dental insurance package at all. In an American College of Obstetricians and Gynecologists' (ACOG) 2008 study where practitioners were surveyed on oral health issues (Morgan, et. al) over half, or 52% stated that lack of dental insurance was, in their experience with their pregnant patients, a significant barrier to receiving oral health care. As also mentioned earlier, Medicare does not cover most dental care.

Many people dealing with any of the barriers discussed and others may end up in the Emergency Room with dental issues that have become an emergency due to lack of regular and preventive dental care. From January 2013 through February of 2016, over 1,000 ED visits were made to the Catskill Regional Medical Center Emergency Department with the presenting complaint of either "dental pain", "jaw pain", or "toothache". This number comprised a little over 1.2% of the volume of patients seen during that same timeframe, and averaged roughly one patient per day with a dental complaint (information provided by CRMC ). Word cloud 1 displays main diagnoses for these visits:




**Word Cloud 1: Words used most often in diagnoses for dental problem ED visits (CRMC)**

*Word cloud by Health Promotion Strategies LLC*

***Cultural norms:*** Like other health attitudes, beliefs about oral health can be intergenerational. Anecdotally, public health nurses often visit whole families who have oral health issues (Sullivan County Public Health Services). The sharing of cultural norms in regard to poor oral health and oral health behaviors was noted by a perinatal network Executive Director in our professional focus group and also by a private dentist during a phone interview during the process of this needs assessment development. If unhealthy oral health practices, decay and tooth loss are the norm within a family or social group, this is often a shared norm. In addition, there may not be any feeling of urgency for addressing a child's dental health issues. Sugary drinks are another manifestation of a cultural norm within a family leading to tooth decay.

***Poverty:*** As documented earlier, there is significant poverty in Sullivan County which is associated with poor health outcomes. There are various aspects through which poverty creates a barrier to oral health. They include but are not limited to lack of transportation, lack of dental health insurance, inability, even with insurance, to afford co-pays and/or deductibles, no paid sick time, and other related issues. Arguably the worst type of poverty is homelessness, where prioritization of needs is focused on survival. According to HRSA, "Persons who are homeless have more grossly decayed and missing teeth than the general population and even the impoverished population living in residences" (Homelessness and Oral Health, 1999). According to the NYS Department of Education SIRS database of homeless children by school district, there were 344 homeless children in Sullivan County from 2014-2015 (http://www.nysteachs.org/info-topic/statistics.html). An attempt to access dental care in any of these poverty situations generally is limited to urgent treatment for abscesses or other severe conditions which cause pain and suffering, promoting the person to seek emergency help for themselves or a family member.

People living in poverty who are working full time jobs often have low hourly pay and no dental

insurance. The types of employment situations in which they work often do not provide paid sick time for employee or family dental (or medical) visits, so if one does take off for an appointment, an already insufficient paycheck will shrink. Thus taking unpaid time for a dental visit is not a choice that can be made without sacrificing a basic human need like food or rent.

Poverty also often leads to poor nutrition which can result in tooth decay and gum problems. SNAP, previously called Food Stamps, can help, but in recent years the SNAP benefit has been reduced. The average benefit in New York State is $138 per person or $255 per family monthly (USDA, 2014.) WIC is still a helpful deterrent to poor nutrition for those who are eligible.

***Fluoride under-prescribed:*** We learned from surveys and interviews as well as anecdotally in our focus group that many children did not receive prescriptions for fluoride supplements, in spite of fluoride being highly effective against tooth decay. In our public oral health survey as well as in our WIC interviews, percentages of children who received fluoride supplements ranged from only 19.7% of children whose mothers were interviewed in the WIC program, to 44.2% of the public survey respondents. This trend was consistent with NYSDOH findings for third graders as mentioned earlier.

***Dentists hesitant to treat pregnant women:*** Although research has proven the safety as well as the necessity of preventive and restorative dental care for pregnant women, and is now endorsed by the American Dental Association, the US Office on Women's Health and others, some dentists may still be hesitant to provide care. There is some national research to back this up. In a 2008 study conducted by the American College of Obstetricians and Gynecologists (ACOG)) , 351 obstetricians and gynecologists answered a survey about oral health during pregnancy. Eighty-four percent agreed that routine and preventive dental care is important and that periodontal disease can have negative consequences on birth outcomes, while 66% felt that receiving dental care for periodontal disease could result in positive birth outcomes. However, 77% reported that they had patients who had been declined dental services because

of pregnancy (Morgan MA, Crall J, Goldenberg RL, Schulkin J., 2008). Anecdotally, as if to confirm this study, the women in the WIC focus group (2) told us that they were refused care for dental problems because they were pregnant (they used two different dental practices).

***Pediatricians and obstetricians may not routinely include oral health as part of routine visits:***

There has been no local data collected to either confirm or disprove this. However, oral education and screening, (and application of fluoride varnishes in pediatrician offices) is becoming a standard of care during routine pediatric and obstetrical visits (see Appendix F) and we include it here as a possibility for further study and as a suggested area of opportunity for involvement and education going forward.

## Results of interviews and surveys:

### *Dental practice survey:*

In an attempt to gain input from county dental practices, a survey was created online and introduced to dental practices by a letter from the Public Health Director encouraging their important participation followed by a call from Public Health Services staff to follow up (see Appendix E). The response was lower than hoped, less than third of all in-county practices, totaling seven, and a eighth response from an out of country practice. Of those, three surveys were only partially completed, leaving out professional perspectives and experience.

Even with these few responses however, valuable input was gained. It was not a surprise that the practices that did respond included the Article 28 and FQHC facilities among the total. We also received a response from an out of area pediatric dentist (pedodontist) who is very concerned about Sullivan County children and the state of their oral health. All of the responding and other county dentists are a potential source of untapped experience and their points of view and future participation are key to improving outcomes. Dental Hygienists are

a very important resource for their expert opinions as well.

All of the practices who responded do see children. The youngest age at which they will first see them ranges from "any time after birth" up to four years. Four of the six practices will see pregnant women. All will continue to see an existing patient if they lose their dental insurance, although one requires payment at time of service in this case. The rest will provide sliding scale fees and payment arrangements. The wait time varies from one to seven days for a new patient to receive an appointment, although one sees emergencies that same day.

The dentists responded to what they see as the greatest barriers to improved oral health:

| |
|---|
| *Parents feed their children sugary food and beverages that ruin their teeth.* |
| *Parents do not bring their children for regular care* |
| *Access to comprehensive care. There is access to exams, and basic treatment, however, if there is extensive needs, very few offices are capable of providing that* |
| *Parents do not bring their children for regular care and do not come in for follow up visits if the children need restorative care and sealants* |
| *People feed their children sugary foods and beverages that ruin their teeth...Sullivan county is a poor county with a large percentage of under-educated lower socio-economic residents. Generally speaking this strata has poor dietary habits and poor oral hygiene habits which are transferred to their children. Educating the parents is the key* |

**Table 4: Dentist perceptions of barriers to improved oral health in children**

All dentists (100%) identified parents feeding their children sugary foods and beverages as a significant concern. One mentioned that 2/3 of patients referred to him by the Medicaid plan for specialty care did not follow through. He wondered "how do you get people to care about doing something for their health or their children's health?"

Here are their suggestions for improving the oral health status of children in Sullivan County.

| |
|---|
| *If the county really wants to improve the dental health of our residents by implementing policies that will work, such as implementing a mandatory dental hygiene and nutrition course in order to sign a child up for head start or preschool or at the latest Kindergarden [sic}, and changing what foods can be purchased through assistance, then I would be glad to assist you.* |
| *Get the families and the children out to events that improve their health. Consider partnering with service clubs like Rotary to do this.* |
| *Parents should have to have a form filled out yearly for school nurses that not only show the child had an exam visit but that all the needed treatment was completed.* |
| *Work with willing providers to incentivize practitioners to come to Sullivan.* |
| *To request a dental certificate* |

**Table 5: Dentist suggestions for improved oral health in children**

***School Nurse Survey:*** An online survey was sent to all school nurses by the Public Health Director with an email link to participate:

*Dear School Nurses,*

*Sullivan County Public Health Services through the Rural Health Network has contracted with Health Promotion Strategies to develop a Sullivan County Oral Health Assessment. The link below will take you to a simple online survey that was developed to gather school nurse perspectives and experiences in regard to the oral health problems and status of their students. It will be extremely valuable to this effort if you would please take a few minutes to fill out the short survey. It should take you about 5 minutes. Once the Sullivan County Oral Health Assessment is completed, we will be happy to share a digital copy if you request it.* ***Please complete this brief survey before March 18.***

(The link was in the communication but is not included in this document)

Please see Appendix E for the survey instrument. As of this writing, all eight school districts have been represented in the seventeen responses received, or 85% of the individual schools.

Survey access has been kept open with a request to schools who have not participated to enter their information, even if it is after this needs assessment publication, since any late responses will continue to be useful for the Oral Health Coalition going forward. Findings from this survey follow.

All grades were represented.

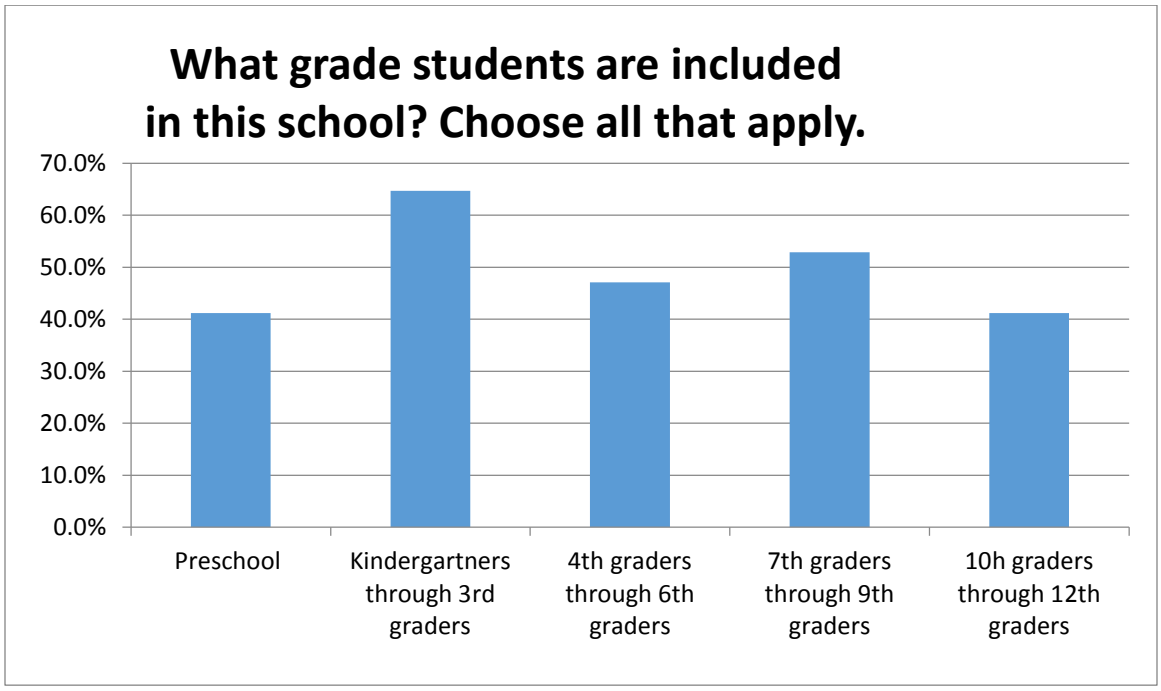



**Chart 8: Grade levels of students reflected in the school nurse survey**

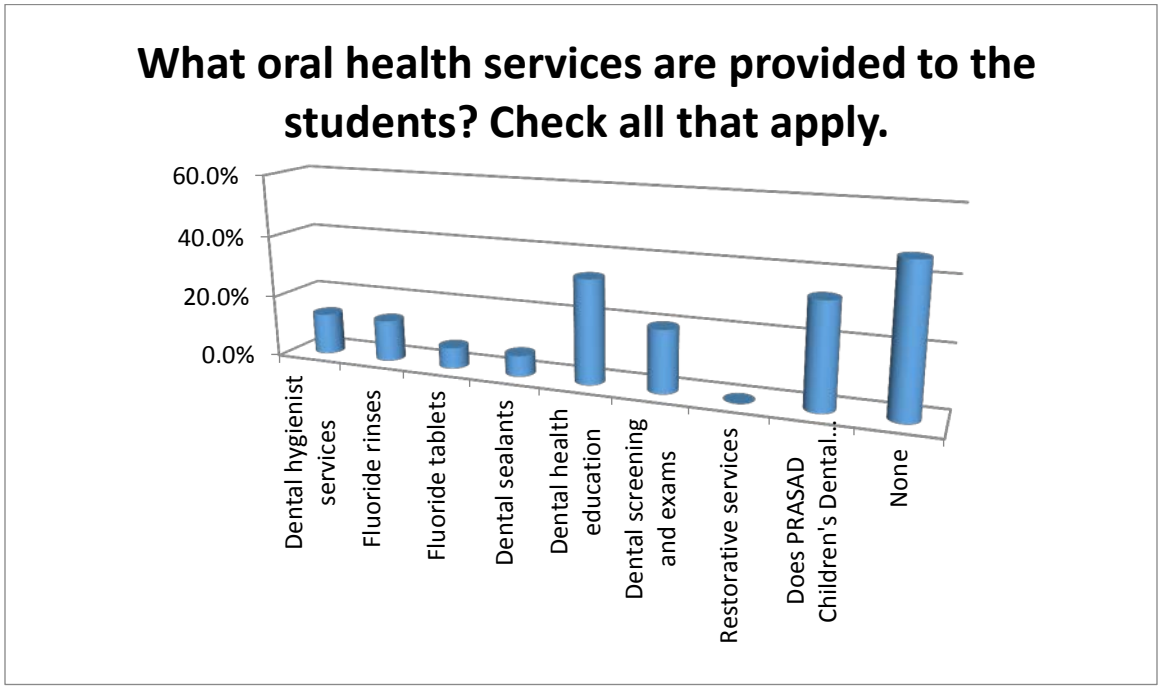



**Chart 9: School nurses answers to the available oral health services**

About 47% of the school nurses stated that there were no dental education or other services offered, while a little more than half (53 %) indicated several interventions are offered to students, through PRASAD, and/or directly. Services ranged from dental health education to direct treatment.

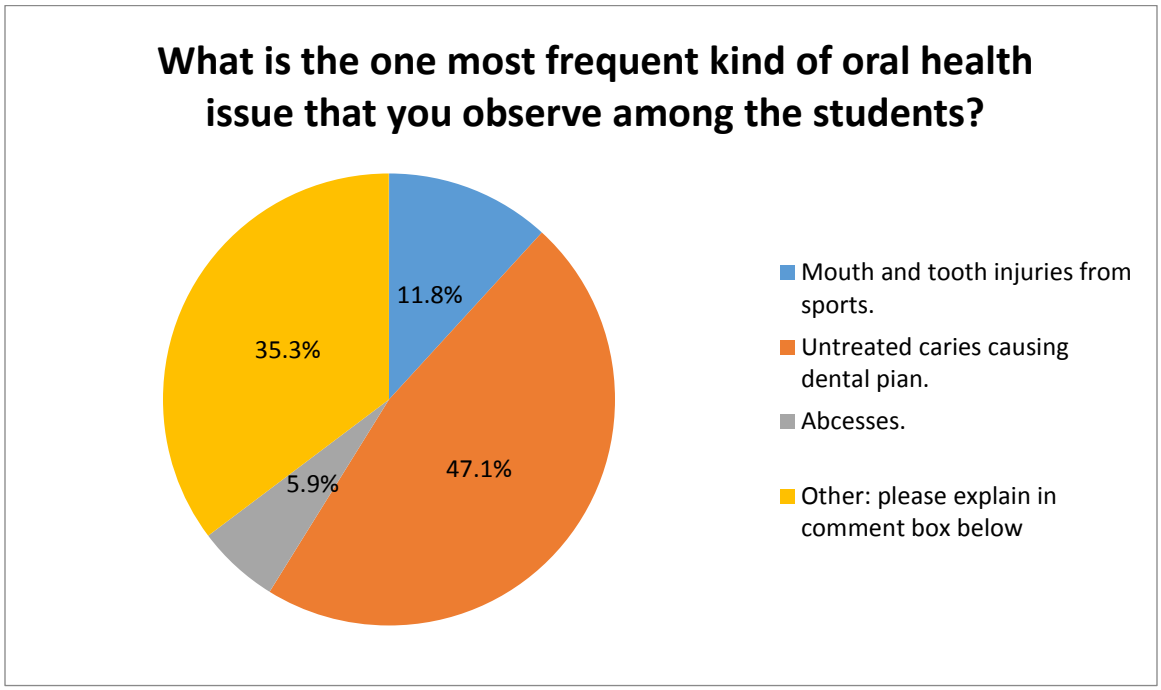



**Chart 10: Most common oral health problems seen by school nurses**

The greatest percentage of oral health problems the nurses see are dental caries and pain. "Other" comments (35.5%) in answer to this question included the following:
"Toothaches, loss of tooth, Wisdom tooth discomfort, cavities, no dental insurance, untreated sores/dental pain, poor oral hygiene leading to irritated gums; rotting teeth".
Almost 65% of the nurses said they had seen a student miss school due to dental problems or in the case of one school, dental appointments for "good reasons" (spacers, braces).

When asked what barriers students face to obtaining dental care, dental insurance and transportation were most frequently reported, as were problems with appointment follow up

(Table # 6). The first response in this table, although it did not address a barrier but quite the opposite, was enlightening and reflects the entire spectrum of income related health outcomes.

| |
|---|
| None, as a private school it is rare for oral issues to arise. Parents are very pro-active/concerned in all aspects of their child's health. If a dental issue does arise it is addressed immediately. |
| Some have insurance issues. Others parents work till after dental office is closed at jobs that doesn't give paid sick time. |
| dental insurance - being able to pay for dental services. |
| insurance and transportation issues |
| Parents not making/keeping appointments. |
| availability |
| Lack of pediatric dentists, lack of dentists who accept medicaid |
| Lack of insurance |
| Transportation and lack of dental insurance |
| dental insurance, transportation |
| Transportation and insurance. |
| Insurance & transportation |
| lack of dental insurance parents unable to take time off of work to take children to dentist |
| Parents simply not making appointments and following through. Insurance problems. |
| parents do not take on regular basis |
| Lack of parental involvement and education. Parents not returning permission slips for PRASAD. |

**Table 6: School nurses' perceptions of barriers to students obtaining dental care**

School nurses were then asked what they thought needed to happen to improve oral health at their school. This is what they said:

| |
|---|
| PRASAD could come in and demonstrate to the children the importance of dental cleaning/oral health. |
| Evening dental hours. |
| I would like to see our Dental Hygienist brought back to our school. |
| more education and more offers of dental services |
| Regular check-ups. |
| Parental and student dental health education |
| not sure |
| Education |
| Affordable insurance |
| Parental education |
| dental insurance options for those with no insurance mobile dental units in our district dental education to students |
| PRASAD come annually despite low amount of students qualifying for assistance. |
| Dental coverage & transportation |
| everyone needs dental insurance and someone needs to take the kids to the dentist |
| A "PRASAD" like kind of situation where students can be seen during the day at school (though this can be very difficult with our special needs population) OR the push to make annual (at the very least) dental visits mandatory for an exam, cleanings, etc. |
| PRASAD is great and continue offering the fluoride rinse and tablets |

**Table 7: School nurses' perceptions of what needs to happen to improve oral health**

***Publicly posted Online Survey "Oral Health in Sullivan County Children and Pregnant Women":***

An online survey designed for collecting responses about oral health experience and practices during pregnancy and childhood from six months to age eighteen years was created on a professional online survey account and the link disseminated through multiple channels. These included various Sullivan County-specific Facebook pages, emailing lists of local groups, postings on the Sullivan County Public Health and the Sullivan County Rural Health Network (RHN) websites and many of RHN member organizations' websites and Facebook pages (see survey tool in Appendix E and list of Rural Health Network members in the Appendix B)

In addition, the survey was announced widely at local meetings and a press release was sent to media outlets and published on the Sullivan County website. Because of the short amount of time available to gather responses, there are not enough results to be applied generally to the entire population, but nonetheless they are informative and a useful snapshot of dental and oral health practices and concerns of some of the county population.

In total, there were 115 surveys completed as of the time of this document. The first section of the survey contained questions that were targeted to women who had delivered a baby within the past year, or those who knew them very well, and we received 44 responses to these questions. This is approximately 5.3% of the number of women who give birth annually. Most women answering were 26-35 years of age 91% were White and 9% Black, and 73% were non-Hispanic while 27% of respondents were Hispanic (see table # 8).

| **Age** | **%** | **#** |
|---|---|---|
| Younger than 15 years | 0.0% | 0 |
| 15-17 | 2.3% | 1 |
| 18-25 | 38.6% | 17 |
| 26-35 | 43.2% | 19 |
| 36-45 | 15.9% | 7 |
| Older than 45 years | 0.0% | 0 |
| ***answered question*** | | ***44*** |

**Table 8: Maternal ages of respondents to public survey**

The second section of the survey referred to children from six months to eighteen years. Parents were asked to answer the survey for the youngest of their children. We received 78 responses to the questions in that section. This number is less than ½ of 1 percent of the population for children under eighteen years of age in the county. The largest number was in

the six - twelve year old category followed by thirteen – twenty-four months (see table # 9).

| **Age** | **%** | **#** |
|---|---|---|
| 6 months to 1 year | 5.2% | 4 |
| 13 to 24 months | 16.9% | 13 |
| 25 to 36 months | 13.0% | 10 |
| 3 - 4 years | 7.8% | 6 |
| 4 - 5 years | 9.1% | 7 |
| 6-12 years | 33.8% | 26 |
| 13-18 years | 14.3% | 11 |
| ***answered question*** | | **77** |

**Table 9: Ages of children in public oral health survey**

The race and ethnicity of the children represented in the survey answers was a higher percentage of Black and Hispanic than the percentage in Sullivan County as a whole. Blacks make up 9.1% in the county, and their percentage for the survey was 25.4%, almost triple. Hispanics according to the census are 13.6% and almost 22% were represented in the survey. This may be due to some of the diligent efforts by organizations serving specific populations to reach as many of their constituents as possible. As ethnicity and race can be tied to outcomes, this over-representation may be helpful.

| **Race** | **%** | **#** |
|---|---|---|
| Black | 25.4% | 18 |
| White | 71.8% | 51 |
| Asian Pacific Islander | 1.4% | 1 |
| American Indian or Alaskan Native | 1.4% | 1 |
| ***answered question*** | | **71** |

**Table 10: Race of children in public oral health survey**

| Ethnicity | % | Number |
|---|---|---|
| Hispanic | 21.8% | 17 |
| Non-Hispanic | 78.2% | 61 |
| ***Answered question*** | | ***78*** |

**Table 11: Ethnicity of children in public oral health survey**

Because of such small numbers, no overall conclusions about the County should be reached based solely on this survey. It is also important to note that, as with any survey, the information given cannot be verified. However, a combination of this survey along with the other tools, information and existing statistics available are helpful as a whole to gain a much better understanding of Sullivan County's oral health.

## *Here are some highlights of the public oral health survey:*

### *During pregnancy:*

Women were asked to rank their oral health during pregnancy from "poor" to "excellent". A choice for "I don't know" was included in case someone was answering for a close friend or family member (only 1 person chose this response). About 34% reported "fair" or "poor" oral health, and when asked for the reasons, the majority reported gingivitis (inflamed gums which are common in pregnancy and a health risk for preterm birth and low birth weight) and cavities. (See chart # 11).

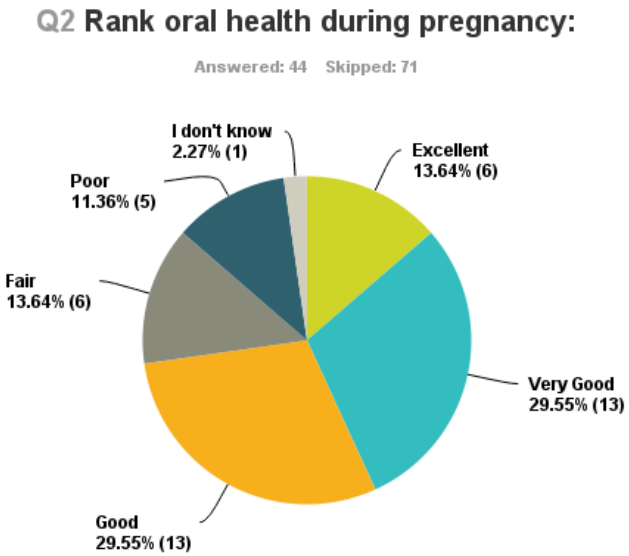



**Chart 11: How women ranked their oral health during pregnancy in the public survey**

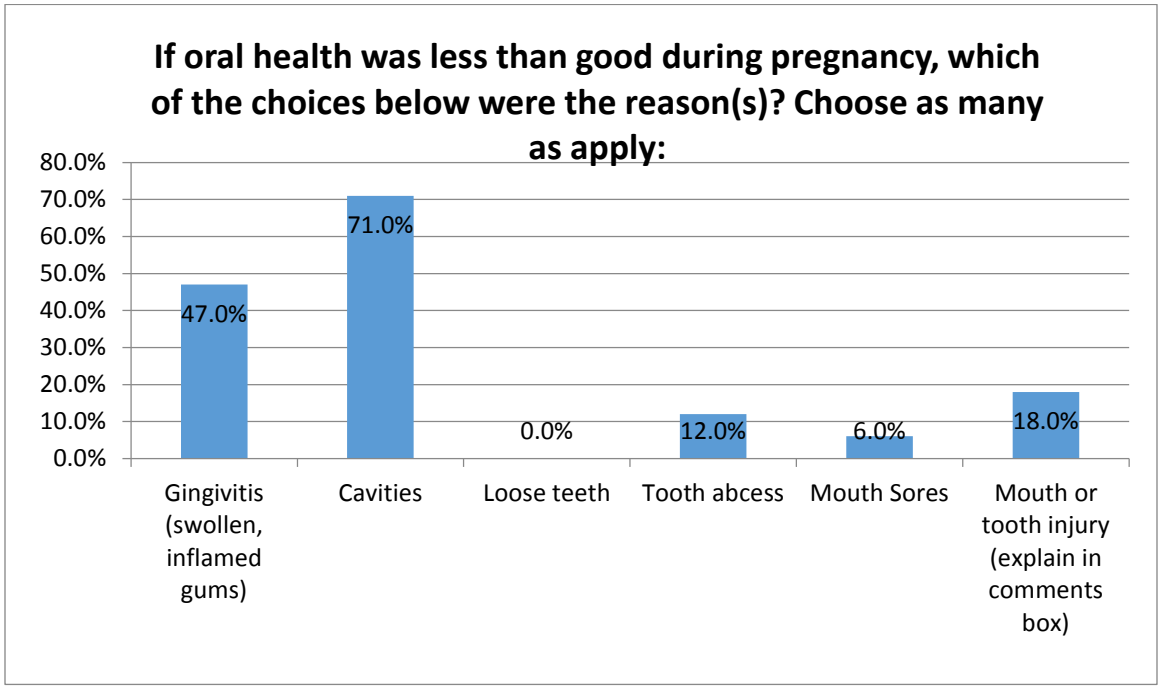



**Chart 12: Reasons reported for poor oral health during pregnancy**

Although 70.5% reported regular teeth cleanings before pregnancy, only 57% received them during pregnancy. When asked the reasons, the top four reasons were: "fearful of the dentist", tied for second were "not necessary" and "no transportation", followed by "no dental insurance".

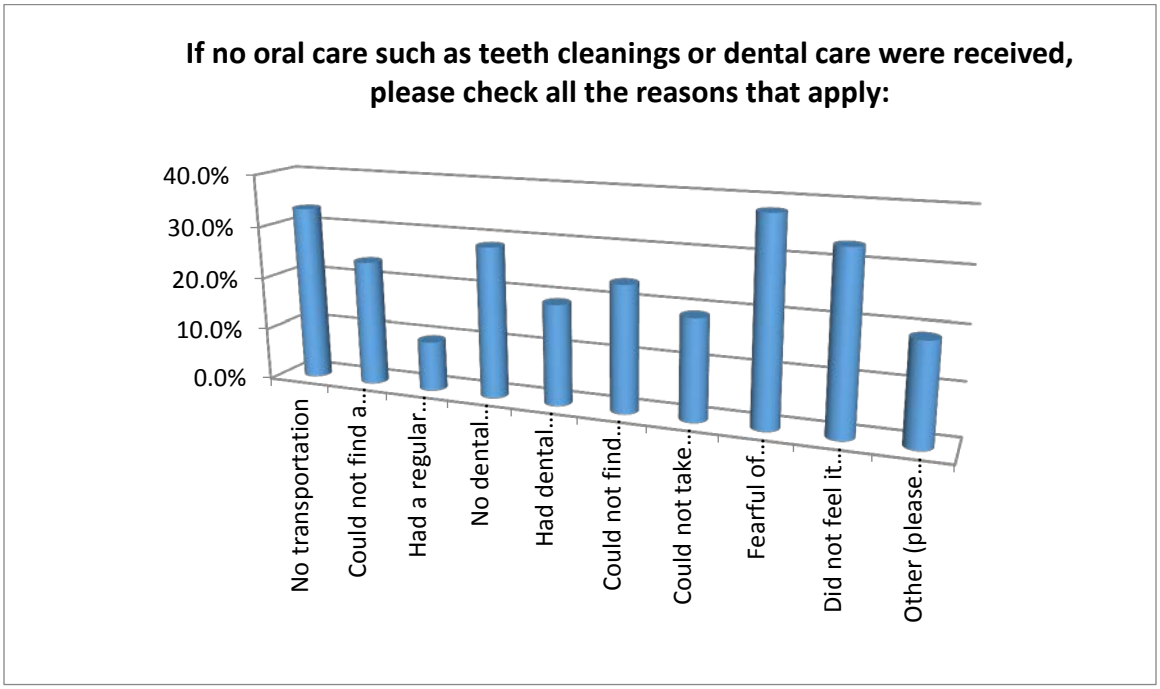



**Chart 13: Reasons why no teeth cleanings or dental care were received during pregnancy**

| If no oral care such as teeth cleanings or dental care were received, please check all the reasons that apply: | | |
|---|---|---|
| **Answer Options** | **%** | **#** |
| No transportation | 33.3% | 7 |
| Could not find a dentist who would accept a pregnant patient | 23.8% | 5 |
| Had a regular dentist but he or she would not see her while she was pregnant | 9.5% | 2 |
| No dental insurance | 28.6% | 6 |

| | | |
|---|---|---|
| Had dental insurance but could not afford co-pay or deductible | 19.0% | 4 |
| Could not find someone to babysit | 23.8% | 5 |
| Could not take time off from work | 19.0% | 4 |
| Fearful of dental office | 38.1% | 8 |
| Did not feel it was necessary | 33.3% | 7 |
| Other (please specify) | 19.0% | 4 |
| ***answered question*** | | **21** |

**Table 12: Full text of reasons and numbers why no teeth cleanings or dental care**

Almost all the respondents reported drinking one or more sweet beverages during pregnancy.

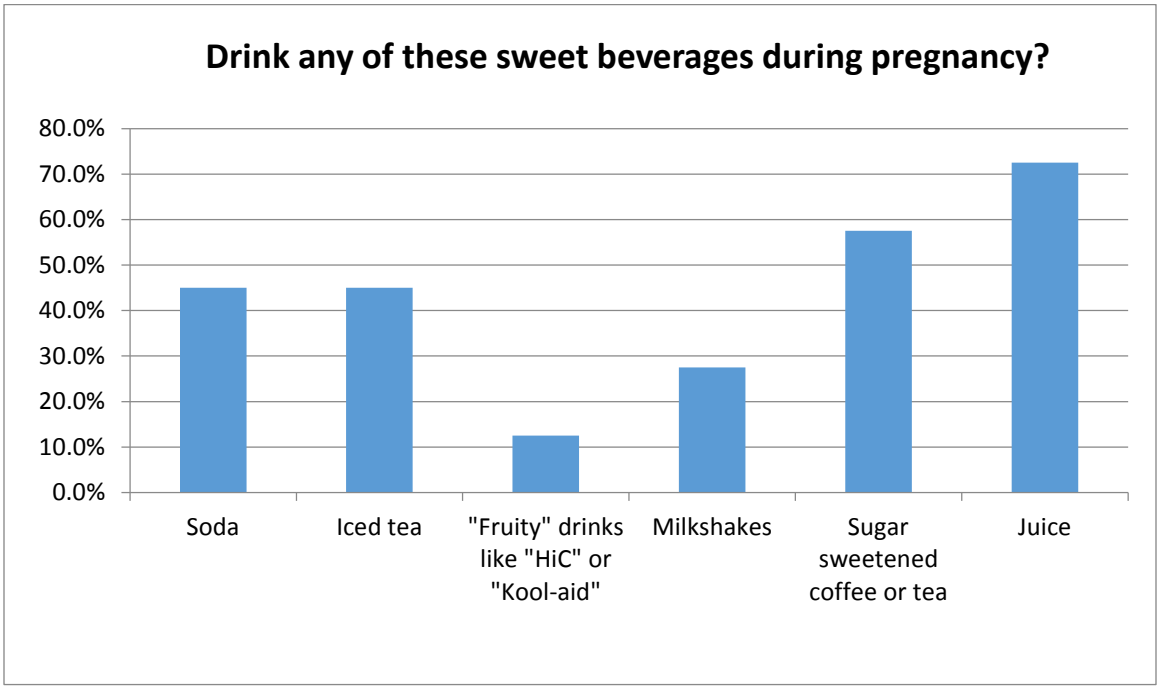



**Chart 14: Question about sweet beverages during pregnancy**

### *Questions about infants and children's oral health:*

### *Regular Dentist:*

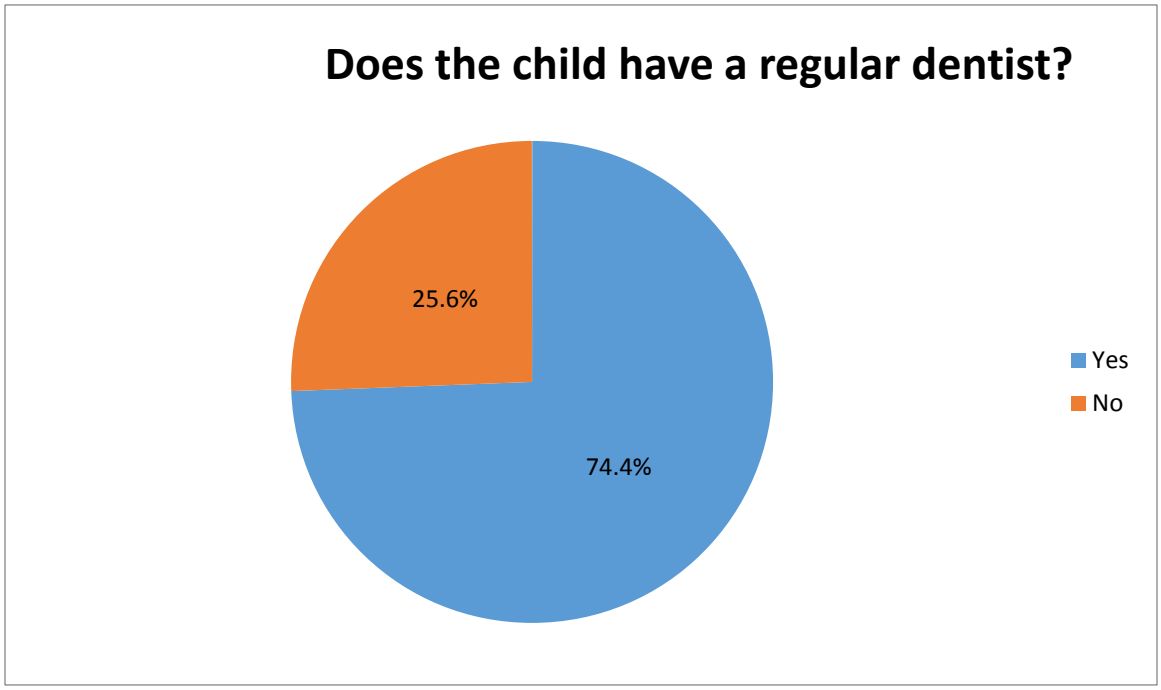



**Chart 15: Children reported to have a regular dentist in the public survey**

About 74% have a regular dentist, while almost 26% are reported not to have one.

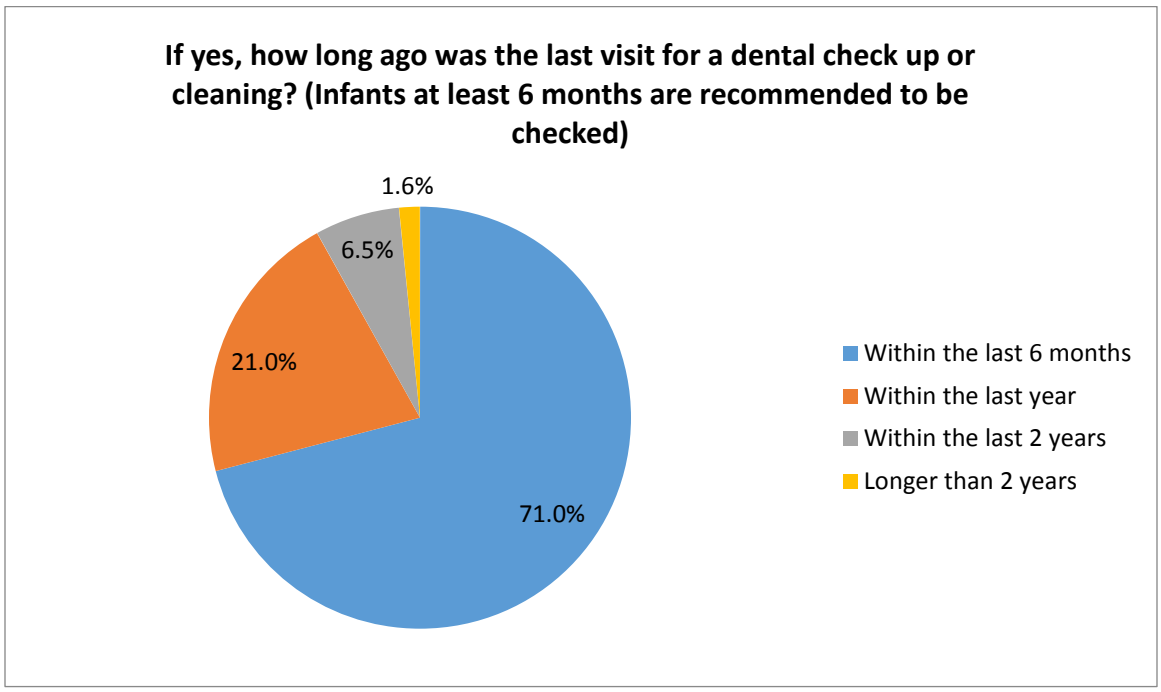



**Chart 16: Child's last visit to the dentist in public survey**

Of children who had a dentist, 71% had been to a dentist in the last 6 months.

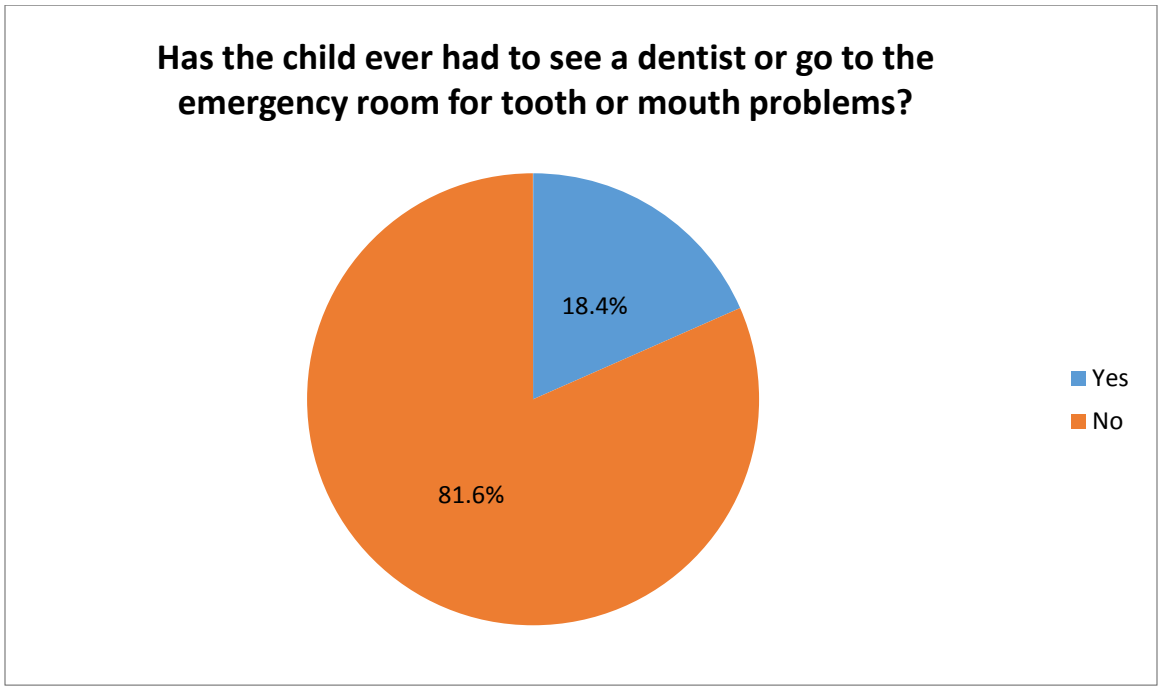



**Chart 17: Child's treatment for mouth or tooth problems in public survey**

About 18% had been to the Emergency department or to a Dentist for a problem:

Of those who had to be seen for a problem, the greatest number responded that they were seen within a 4-7 day window. The range of answers was from the same day to more than 2 weeks. The numbers are small (27) as shown in Table # 13 so caution is made against reaching a definitive conclusion at this point about the usual wait time countywide without further research.

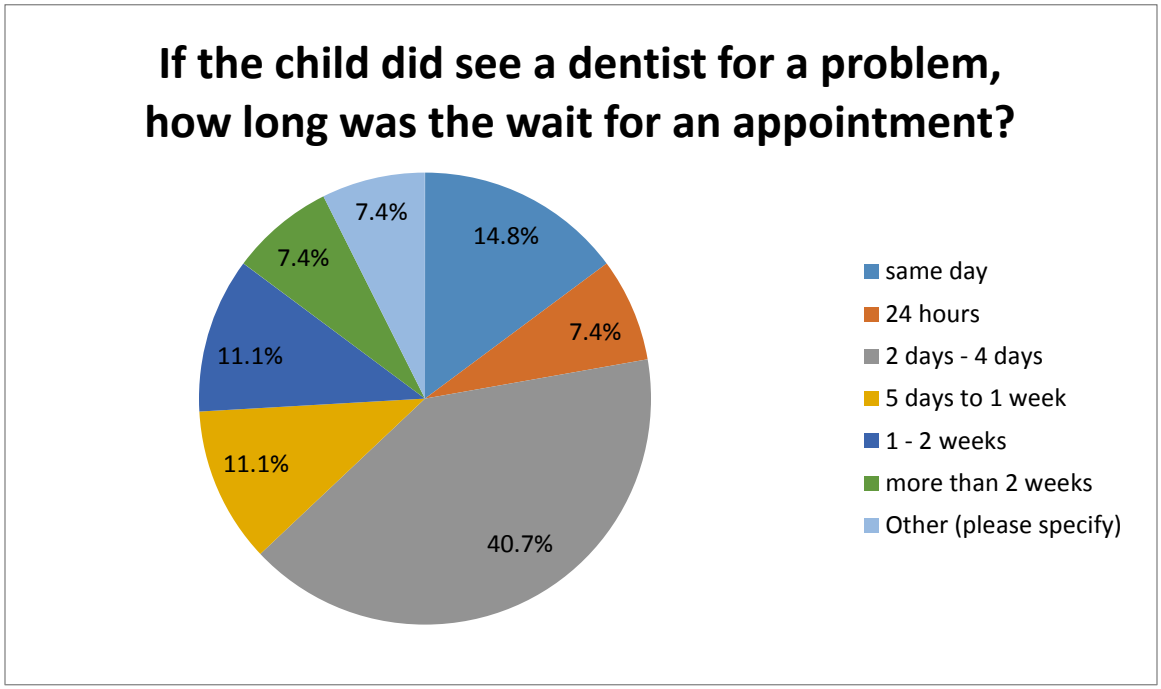



**Chart 18: Wait time for appointment for child's dental problem**

| If the child did see a dentist for a problem, how long was the wait for an appointment? | | |
|---|---|---|
| **Answer Options** | **%** | **#** |
| same day | 14.8% | 4 |
| 24 hours | 7.4% | 2 |
| 2 days - 4 days | 40.7% | 11 |
| 5 days to 1 week | 11.1% | 3 |
| 1 - 2 weeks | 11.1% | 3 |
| more than 2 weeks | 7.4% | 2 |
| Other (please specify) | 7.4% | 2 |
| ***answered question*** | | **27** |

**Table 13: Wait time for appointment for child's dental problem**

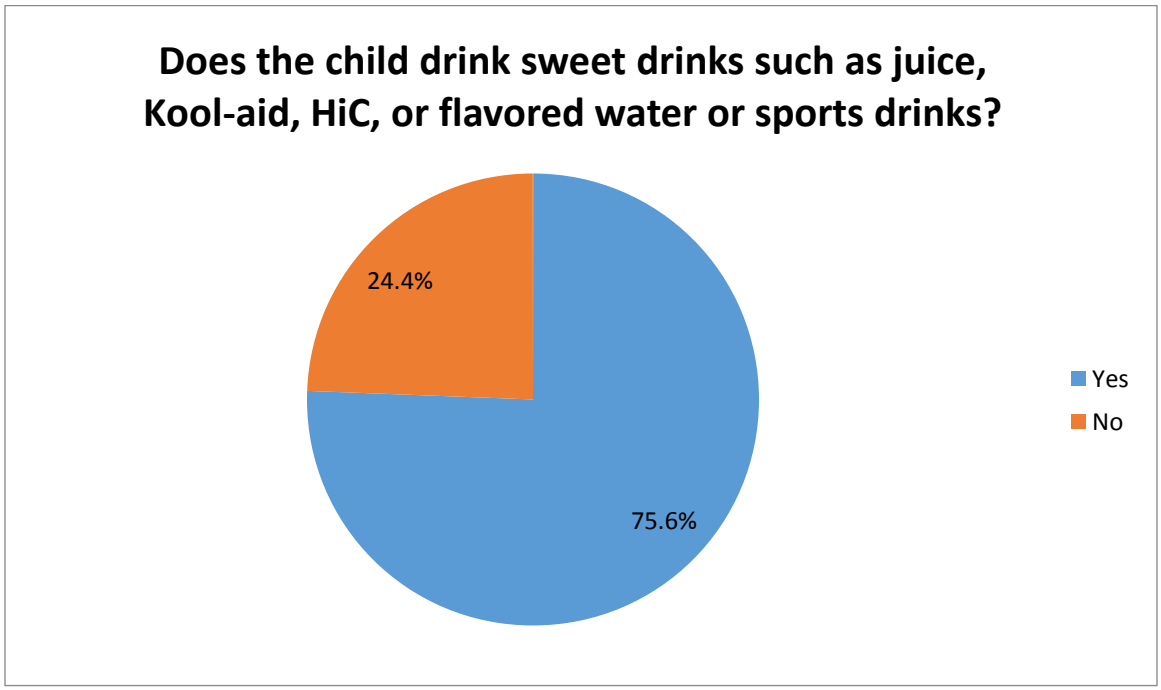



**Chart 19: Percentage of children drinking sweet beverages**

Revisiting the question about sweet drinks that was asked of the mother, most (59 out of 78) children drink sweet drinks and almost 47% drink them twice a day or more often.

| If yes, how often? | | |
|---|---|---|
| **Answer Options** | **%** | **Number** |
| Less than once a day | 29.0% | 18 |
| Once a day | 24.2% | 15 |
| Twice a day | 32.3% | 20 |
| More than twice a day | 14.5% | 9 |
| ***answered question*** | | **62** |

**Table 14: How often child drinks sweet beverages on a daily basis**

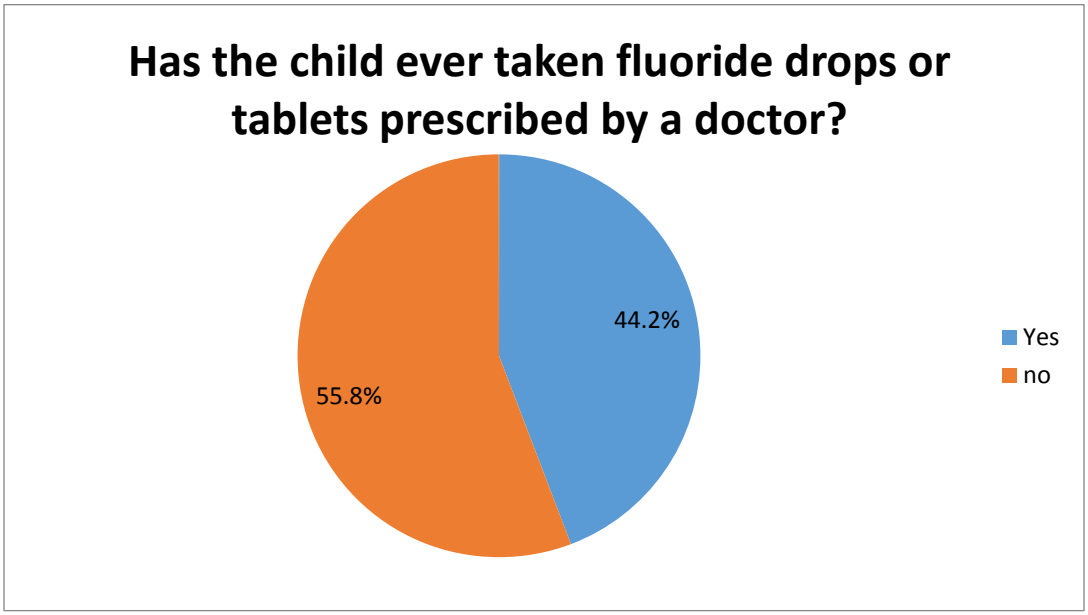



**Chart 20: Fluoride supplement experience**

Fewer than half of the children have taken fluoride prescribed by their doctor.

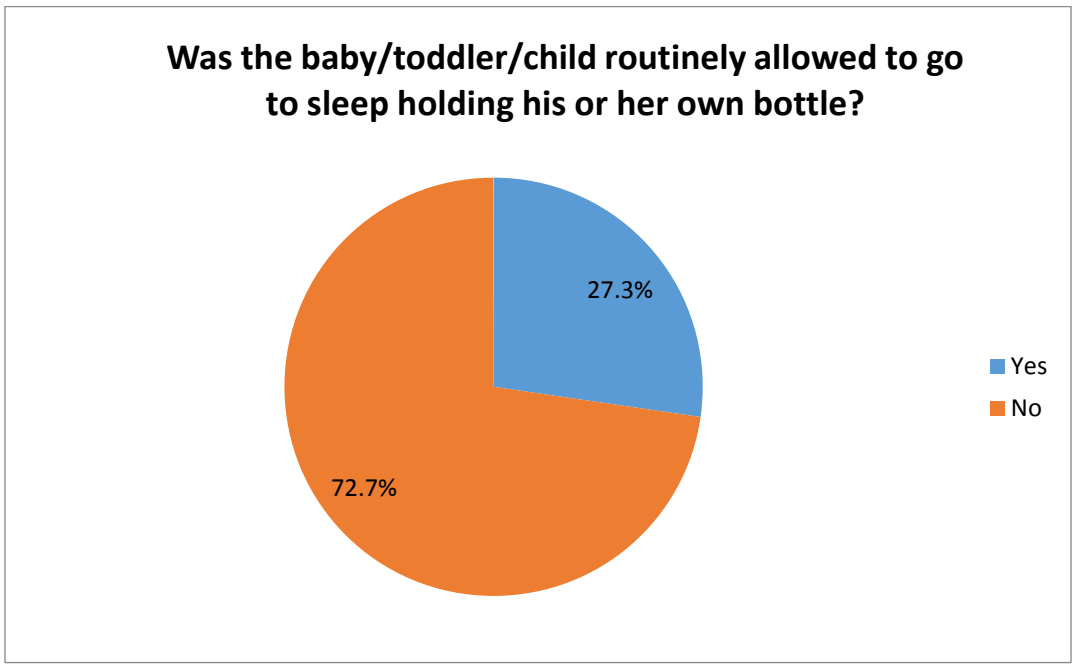



**Chart 21: Going to bed with a bottle experience**

Of 66 children, about 27% were allowed to go to bed holding their own bottle, often a precedent for baby bottle mouth, or early childhood caries (ECC).

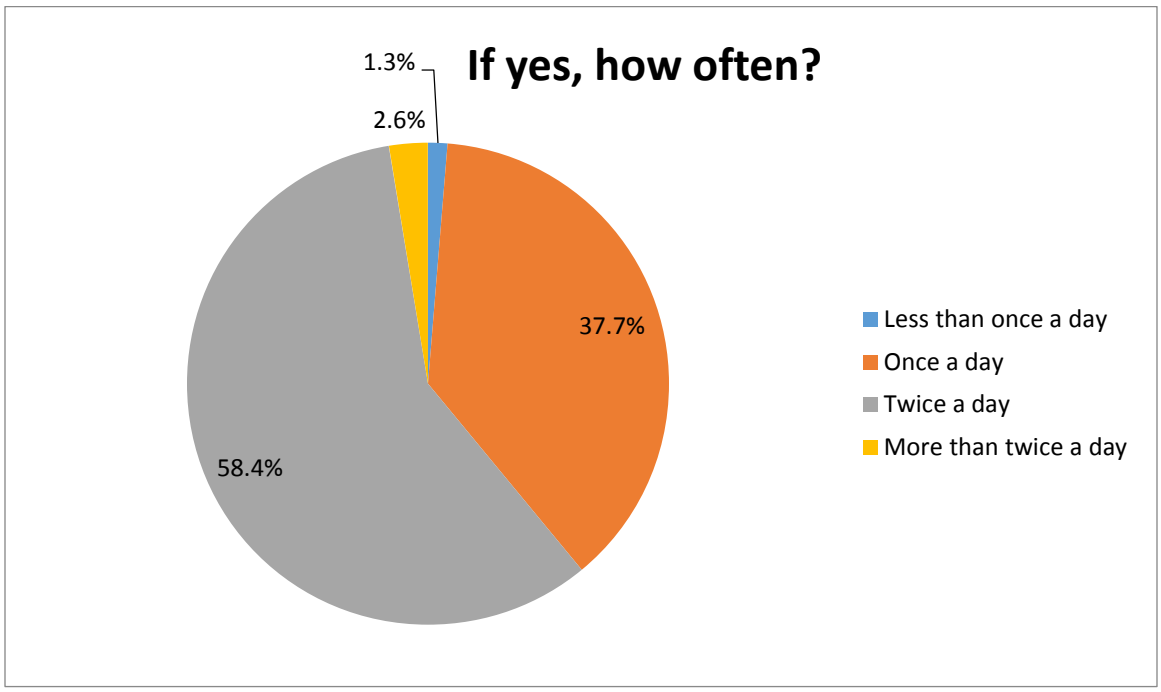



**Chart 22: Frequency of tooth brushing for children**

Ninety-seven percent (97% or 77 responses) say their children brush their teeth. This final chart from the survey, Chart # 22) shows that more than half of children in the survey were reported to brush their teeth twice daily.

### *WIC Participant interviews:*

For a period of seven week days, WIC nutritionist staff interviewed mothers who had existing appointments using two interview tools about oral health designed for the Oral Health Needs Assessment. One tool was designed to ask about oral health practices, attitudes and experience during pregnancy, and the other about their infants' and children's' oral health and oral health practices. The pregnancy questionnaire was designed to gather specific information from mothers who were less than one year postpartum in order to have oral health information relating to their entire pregnancies, and the infant/child questionnaire was designed to answer questions relating to infants no younger than six months of age up until aging out of the WIC program at age five.

In order to ensure that the WIC participants did not feel coerced to answer questions, the nutritionists were instructed to use the following script before proceeding with the interview:

> "May I ask some questions about you and/or your children's experiences with dental health? We are doing a study in the county about problems people are facing with dental care. It is voluntary to answer the questions and not answering them will not affect your WIC benefits. Your name(s) and your children's name(s) will not be used in our report. May I have your permission to ask these questions"?

If the person did not give permission, the nutritionists were instructed not to proceed with any questions. As it turned out, no one declined participation. Names were not collected on the interview forms and a unique identifier for each form was created according to the following protocol which was given to staff, kept as a footer on each form, and also explained verbally:

> "Form numbering: date in MM/DD/YY format followed by initial of interviewer, followed by number of client (every data form has a new form number). For example, If Joan Smith fills forms out for a postpartum mom and her 2 eligible WIC children on March 12, the form #s will be 03/12/16JS1, 03/12/16JS2, and 03/12/16JS3. This guarantees a unique identifier for each person and this will help with any questions later and also help eliminate duplication and error."

The questions asked in regard to pregnancy oral health experience were designed to match some of the Prenatal Risk Assessment Monitoring System (PRAMS) (https://www.health.ny.gov/statistics/prams/) questions on oral health from New York State Department of Health, in order to create a comparison to this benchmark and also to focus dental health education efforts.

**What is PRAMS? (From CDC):**

PRAMS, the Pregnancy Risk Assessment Monitoring System, is a surveillance project of the Centers for Disease Control and Prevention (CDC) and state health departments. Developed in 1987, PRAMS collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy. PRAMS surveillance currently covers about 78% of all U.S. births.

PRAMS provides data not available from other sources. These data can be used to identify groups of women and infants at high risk for health problems, to monitor changes in health status, and to measure progress towards goals in improving the health of mothers and infants. PRAMS data are used by researchers to investigate emerging issues in the field of reproductive health and by state and local governments to plan and review programs and policies aimed at reducing health problems among mothers and babies

*The questions that were asked about oral health during pregnancy were:*

For postpartum women up to one year after the baby's birth (yes or no answers for 1-5)

1. Have you ever had your teeth cleaned?
2. If yes: Did you have your teeth cleaned during your last pregnancy?
3. Were you seen by a dentist during your last pregnancy?
4. Did you need to see a dentist for a problem during your last pregnancy?
5. Do you have a dentist now?

(If No to #5) please pick the one answer which is the main or biggest reason (only one):

Transportation is a problem

No dental insurance

Dental insurance but cannot afford the copay

Fearful of the dentist

other

For the children and infants over six months of age, the questions were designed to gather information that was not otherwise available and to evaluate which dental health education topics may be best suited to implement for WIC participants and other groups.

*The questions asked about infants and children were:*

1. Does the child have a regular dentist?
2. If yes, how long ago was the last visit for a dental check up or cleaning:
   Within the last 6 months
   Within the last year
   Within the last 2 years
3. Has your child ever had to see a dentist or go to the emergency room for mouth or tooth problems?
4. Does the child brush his/her teeth or have them brushed for him or her?
5. If Yes, how often?
   Less than once a day
   Once a day
   Twice a day
   More than twice a day
6. Does your child drink sweet drinks such as juice, kool-aid, HiC or flavored water or sports drinks?
7. If Yes, how often?
   Less than once a day
   Once a day
   Twice a day
   More than twice a day
8. Has your child ever taken fluoride drops or tablets prescribed by a doctor?

In addition, the staff was asked to document age, race and ethnicity data for each respondent.

Some of the limitations with the data received were:

- There were small numbers and so findings could not be assumed to reflect the overall population of WIC participants.
- This was self-reported data. There was no way to verify accuracy of the participant's answers.
- Staff omission of some questions due to clinic pressures
- Receipt of interview forms with both "yes" and "no" answers to yes or no questions
- It was often documented that someone was Hispanic with the race field left blank.

### *Results of the questionnaires:*

### *Maternal:*

Twenty-two interviews were completed. All postpartum responders were White, 40% were ages 18-25, another 40% were 26-35, and the remainder were 36-45. About 23% were Hispanic, 75% were non-Hispanic (2 unknown).

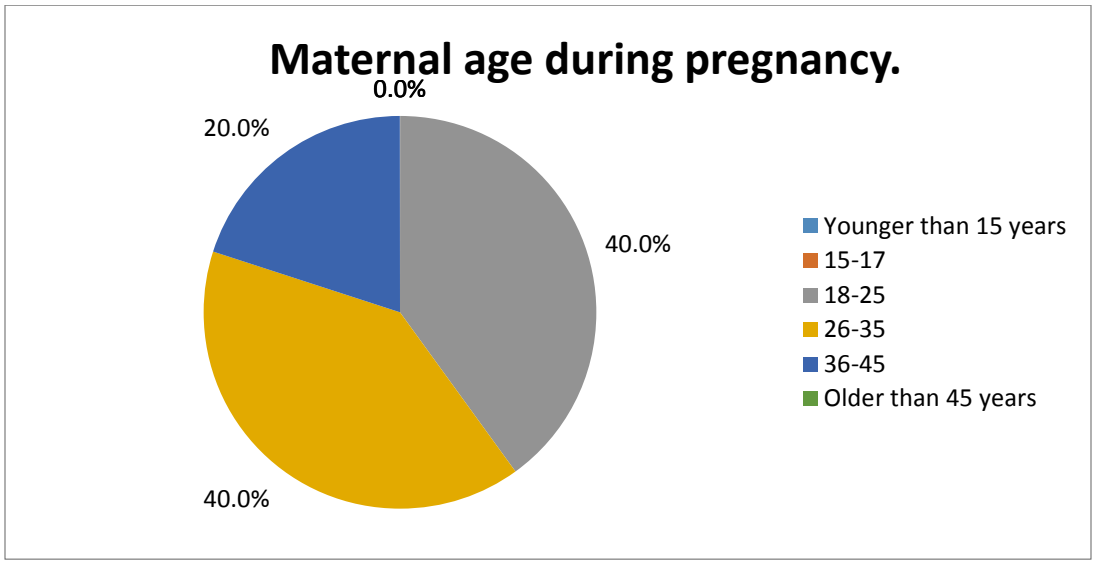



**Chart 23: WIC interview results of Maternal age during pregnancy**

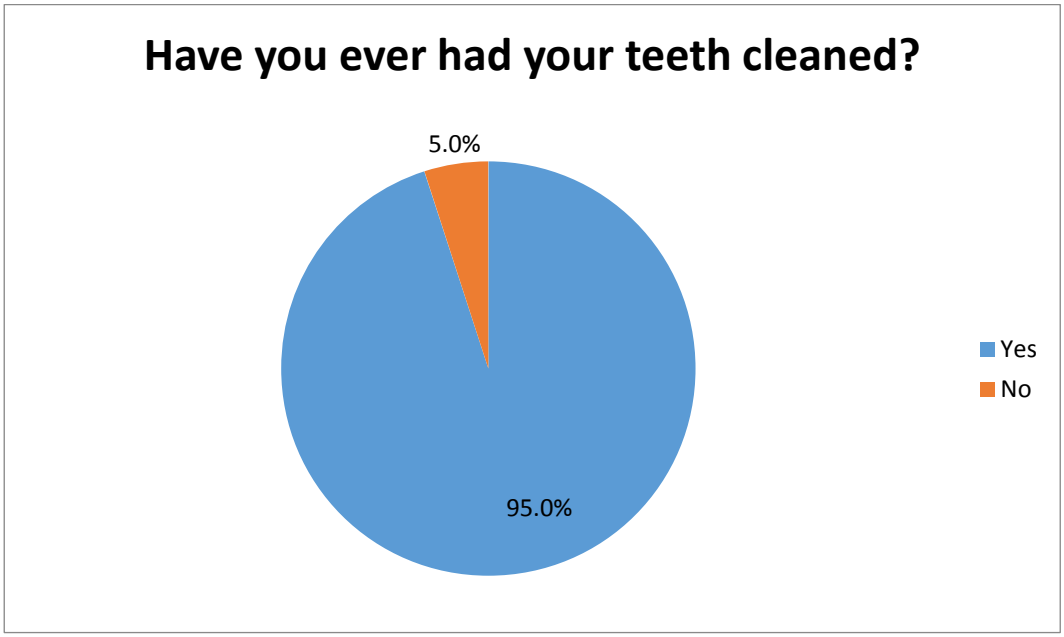



**Chart 24: Maternal WIC history of previous teeth cleanings**

Most women (95%) of those interviewed indicated that they have had their teeth cleaned at least once in their lives, as demonstrated in Chart # 24.

The answers below are shown compared to 2012 NYS PRAMs Oral Health data reports. It appears (interpret with caution because of small numbers) that of the respondents, fewer women had their teeth cleaned and more had dental problems during pregnancy than in NYS.

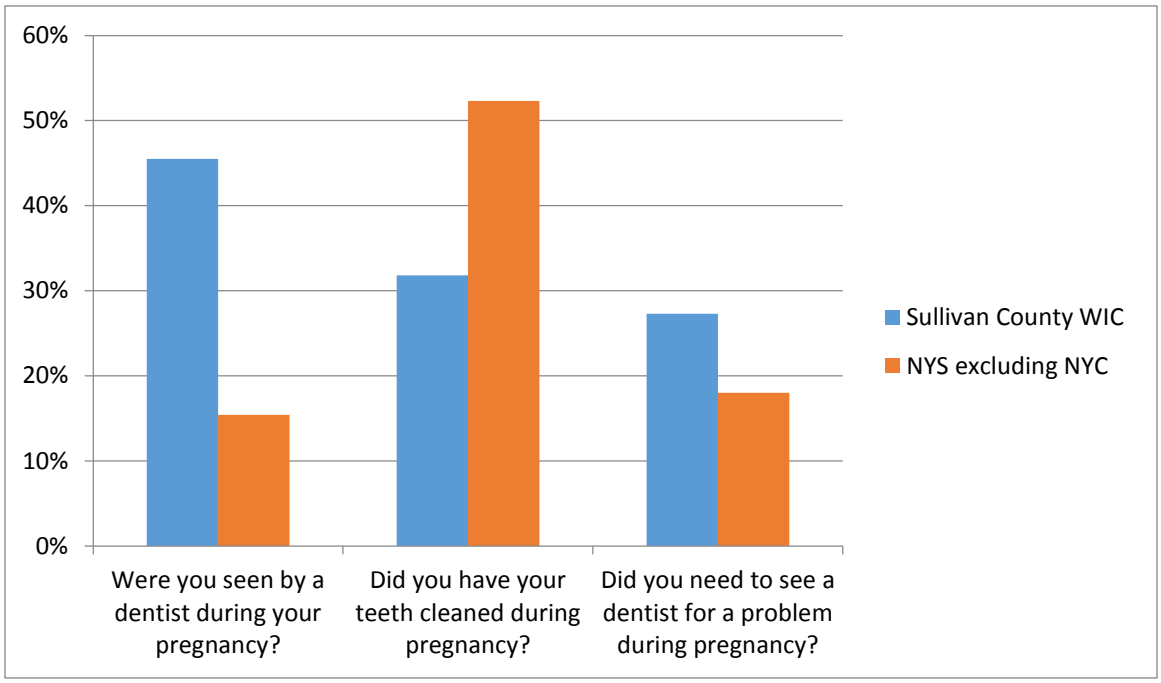



**Chart 25: Maternal WIC answers compared to NYSDOH PRAMS 2012 Oral Health Indicators**

*Chart by Health Promotion Strategies LLC*

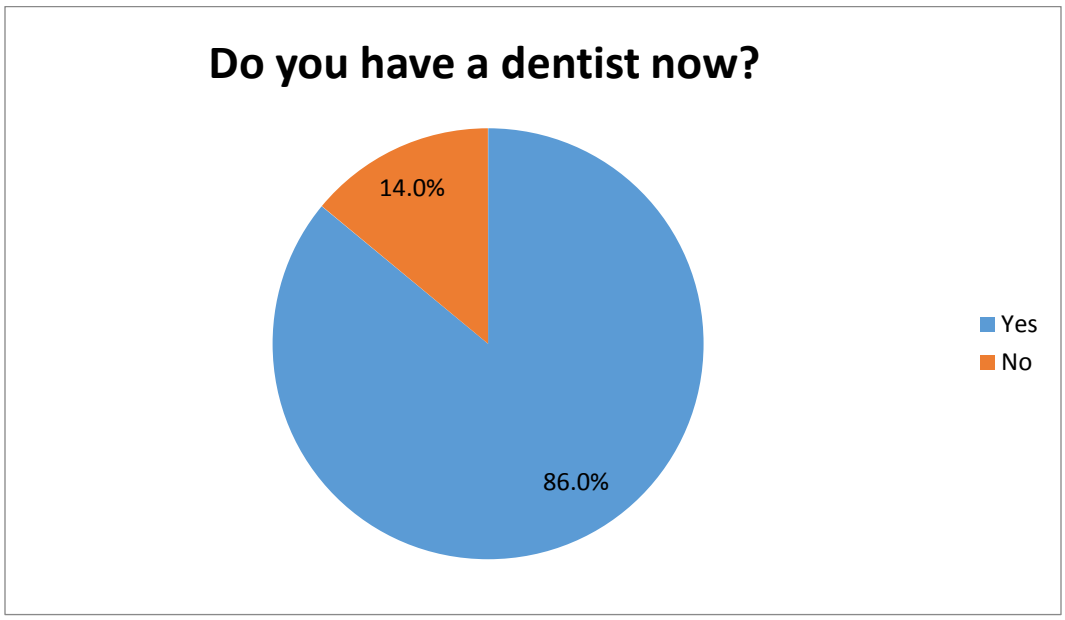



**Chart 26: Percentage of WIC maternal respondents who have a dentist now**

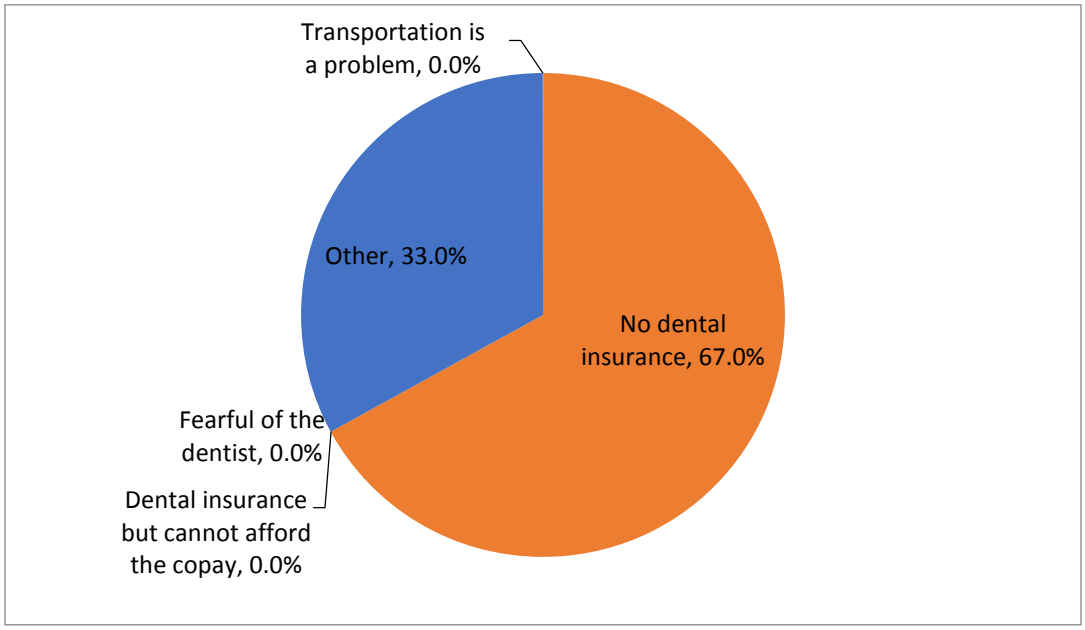



**Chart 27: Reasons why maternal WIC respondents do not have a dentist**

Only three did not have a dentist, and for two, the reason was “no dental insurance”; for the third it was “other” and she offered the explanation that she was busy.

***Infants over six months of age and children:*** Sixty-two interviews were conducted representing individual infants and children of at least six months of age up to age five years of age. What follows are charts representing the findings:

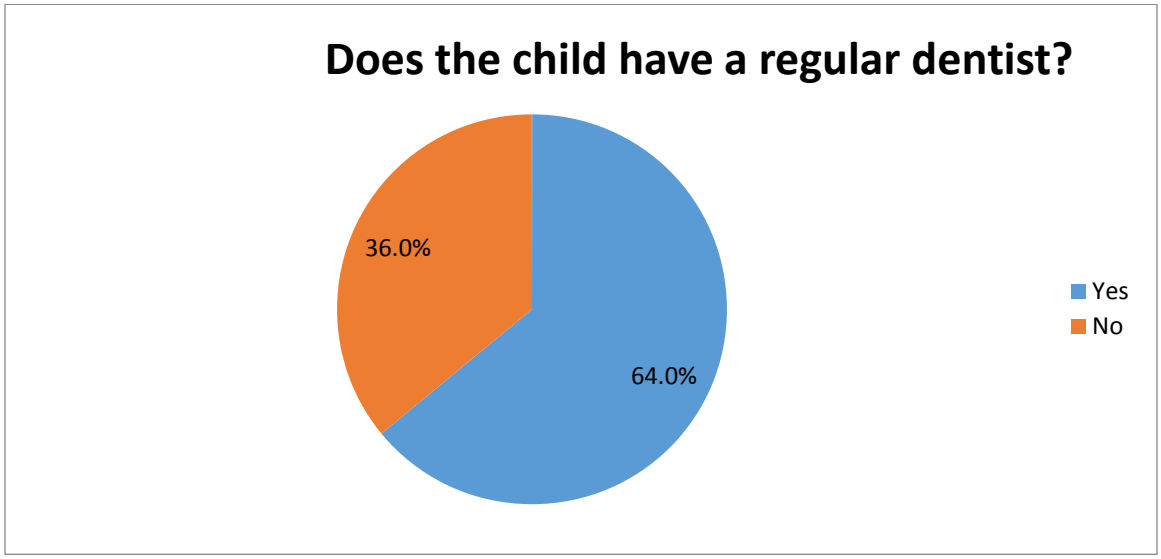



**Chart 28: Percentage of WIC children with a regular dentist**

Of the 58 who were represented, 37, or 64% were reported as having a regular dentist, compared to only 33% of the maternal WIC respondents who said that they have a regular dentist. Since the mothers answered for their children as well as themselves, it is clear that some of these same mothers do not have dentists while their children do.

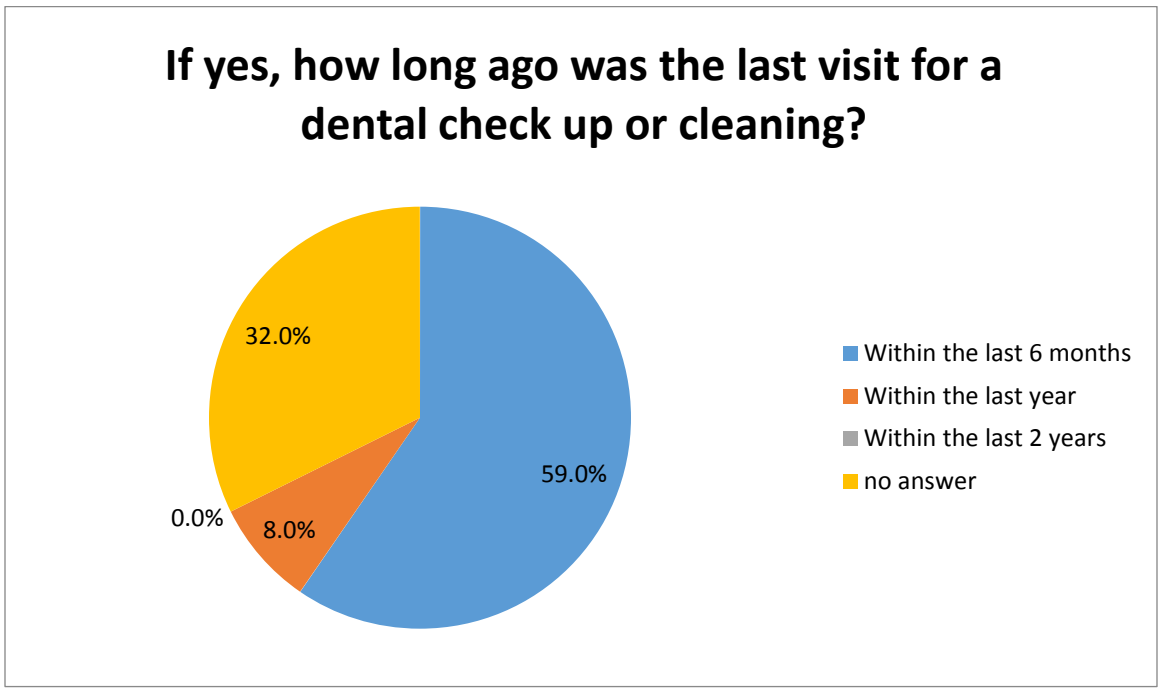



**Chart 29: Of WIC children with a dentist, last preventive care appointment**

Of those 37 children who had a dentist, more than half (22) had received preventive care within the past 6 months. However almost a third of interview forms for those who had a dentist were blank for this question and it is unknown whether this represents that these children have never been for a cleaning or checkup or because of caseload pressures, the question was not asked. Many children are now automatically assigned a dentist with their insurance plans and "having a dentist", therefore, may not necessarily translate into a visit.

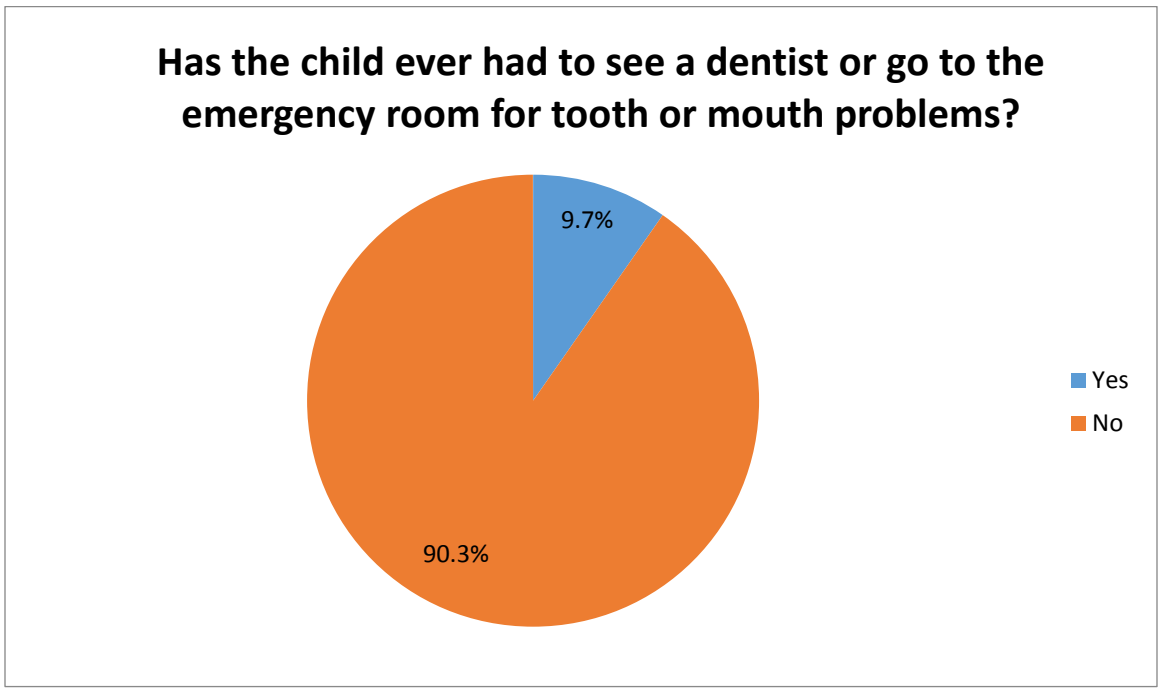



**Chart 30: WIC children who had to see a dentist or go to ER for tooth or mouth problems**

Six children out of 62 or almost 10% needed to be seen for mouth or tooth problems.

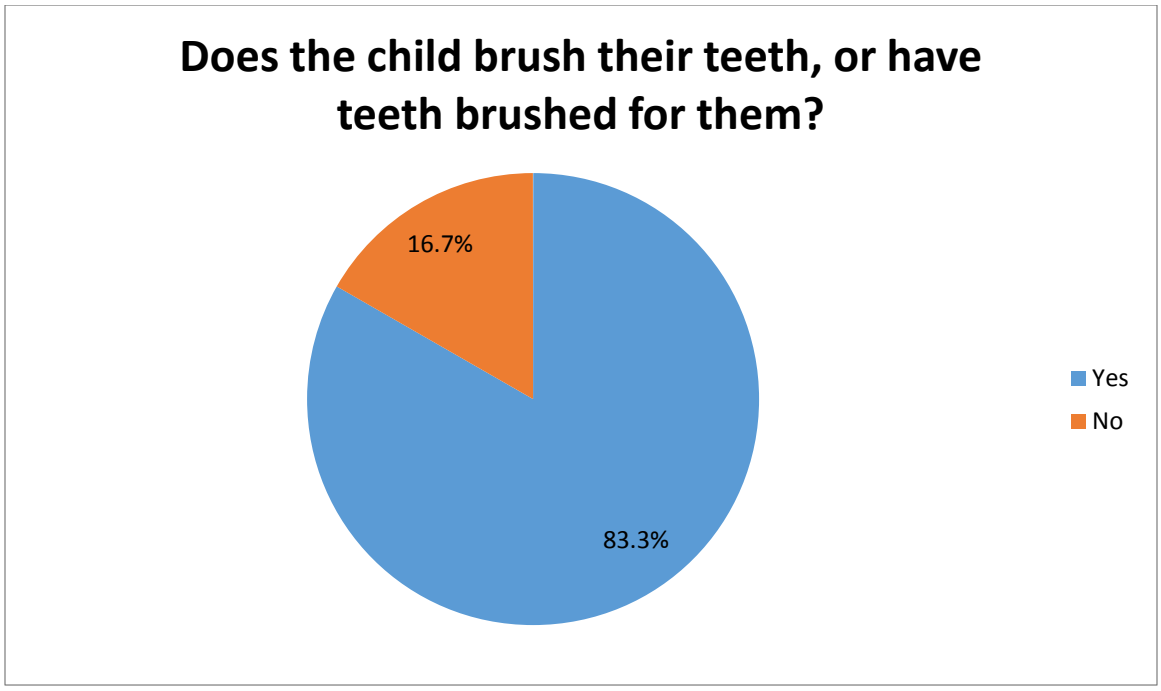



**Chart 31: Percentage of WIC children whose teeth are being brushed**

The great majority of the infants and children were reported by their moms to have their teeth brushed regularly. Fifty out of 60 moms who responded indicated that either they were brushing the child's teeth, or the child was brushing his or her teeth, often with help.

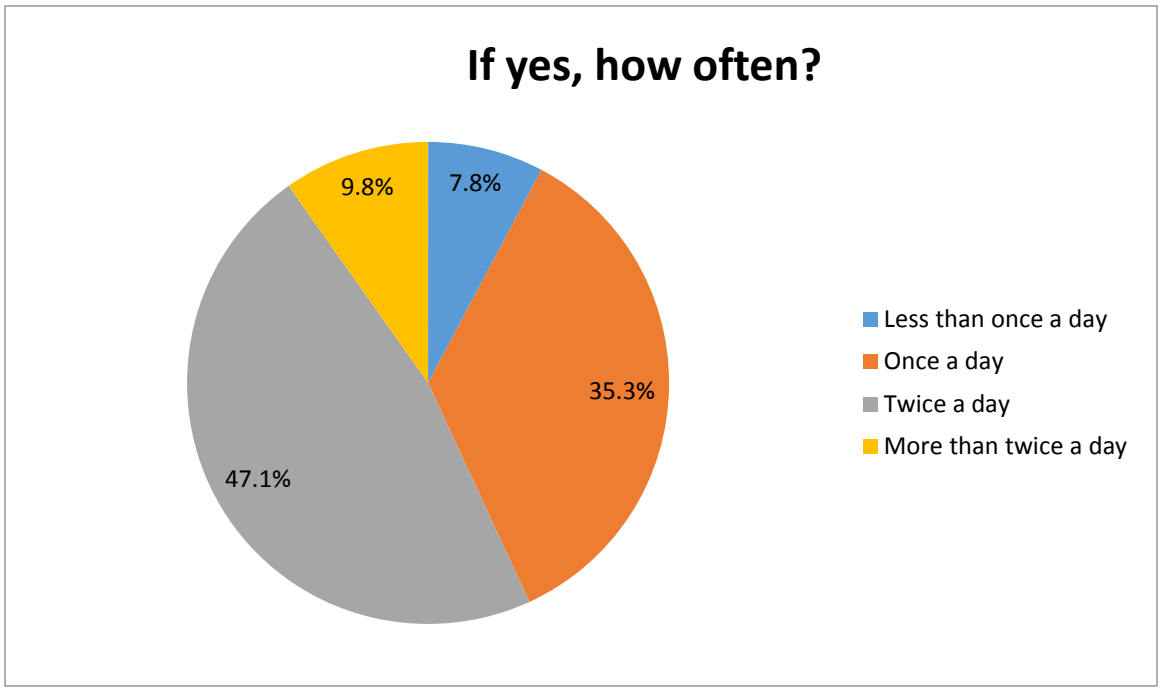



**Chart 32: Frequency of tooth brushing for WIC children**

Of the 51 responses, almost half the moms responded that their children had their teeth brushed twice daily.

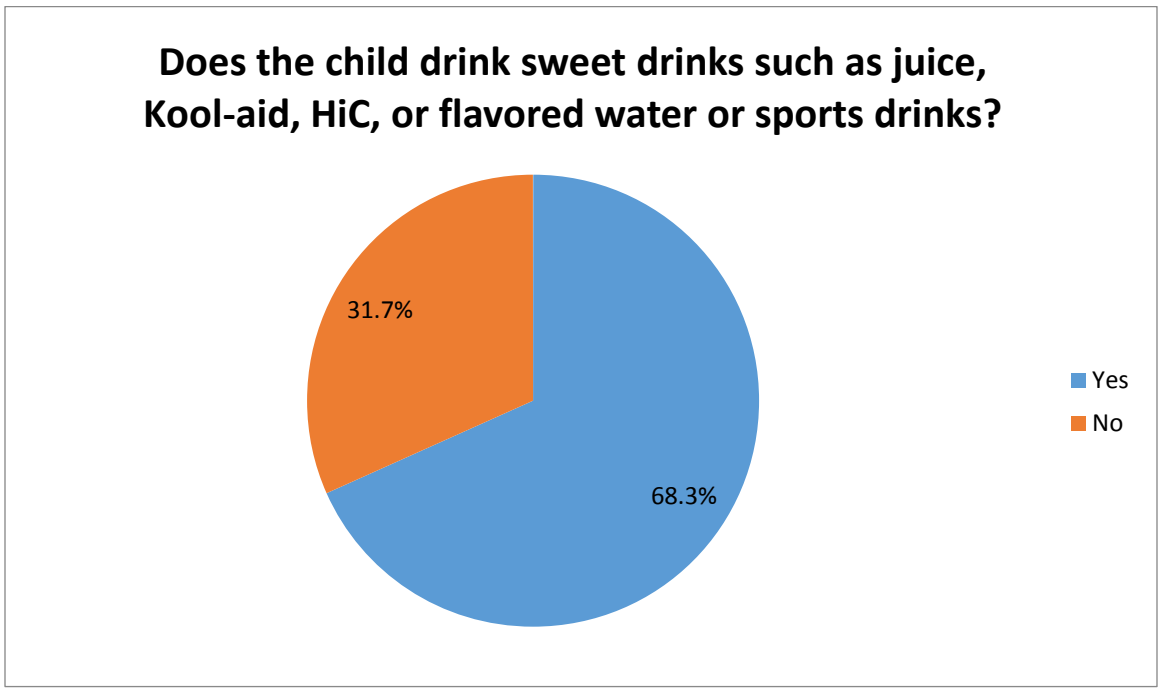



**Chart 33: Percentage of WIC children who drink sweet drinks**

Almost 1/3 of respondents out of the 60 who answered stated that their children did not drink any sweet beverages. In the public survey responses (chart # 19), only about 25% of the children were reported not to drink sweet beverages (meaning of course that 75% did).

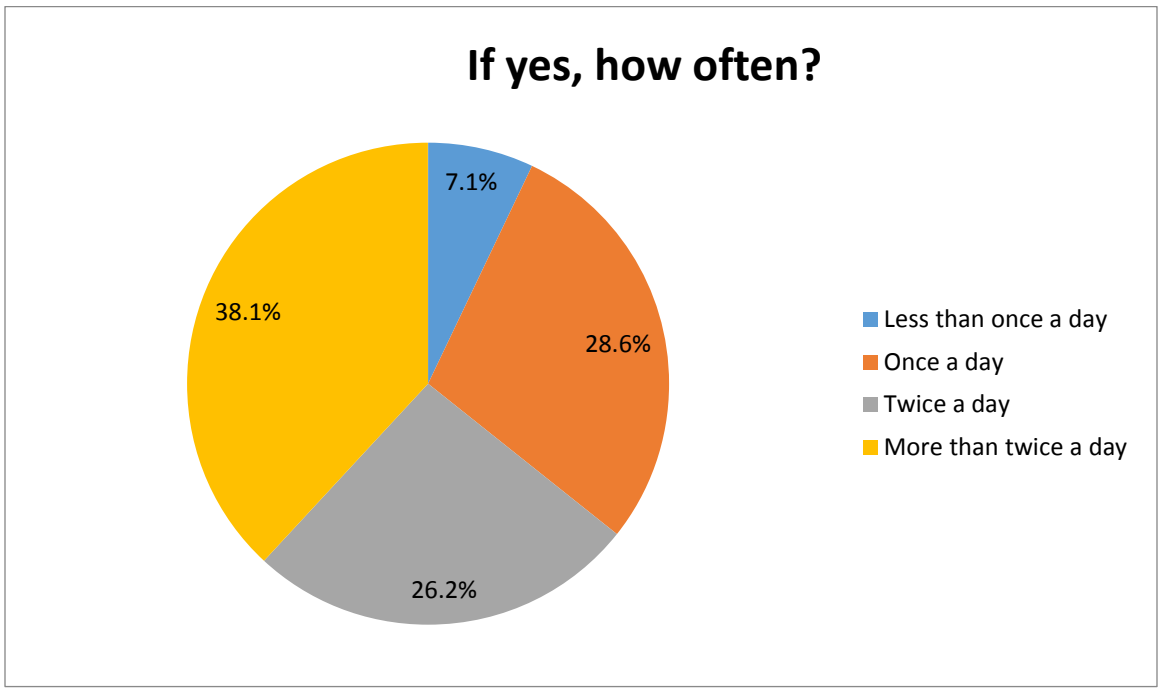



**Chart 34: Percentage of WIC children who have sweet drinks daily**

All who stated their children had sweet drinks (plus one who originally said they did not), answered this question (42). More than 64% reported that the children drink sweet drinks twice daily or more often. In the public survey, (64 answers), about 47% of that group reported that children drink sweet beverages twice a day or more often (table # 14).

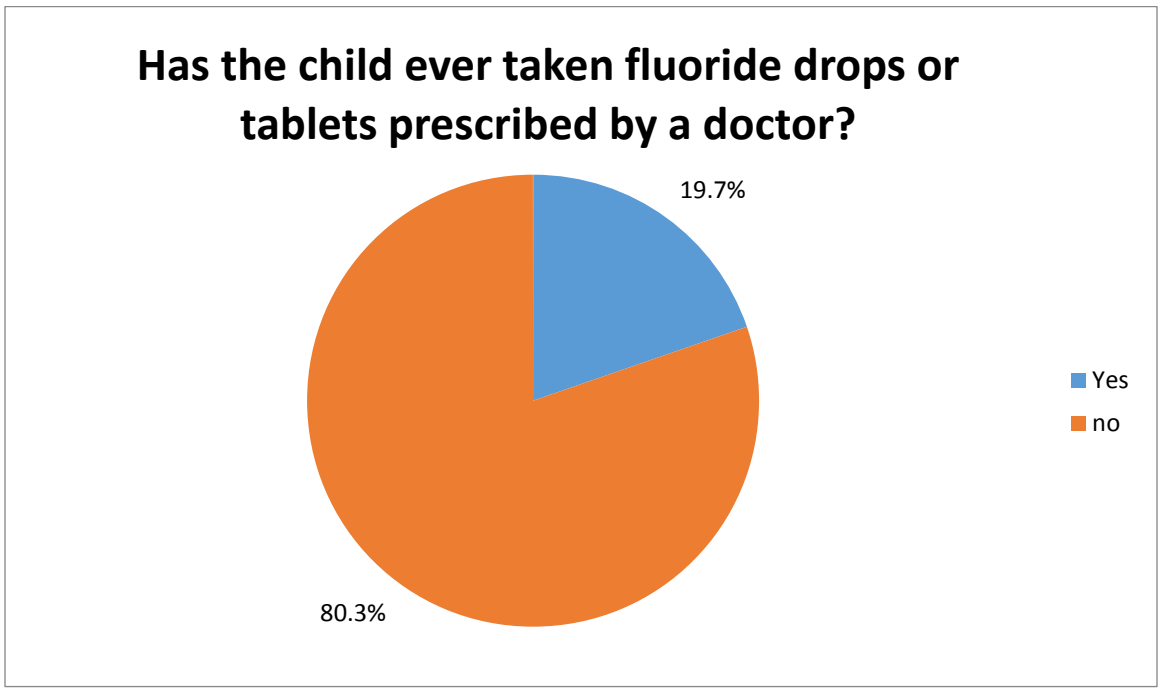



**Chart 35: WIC child experience with taking fluoride supplements**

About 80% (49) of the 61 who responded to this question indicated that their infants and children had not ever been on fluoride supplements. In the public online survey when the same question was asked, almost 56% stated their child have never been on supplemental fluoride (chart # 20).

## Focus Groups

***Summary:***

Health Promotion Strategies LLC (HPS) held two focus groups in March 2016. On March 14, a focus group with the Sullivan County Rural Health Network was held. The Rural Health Network is a group of professionals representing health and human service organizations, community based organizations and other organizations interested in assessing and improving the health status of Sullivan County residents.

On March 16, a focus group with participants in the Women, Infants, and Children's Program (WIC) was held. WIC adult participants are child bearing age women, either pregnant or with infants and/or or children up to the age of five (or all of the above) who meet eligibility criteria for this nutrition education and voucher program. Although seven families were scheduled for the focus group in conjunction with their regular WIC appointments, many were no-shows (which staff explained often occurs in WIC). Consequently, there was an intimate focus group of two WIC participants.

The findings of the focus groups rounded out the primary and secondary data gathered in this Oral Health Needs Assessment and offered a more in-depth personal perspective from the participants of both groups on the oral health issues particularly relevant to pregnant women and infants and children.

### *Focus Group 1: The Rural Health Network (RHN), March 14, 2016*

***Attendees:*** Representatives of the following organizations attended the focus group, which was held during a regularly scheduled RHN meeting. Oral health has been under the umbrella of one of RHN's three 2013-2018 prevention agenda priority health areas: to improve maternal and child health. (The other two priority areas are to improve mental health/ prevent substance abuse, and to prevent chronic disease).

- Refuah Health Center (a Federally Qualified Health Center or FQHC, serving primarily observant Jewish clients who often do not drive ). ( Refuah does not offer dental care in Sullivan County at this time)
- Catskill Regional Medical Center
- Sullivan County Office of Aging

- Maternal Infant Services Network, a regional perinatal network for Sullivan, Orange and Ulster counties
- Sullivan Renaissance
- Public Health Services (3 participants: Director, Health Educator, and the RHN Coordinator)
- Cornell Cooperative Extension of Sullivan County
- The WIC program (which is a Department in PHS)
- Hudson River Healthcare (an FQHC serving many Hispanic clients who often do not speak English). They have a dental clinic.
- Hospice of Orange and Sullivan County (by phone)
- Sullivan County BOCES - Health Careers Department (by phone)

### *Participant Demographics*

In summary, thirteen attended in addition to the facilitator from HPS; eleven in person and two conferenced in. All of the participants who attended in person were female, and via phone, one was female and one was male.

### *Introduction:*

After a presentation about the Sullivan County Oral Health Assessment project, the group was asked first for their feedback and ideas about how to better expand the reach of the survey designed for the public on the issues of oral health during childhood and pregnancy. Several useful suggestions were provided and it was also requested that all organizations represented by the members please reach out to their email list memberships as well as to post the survey link on their websites. The creation of unique collection links to track how many responses were received from each organization was offered.

### *Discussion:*

The focus group was designed to gather information from the perspective of professionals who are in contact with the persons affected by the oral health issues and challenges and/or those

who serve them. The objectives were to understand the following issues in more depth:

1. Why do the county children have twice the rate of untreated dental caries (cavities) than average for the entire state?
2. What kind of oral (dental) health problems are observed most frequently in children and/or pregnant women?
3. What are the strengths and weaknesses of the current dental care system for this population?
4. What are barriers to receiving the dental services that children or pregnant women need?
5. What are the most under- served population in the county in terms of accessing and receiving dental care and why?
6. Any other thoughts or observations.

***Objective 1:*** Why do the county children have twice the rate of untreated dental caries (cavities) than average for the entire state?

- Transportation is seen as a big issue in the county. It is difficult for parents to get their children to dentists.
- Poverty is also mentioned as a driving force. People also often do not receive sick pay for taking off time to take their children to a dentist, especially if they are paid minimum wage. They could be risking their job.
- Along with poverty, it was noted that when people are struggling with a lot of stresses in their lives, trying to figure out how to get their kids to a dentist for preventive care is very low on their priority list. Another focus group member agreed and noted it represents the Maslow's hierarchy of needs model.
- The lack of a fluoridated water supply anywhere but in the village of Monticello is perceived as a possible cause of the higher rates of untreated dental caries here. One participant had

been recently told by a Headstart professional that of children in two county Headstart programs, the children attending the one where water was fluoridated had far better dental outcomes. (She is going to try to get a hold of data from that professional, if any exists).

- There may be an entrenched culture of not feeling that dental care is important. One participant stated people think simply "It is not part of what we do". "Losing teeth [not just baby teeth] is normal. Grandma didn't take care of her teeth, neither did Mom, and so it is normal not to seek dental care for the child ".
- Another focus group participant stated that the fact that schools in the county do not require a certificate that a child has been seen by a dentist means that the child may start school with untreated caries.
- There was wide consensus that children are drinking sugary drinks, not just in glasses, but in sippy cups and bottles, where the sugar stays in contact with their teeth. They are often observed in the WIC waiting room drinking beverages with a color "that doesn't occur in nature". It was remarked that everywhere one looks in public places these days, there are sugary beverages.
- Poor nutrition in general, including in pregnant women, when dentition starts in utero.
- People see dental care as cosmetic and not an important part of overall health care.
- Some people are too fearful to go or to take their children to the dentist.

***Objective 2:*** What kind of oral (dental) health problems are observed most frequently in children and/or pregnant women?

- Children and even babies are being seen with rotted teeth.
- Higher rate of smoking in the county affecting oral health.
- Pregnant women often have severe gum problems during pregnancy and dental caries as well.

***Objective 3:*** What are the strengths and weaknesses of the current dental care system for this population?

***Strengths of current system:***

- Since the Affordable Care act added dental care, children's parents are better able to afford a dentist for the children and more children seem to be getting care.
- One participant noted that she has observed the gratitude of parents for having their child be able to go to the dentist, and have shown pictures of their children brushing their teeth and the parents are showing off the kids' beautiful smiles, so proud of their teeth. She remarked that contrary to some of what was said before, she has observed in the population her agency serves that these families incorporate dental health into their family values.
- The PRASAD Children's Dental Health Program is a great resource that goes to the schools. They have been serving pregnant women in WIC settings for 3 months also and it is very successful.

***Weaknesses of current system:***

- Even though children now have affordable dental care included in the Affordable Care Act, it is not affordable for many parents.
- The Medicaid Managed Care companies are assigning people a "dental home" but no one is explaining to people where their dentist is, how to access them and make an appointment, how to call them, etc. Several people spoke up and said that the system needs someone to lead people by the hand through all this; need the personal touch, or some humanity.
- Lack of pediatric dentists in the county, and lack of dentists overall.
- Dentists need special skills to care for children or they scare them away, and the children are traumatized after that and do not want to go back.

***Objective 4:*** *What are barriers to receiving the dental services that children or pregnant women need?*

- Pregnant women may not be able to find a dentist to accept them. Dentists often seem to hesitate to treat pregnant women.
- Even though a children's mobile dental health program is available and is a great resource, it seems many schools are not really explaining the service well to parents. During the group it was said that possibly the schools themselves do not understand it well. There was a general consensus by the group that this service needs to be marketed better. One of the focus group members stated: "we used to see them everywhere and now we never see them". Another stated, "they had to cut staff". Members of this group also noted that parents often are not complying with signing permission slips for dental care for their kids for the van. People are very supportive of this service and would like to see it used more effectively by the schools, parents, and insurance companies.
- The Managed Care companies also are unaware and do not list this mobile pediatric dental service as being located in the town locations where the schools are and only one central location for this service is listed, thus more people who could be assigned to this as a primary dental home for their children are not. The program administrator has repeatedly tried to get this fixed with no success so far.
- Again, transportation was noted as an issue for getting children to the dentist.

***Objective 5:*** *What are the most under- served populations in the county in terms of accessing and receiving dental care and why?*

- "The poor" was the first thing that was brought up because of issues of no transportation, insurance issues, not being paid to take time off to go to the dentist, and the other points highlighted earlier
- Seniors: they have no dental insurance usually; Medicare covers almost nothing for dental care

### *Objective 6: Any other thoughts or observations?*

- Pediatricians are not in general prescribing fluoride supplements. In fact, even some of the professionals in the focus group who have children stated that they had to ASK for a fluoride prescription. It was never offered.
- One participant added in regard to fluoride supplements, "If I put my Mom's hat on, I have to say that my kids HATE the taste of it and it is difficult to get them to take fluoride!"
- When parents are asked about dental care during medical exams, they often state "my children's teeth were checked at school." But it is unclear if this is true or not.

## *Focus Group 2: WIC Participants, March 16, 2016*

***Attendees:*** Mothers who had given birth within the past year, and their infants.

### *Participant Demographics:*

Two women attended. One was accompanied by an eight month old daughter and the other a four month old daughter. The mother of the eight month old also talked about her experiences with her three and six year old daughters' oral health.

### *Introduction:*

The mothers were told that the county is working on finding out more about dental health issues and asked if they would mind speaking with "a nurse" about issues they had faced (the author of this report and focus group facilitator who is, indeed a Registered Nurse). The author has often observed that people in the public often feel trusting and will open up to nurses. Both gave permission.

***Discussion:***

The time frame was limited to fifteen to thirty minutes and as such, question topics that were designed in collaboration with Oral Health Coalition members were explored. The objectives were to learn more about the following areas:

1. Any experienced barriers to obtaining dental care for county children
2. Reasons why WIC participants seek out dental care for their children
3. Are WIC participants aware that there is a link between oral health and overall health?
4. The understanding of what "healthy teeth" means in babies and children
5. The understanding of causes of dental caries in children

Although the intention because of the short time frame was to focus on infant/child oral health, the oral health problems that these two young mothers had endured during and shortly after their pregnancies inevitably led to additional exploration of these concerns as well.

***Objective 1:*** *Any experienced barriers to obtaining dental care for county children*:

The mother with the three and six year old children stated she did not have any barrier. She was able to have Medicaid transportation and a dentist who saw the children and accepted her Medicaid Managed Care Plan. She was also satisfied with the dental care that her children received. However, in regard to this same young mom , even though using the same dental practice as her children (a multi-state dental franchise with many dentists), she was denied care during pregnancy even as she tried to get help for breaking teeth. She was told that they cannot take x-rays or give her any treatment because of her pregnancy. This young woman visibly avoids smiling because all of her upper teeth in the front are very unsightly; completely rotted and broken. She complained that her boss and co-workers suggested more than once that she fix her teeth. She took great offence at what she perceived as criticism. She felt they did not like to look at her. She has been told all her teeth need to be pulled and she will have to have dentures. She has an appointment in one week to start this process.

The other mom in the group also had a tooth problem during pregnancy and was told to wait for care until after the delivery, at which time she had an extraction.

***Objective 2:*** *Reasons why WIC participants seek out dental care for their children*

Both moms would seek out care for any tooth problems like pain or tooth decay, and the mom with the two older children had been taking them for regular checkups and cleanings after having an experience with baby bottle mouth with her three year old who had to have an extraction. The child had a very bad experience because the staff would not permit the mother to stay with the child. Now the child is tremendously fearful at every visit and the mom has to hold her hand throughout each visit.

The mom with the four month old has been taking to heart the training received in WIC and is wiping down the baby's gums regularly. Her own experience with having an extraction postpartum as well as seeing her nephew's terrible dental problems has convinced her to be proactive. (She shared that the mother of the nephew is a heroin addict and has lost custody, but the person who has custody does not care for her own teeth, has full dentures in her fifties. and is not caring for the nephew's teeth either). The mom was not aware that fifties is young to have full dentures.

***Objective 3:*** *Are WIC participants aware that there is a link between oral health and overall health?*

Both were aware that there was a connection, but they were vague as to what the connection actually was and what kind of health consequences could happen from poor oral health.

***Objective 4:*** *The understanding of what "healthy teeth" means in babies and children*

Having no cavities was the understanding.

***Objective 5:*** *The understanding of causes of dental caries in children*

Both moms stated very clearly that "sugar" is the cause of dental caries, but were unaware about the contagious nature of mouth bacteria. Both seemed very committed to oral health for their children. In spite of that, the same mother who needs dentures and experienced baby bottle mouth decay in her three year old, came into the clinic with her eight month old propping a baby bottle, and left her in her baby seat holding the bottle. This seems to either show a disconnect between her stated and actual commitment to her child's oral health, or probably more likely, a lack of real understanding about at least one of the causes of dental caries in young children, even though she has already had a child who needed an extraction at age three for baby bottle mouth).

## Recommendations going forward:

1. Expansion of the Oral Health Coalition: The Oral Health Coalition has early childhood education, WIC, pediatric dentistry in the form of the school based health center (PRASAD CDHP Inc), oral surgery, dental hygienists, Public Health Services, and nutrition education (Cornell Cooperative) at the table already; all critical partners in this effort. The Coalition may want to consider including additional professionals as well as laypeople who are either impacted by the problem and/or have skills and opportunity to impact change in their professions or affiliations. For example, based on local statistics as well as professional guidelines, some additional partners to consider include:
    a. All FQHC and Article 28s providing dental services

b. Private practice dentists who have an interest in solving this problem
c. Pediatricians who may have the opportunity to champion change within their profession: for example to encourage training for pediatricians and the subsequent implementation of oral health screenings, dental health education, fluoride varnish applications, and dental referrals as indicated, at routine visits
d. Obstetricians who similarly, may champion training for obstetricians followed by oral health screenings, education and dental referrals at routine prenatal visits
e. Epidemiologists who can create relevant local primary data collection and analysis to augment what is provided by NYSDOH (for example, actual dentist to population ratios in sub-county areas)
f. School nurses who are intimately impacted by the problem: particularly those who have a high level of concern and have begun to create proactive change. Two school nurses have expressed a desire to be involved in the coalition during the survey collection, and one is "possibly" interested
g. Emergency room representation, as demonstrated, there are fairly large numbers of residents showing up for dental emergencies
h. Homeless services : The homeless, as mentioned before, are very impacted
i. Community residents reflecting the makeup and special populations of the county to help create neighborhood based solutions and invite in other concerned community partners to their efforts
j. Medicaid Managed Care enrollers in order to help solve the problem of Medicaid Managed Care enrollees not understanding how to access care
k. Educators
l. Others, as the coalition identifies

2. Consider providing practitioner education to pediatricians and obstetricians or referrals to existing oral health education modules. This could be especially effective when done by champions in their own professions (see 1.c. and 1.d.). For examples, see Appendix F

and NYSDOH Training Materials page at:

https://www.health.ny.gov/prevention/dental/child_oral_health_fluoride_varnish_for_hcp.htm

3. Explore virtual meeting platforms as a way to increase collaboration especially as the coalition expands to partners with little time to travel to a meeting.

4. Partner with affiliates and the media to ensure people with no resources understand where they can access dental care.

5. Increase public health's community dental health education

6. Encourage members of the Oral Health Coalition, dentists and dental hygienists to apply to join various local boards so that their perspective, expert experience and education can become institutionalized in community and government planning

7. Partner with schools to explore how the School Based Health Center can be better understood and utilized by both schools and parents

8. Collaborate on policies requiring dental certificates for school entrance annually

9. Work with Catskill Hudson Area Health Education Council (CHAHEC) to promote entry into dental professions. The dentist shortage is anticipated to become worse:

    a. "The nation's capacity to provide care that is accessible and acceptable to address the oral health needs and wants of Americans in the next century is challenged by numerous factors. Among them are concerns about a declining dentist-to-population ratio, an inequitable distribution of oral health care providers, a low number of underrepresented minorities applying to dental schools, the effects of the cost of dental education and graduation debt on decisions to pursue a career in dentistry, the type and location of practice upon graduation, current and expected shortages in personnel for dental school faculties and oral health research, and an evolving curriculum with an ever-expanding knowledge base."
    http://www.nidcr.nih.gov/DataStatistics/SurgeonGeneral/sgr/chap9.htm

10. Explore the feasibility of requesting DPHSA status for under-served *portions* of the county

# APPENDIX A: References

## Reference Sites for more information:

**Census figures (Sullivan County):**
http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml#

**The cost effectiveness of prevention:**

NYSDOH Prevention Agenda:
http://www.health.ny.gov/prevention/prevention_agenda/return_on_investment.htm

Trust for America's Health (TFAH): Prevention for a Healthier America: Investments in Disease Prevention Yield Significant Savings, Stronger Communities (2008):
http://healthyamericans.org/reports/prevention08/

Agency for Healthcare Research and Quality (AHRQ); Healthcare Cost and Utilization Project; November 2012; *Emergency Department Visits for Dental Related Conditions*, 2009; Krystle Seu, M.H.A., Kendall K. Hall, M.D., M.S, Ernest Moy, M.D.; https://www.hcup-us.ahrq.gov/reports/statbriefs/sb143.pdf

Children's Dental Health Project; *Cost Effectiveness of Preventive Dental Services: Preventive Dental Interventions Reduce Disease Burden and Create Savings;*
*http://www.cdc.gov/OralHealth/publications/resources/burdenbook/pdfs/CDHP_policy_brief.pdf*

*Cost-effectiveness analysis of a school-based dental sealant program for low-socioeconomic-status children: a practice-based report*. J Health Care for the Poor and Underserved. 2002;13(1):38-48.)

Dasanayake AP, Li Y, Kirk K, Bronstein J, Childers NK. *Restorative cost savings related to dental sealants in Alabama Medicaid children.* Pediatric Dentistry 2003; 25(6):572-576.

E. Pettinato, M. Webb and S.N. Seale, *A comparison of Medicaid reimbursement for nondefinitive pediatric dental treatment in the emergency room versus periodic preventive care,* Pediatric Dentistry 22 (2000): 463-468; C.N.

Pew Children's Dental Campaign Issue Brief Feb. 2012 *; A Costly Dental Destination: Hospital Care Means States Pay Dearly;* http://www.pewtrusts.org/~/media/assets/2012/01/16/a-costly-dental-destination.pdf)

**Child and Maternal Oral Health:**

American Academy of Family Practitioners: Offering Oral Health Services in your Office: http://www.aafp.org/fpm/2014/0700/p21.pdf

American Academy of Pediatric Dentistry; *Early Childhood Caries; www.aapd.org ; accessed February 2016*

American Academy of Pediatrics: Campaign for Dental Health: *A Perfect Smile Comes at a Cost: How Poverty and Food Insecurity Cement Disparities in Oral Health,* July 2015; http://ilikemyteeth.org/a-perfect-smile-comes-at-a-cost-how-poverty-and-food-insecurity-cement-disparities-in-oral-health/

American Academy of Pediatrics: Bright Futures

America's Tooth Fairy: National Children's Oral Health Foundation; *Facts about Tooth Decay*; http://www.ncohf.org/ ; accessed February 2016

CDC: Office for the Associate Director for Policy: *Preventing Tooth Decay*; http://www.cdc.gov/policy/hst/statestrategies/oralhealth/

Children's Dental Health Project (CDHP): https://www.cdhp.org/resources/320-oral-health-pregnant-women-resource-center

Georgetown University: National Maternal and Child Oral Health Resource Center: *Child and Adolescent Oral Health Issues*, 2012; http://mchoralhealth.org/

HHS. HRSA: Oral Health: Women and Children; http://www.hrsa.gov/publichealth/clinical/oralhealth/maternalchild.html

NYSDOH Prevention Agenda, maternal dental health: https://www.health.ny.gov/prevention/prevention_agenda/healthy_mothers/dental_health.htm

NYSDOH Fluoride Varnish Training Materials and Oral Health Information for Child Health Providers: https://www.health.ny.gov/prevention/dental/child_oral_health_fluoride_varnish_for_hcp.htm

NYSDOH Preventive Dentistry Program for High Risk Underserved Children's Program: https://www.health.ny.gov/prevention/dental/high_risk.htm

**County Health Rankings:**

Robert Wood Johnson Foundation; 2016 County Health Rankings for Sullivan County, NY; http://www.countyhealthrankings.org/app/new-york/2016/rankings/sullivan/county/outcomes/overall/snapshot

**Dental care during pregnancy**:

American College of Obstetricians and Gynecologists (acog): https://www.acog.org/-/media/Departments/Health-Care-for-Underserved-Women/OralHealthDuringPregnancy.pdf?dmc=1&ts=20160331T1110234157

American Dental Association: http://www.ada.org/en/press-room/news-releases/2015-archive/august/new-study-shows-dental-treatment-during-pregnancy-is-safe

Children's Dental Health Project (CDHP): https://www.cdhp.org/resources/320-oral-health-pregnant-women-resource-center

US Dept. of Health and Human Services:
http://womenshealth.gov/pregnancy/you-are-pregnant/staying-healthy-safe.html

Oral Health During Pregnancy: Morgan MA, Crall J, Goldenberg RL, Schulkin J. J Matern Fetal Neonatal Med. 2009 Sep;22(9):733-9. doi: 10.3109/14767050902926954.
http://www.ncbi.nlm.nih.gov/pubmed/?term=morgan+crall+oral+health+pregnancy

March of Dines: http://www.marchofdimes.org/pregnancy/dental-health-during-pregnancy.aspx#

Pregnancy Risk Assessment Monitoring System, CDC: http://www.cdc.gov/prams/
Pregnancy Risk Assessment Monitoring System, NYSDOH: https://www.health.ny.gov/statistics/prams/

**Dental Health Professional Shortage Areas (DHPSA):**
http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/designationcriteria.html

**Disparities in oral health:**

CDC: Division of Oral Health: *Disparities in Oral Health*
http://www.cdc.gov/oralhealth/oral_health_disparities/index.htm

Data Resource Center for Child and Adolescent Health: National Survey for Children's Health 2011-2012, Indicator 1.2: Condition of children's teeth, age 1-17 years, New York State, ages 1-17, results sorted by race and ethnicity; http://childhealthdata.org/browse/survey

Doescher, Mark P. et. al. *The Crisis in Rural Dentistry.,* WWAMI Rural Health Research Center Policy Brief, April 2009; http://depts.washington.edu/uwrhrc/uploads/Rural_Dentists_PB_2009.pdf

*Explaining racial/ethnic disparities in children's dental health: a decomposition analysis*. Guarnizo-Herreño CC1, Wehby GL., Am J Public Health. 2012 May;102(5):859-66. doi: 10.2105/AJPH.2011.300548. Epub 2012 Mar 15.

Homelessness and Oral Health: http://mchoralhealth.org/PDFs/OHHomelessfactsheet.pdf

Kumar JV, Green EL. *Oral health disparities in New York State*. N Y State Dent J. 2005 Dec;71(7):43-7. Review. PubMed PMID: 16514878).

NYS Minority Health report:
https://www.health.ny.gov/statistics/community/minority/docs/surveillance_report_2012.pdf

Rural Health Information Hub, *Oral Health Disparities*,
https://www.ruralhealthinfo.org/topics/oral-health#disparities

**Oral Health and its connection to overall health:**

Georgetown University Health Policy Institute; Children's Health Policy Blog: *Lack of Dental Care Poses Health Risk to Children*; September 17, 2012; http://ccf.georgetown.edu/all/lack-dental-care-poses-health-risk-children/

HHS Oral Health Initiative 2010. The HHS Oral Health Initiative's key message is that *Oral Health is Integral to Overall Health.* http://www.hrsa.gov/publichealth/clinical/oralhealth/hhsinitiative.html

New York State Oral Health Coalition: www.nysohc.org

**Oral health statistics:**

Healthy People 2020 Oral Health Objectives:
https://www.healthypeople.gov/2020/topics-objectives/topic/oral-health/objectives

New York State Department of Health:
https://www.health.ny.gov/statistics/chac/chai/docs/ora_48.htm

NYS (county level) Data Source: NYS County Health Assessment Indicators-Oral Health,
http://www.health.state.ny.us/statistics/chac/chai/

NYS (county and regional Medicaid dental statistics):
http://www.health.ny.gov/statistics/chac/indicators/ora.htm

NYS (statewide) Data Source: NY State Oral Health Surveillance System,
http://www.health.state.ny.us/prevention/dental/docs/child_oral_health_surveillance.pdf;

Sullivan County, NY Public Health Services; *Sullivan County 2013-2017 Community Health Assessment*, Published November, 2013; http://webapps.co.sullivan.ny.us/docs/phs/healthinfo/2013-2017_Community_Health_Assessment.pdf

Sullivan County, NY Public Health Services; *Sullivan County 2013-2017 Community Health Improvement Plan;* Published November, 2013; http://webapps.co.sullivan.ny.us/docs/phs/healthinfo/2013-2017_Community_Health_Improvement_Plan.pdf

US Data Source: Healthy People Data 2010, Oral Health, http://wonder.cdc.gov/data2010/focus.htm

**Poverty statistics for Sullivan County:**

NYS Community Action Association, Poverty Data, Published February 2016 based on 2010-2014 census estimates; http://nyscommunityaction.org/poverty-in-new-york/povertydata/

Data and Statistics on Homelessness by school district: http://www.nysteachs.org/info-topic/statistics.html

**Surgeon General's report on Oral Health and associated sites:**

HRSA: http://www.hrsa.gov/publichealth/clinical/oralhealth/hhsinitiative.html

Children's Dental Health Project:

https://www.cdhp.org/blog/264-the-surgeon-general-s-report-14-years-later

Surgeon General's groundbreaking 2000 Report : Oral Health in America: http://silk.nih.gov/public/hck1ocv.@www.surgeon.fullrpt.pdf

**Water Fluoridation in New York State:**

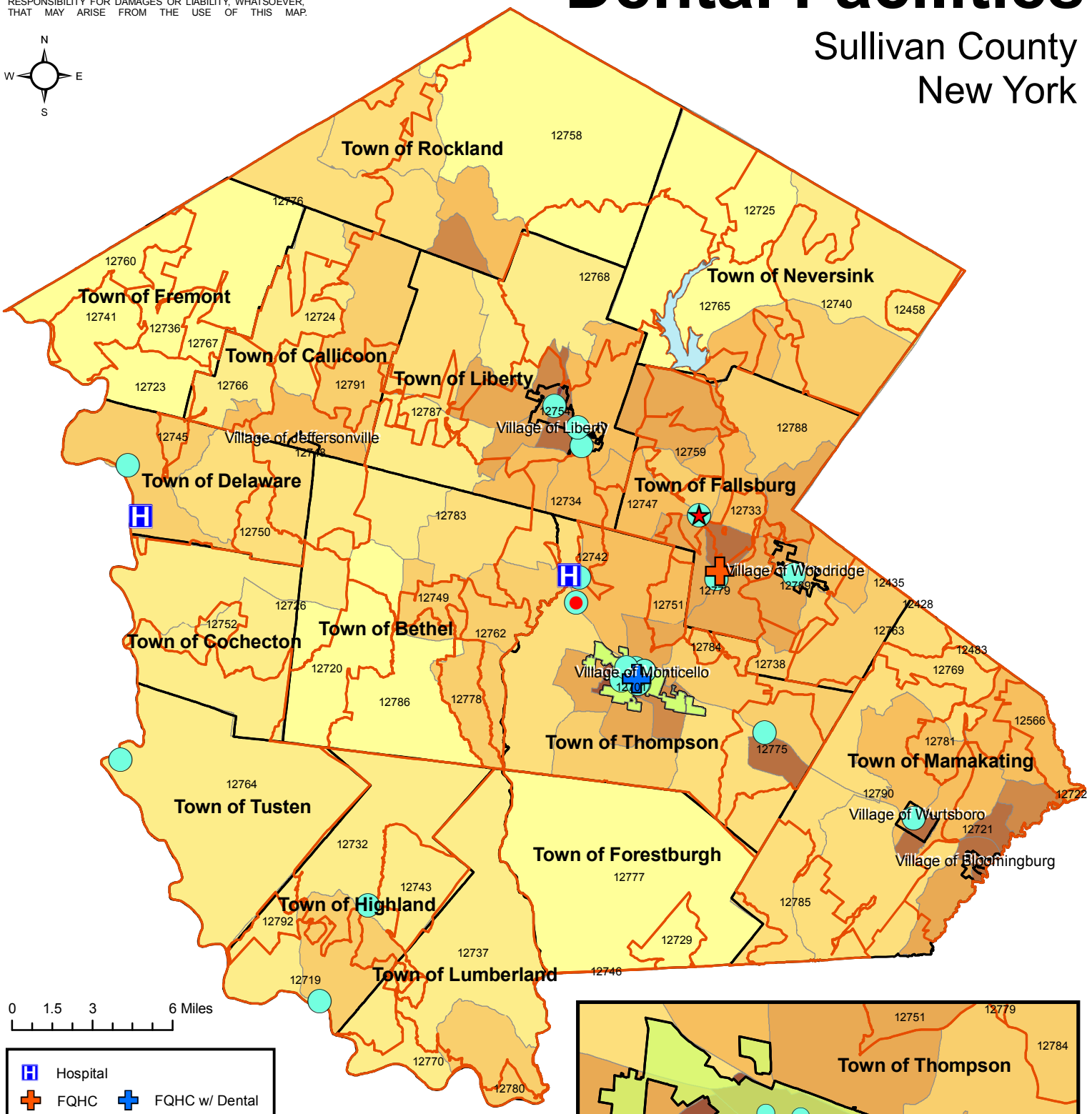
https://www.health.ny.gov/prevention/dental/fluoridation/benefits.htm

# APPENDIX B: Local Resources

DISCLAIMER: SULLIVAN COUNTY MAKES NO REPRESENTATIONS AS TO THE ACCURACY OF THE INFORMATION IN THE MAPPING DATA. SULLIVAN COUNTY SPECIFICALLY PROVIDES THIS INFORMATION AS IS. SULLIVAN COUNTY EXPRESSLY DISCLAIMS RESPONSIBILITY FOR DAMAGES OR LIABILITY, WHATSOEVER, THAT MAY ARISE FROM THE USE OF THIS MAP.

# Dental Facilities

## Sullivan County New York



Ronald Berg DDS (Oral surgeon): 3 Dillon Road, Monticello, NY 12701, 845-794-5454

Gary Berson, DDS, 523 Broadway, Monticello, NY 12701, 845-796-3368

Bracesetters 51 Saint John St Monticello, NY 12701, 845-794-1300

William Brinkerhoff DDS 444 Broadway Monticello, NY 12701, 845-794-7180

Catskill Oral Surgery: 457 Broadway, Suite 17, Monticello, NY 12701, 845-791-7360

Jeffrey Cohen, D.D.S. & Associates 816 Old Route 17 Harris, NY 12742, 845-794-4545

Marie Devore, DMD, 3411 Rt. 97, Barryville, NY, 845-557-8500

Discovery Health Center Dental Clinic: The Center for Discovery
P.O. Box 840 Harris, New York 12742, (845) 707-8400

David Drew DDS 9 Highland Ave Woodridge, NY 12789, 845-434-5443, drew@hvcrr.com

Gold Dental, PLLC 60 Jefferson St Monticello, NY 12701, 845-794-5411

Great Expressions Dental Center 523 Broadway Monticello, NY 12701, 845-794-0706

Great Expressions Dental Center 37 Triangle Rd Liberty, NY 12754, 845-292-3900

Hudson River Healthcare Dental Clinic: Health Center at Monticello
19 Lakewood Avenue Monticello, NY 12701, 845-791-7484

Randolph C Katz DDS 23 High St Monticello, NY 12701, 845-796-2505

Nagpal Dental Association (Phull D. Ram DDS) *Two offices in Sullivan County:*
1) Highland Professional Plaza 619 Route 55 Eldred, NY 12732 845-557-8865
2) Professional Building 247 Bridge Street Narrowsburg, NY 12764, 845-252-3951

Philip Olsen DDS & Jon Sutherland DDS, 68 Academy St Liberty, NY 12754, 845-292-8022

Prasad Children's Dental Health Program Inc
465 Brickman Rd Hurleyville, NY 12747, 845-434-0376

Lawrence Richman, DDS 111 Sullivan Ave Ferndale, NY 12734, 845-292-7390

Smiles of the Catskills: Drs Anthony Longo and Joseph Chung, DDS, 230 Rock Hill Drive, Rock Hill Drive, Rock Hill, NY 12775, 845-796-3160, longochungdds@gmail.com

South Fallsburg Dental
5203 Main St South Fallsburg, NY 12779 845-434-1202

Maureen W Whipple, DMD *Two offices in Sullivan County:*
1) 1 Fairchild Pl Monticello, NY 12701, 845-794-6423
2) 20 Gregory St Callicoon, NY 12723, 845-887-6423

Wurtsboro Dental (Neesha Duggal DDS) 187 Kingston Ave Wurtsboro, NY 12790, 845-888-8001

| SULLIVAN COUNTY RURAL HEALTH NETWORK, March 2016 | |
|---|---|
| **Name and Title** | **Affiliation** |
| Nancy McGraw, Public Health Director | Sullivan County Public Health Services |
| Melissa Stickle, Deputy Director | Sullivan County Department of Community Services |
| Lesia Snihura, Director | Sullivan County Youth Services (was Youth Bureau) |
| Deborah Theysohn , Principal | Sullivan County BOCES Health Careers Division |
| Donna Willi, Director | Sullivan County Child Care Council |
| Martha Scoppa , Coordinator for Single Point of Entry SULLIVAN NY CONNECTS | Office of Aging/SULLIVAN NYCONNECTS |
| Walter Stein, Executive Director | CACHE (Community Action Commission to Help the Economy) |
| Maria Cecilia Escarra, DDS, Program Adminsitrator | PRASAD Children's Dental Health Program |
| Sean Gerow, Director | Family Empowerment Council |
| Dan Grady, President and CEO | Hospice of Orange/Sullivan Counties |
| Caren Fairweather, Chairperson RHN | Executive Director , Maternal Infant Services Network (MISN) |
| Barbara Bennett, Director of Education and Prevention | Hudson Valley Community Services |
| Elileen McManus, Associate Vice President for Operations | Hudson River Health Care |
| Laura Quigley, Director | Center for Workforce Development |
| Anita Parkhurst, Grants Administrator | Catskill Regional Medical Center |
| Susan Clark, Public Health Educator/ Rural Health Network Coordinator | Sullivan County Public Health Services |
| Amanda Langseder, WIC Director | Sullivan County Public Health Services WIC Program |
| Bernie Zierler, Nurse Practitoner | Refuah Health Center |
| Freda Eisenberg, Commissioner | Sullivan County Planning Department |
| Gladys Walker , Board Member | NAACP Health Committee and Health Services Advisory Board, SCPHS |
| Martin Colavito, Director of Prevention Services in Orange and Sullivan Counties | Catholic Charities/Recovery Center |
| Colleen Monaghan, Executive Director | Cornell Cooperative Extension |
| Denise Frangipane, Assistant Director | Sullivan Renaissance |
| Joseph Todora, Commissioner | Sullivan County Division of Health and Family Services |

**Sullivan County Oral Health Coalition Members, March 2016**

| Name | Professional Role or Title | Affiliation |
|---|---|---|
| **Emily Devore** | Healthy Communities Educator | Cornell Coop. Extension |
| **Jill Hubert-Simon** | Public Health Educator | Sullivan County Public Health Services |
| **Aaron E. Yancoskie** | D.D.S. Diplomate | American Board of Oral and Maxillofacial Pathology |
| **Susan Clark** | Rural Health Network Coordinator, Public Health Educator | Sullivan County Public Health Services |
| **Dr. M Cecilia Escarra** | Dr. M Cecilia Escarra, Program Administrator | PRASAD Children's Dental Health Program Inc |
| **Nancy McGraw, MSW, MBA** | Public Health Director | Sullivan County Public Health Services |
| **Kristin Hofer** | RDH | |
| **Erica Dahl** | CLC, Community Nutrition Educator, Eat Smart New York Hudson Valley Region | Cornell Cooperative Extension |
| **Stephanie M. Brown** | RN, Quality Improvement Coordinator | Sullivan County Public Health Services |
| **Heather Roth** | LPN | Sullivan County Head Start |
| **Amanda Langseder** | CLC ,WIC Program Coordinator | Sullivan County Public Health Services |
| **Gail Bolte** | RDH | |

# APPENDIX C: Local Statistics

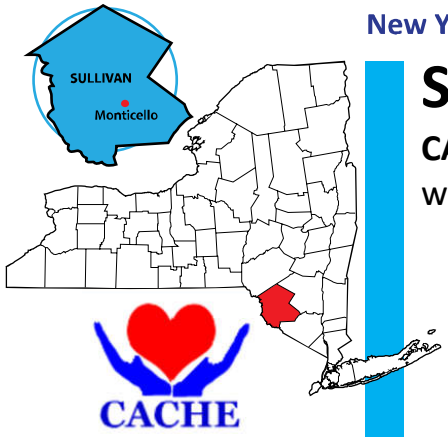
County Health Rankings & Roadmaps
Building a Culture of Health, County by County

# Sullivan (SV)

| | Sullivan County | Error Margin | Top U.S. Performers^ | New York | Rank (of 62) |
|---|---|---|---|---|---|
| **Health Outcomes** | | | | | 61 |
| **Length of Life** | | | | | 61 |
| Premature death | 8,200 | 7,500-9,000 | 5,200 | 5,400 | |
| **Quality of Life** | | | | | 60 |
| Poor or fair health** | 15% | 15-16% | 12% | 17% | |
| Poor physical health days** | 3.8 | 3.6-3.9 | 2.9 | 3.6 | |
| Poor mental health days** | 3.8 | 3.7-3.9 | 2.8 | 3.7 | |
| Low birthweight | 9% | 8-10% | 6% | 8% | |
| **Health Factors** | | | | | 59 |
| **Health Behaviors** | | | | | 48 |
| Adult smoking** | 16% | 15-17% | 14% | 14% | |
| Adult obesity | 31% | 25-37% | 25% | 24% | |
| Food environment index | 7.5 | | 8.3 | 7.9 | |
| Physical inactivity | 23% | 17-29% | 20% | 24% | |
| Access to exercise opportunities | 62% | | 91% | 91% | |
| Excessive drinking** | 17% | 17-18% | 12% | 17% | |
| Alcohol-impaired driving deaths | 27% | 21-34% | 14% | 23% | |
| Sexually transmitted infections | 316.4 | | 134.1 | 489.5 | |
| Teen births | 29 | 26-31 | 19 | 23 | |
| **Clinical Care** | | | | | 59 |
| Uninsured | 14% | 13-16% | 11% | 12% | |
| Primary care physicians | 2,320:1 | | 1,040:1 | 1,200:1 | |
| Dentists | 2,450:1 | | 1,340:1 | 1,280:1 | |
| Mental health providers | 700:1 | | 370:1 | 420:1 | |
| Preventable hospital stays | 55 | 51-60 | 38 | 53 | |
| Diabetic monitoring | 89% | 83-94% | 90% | 86% | |
| Mammography screening | 54% | 49-59% | 71% | 62% | |
| **Social & Economic Factors** | | | | | 57 |
| High school graduation | 75% | | 93% | 77% | |
| Some college | 52% | 49-56% | 72% | 66% | |
| Unemployment | 6.7% | | 3.5% | 6.3% | |
| Children in poverty | 26% | 19-33% | 13% | 23% | |
| Income inequality | 4.8 | 4.4-5.3 | 3.7 | 5.6 | |
| Children in single-parent households | 36% | 31-41% | 21% | 35% | |
| Social associations | 11.7 | | 22.1 | 7.9 | |
| Violent crime | 258 | | 59 | 400 | |
| Injury deaths | 71 | 62-79 | 51 | 42 | |
| **Physical Environment** | | | | | 53 |
| Air pollution - particulate matter | 11.4 | | 9.5 | 11.7 | |
| Drinking water violations | Yes | | No | | |
| Severe housing problems | 22% | 20-24% | 9% | 24% | |
| Driving alone to work | 77% | 76-79% | 71% | 54% | |
| Long commute - driving alone | 37% | 34-40% | 15% | 36% | |

^ 10th/90th percentile, i.e., only 10% are better.
Note: Blank values reflect unreliable or missing data
** Data should not be compared with prior years due to changes in definition/methods

2016




# Sullivan County

**CACHE (Community Action Commission to Help the Economy, Inc.)**

www.sullivancountycache.org

63 South Main St.
Liberty, NY 12754
845.292.5821

**County Population:**
**76,892**

*Population for whom poverty status is determined:*

Overall
**74,155**
Population Under 18
**16,438**
Population 25 & Over
**51,536**
Population over 65
**11,568**

## 18.0% COUNTY POVERTY RATE

**Living In Poverty**

| | | |
|---|---|---|
| Individuals | 18.0% | 13,346 |
| Children (Under 18) | 26.0% | 4,270 |
| Adults 25+ | 14.7% | 7,581 |
| Senior Citizens 65+ | 9.4% | 1,091 |

## Race & Poverty

| | |
|---|---|
| White | 15.8% (9,625) |
| African American | 34.9% (2,051) |
| Hispanic/Latino | 26.9% (2,790) |

## Education & Poverty

**Adult Population 25+ - 51,536**

### Educational Attainment

| No Degree | High School | Associate | Bachelors or Higher |
|---|---|---|---|
| 14.6% (7,513) Total* | 33.4% (17,204) Total* | 30.5% (15,699) Total* | 21.6% (11,120) Total* |
| 27.2% (2,046) Living in Poverty | 15.6% (2,679) Living in Poverty | 13.7% (2,145) Living in Poverty | 6.4% (711) Living in Poverty |

*DUE TO ROUNDING, THE TOTALS ADD UP TO 100.1%

## Employment & Poverty

**Living Wage for 1 Adult, 1 Child Household**
**$23.88**

**Hourly Wage for FMR, 2BR Apartment**
**$16.46**

**Median Income**
**$32,822**

**Median Income w/High School Diploma**
**$29,395**

## Health & Poverty

**No Health Insurance**
Employed
17.0%
Unemployed
35.8%

**Free/Reduced Lunch Program**

64%

Of Those Families with Female Heads of Household and Children Present

46.3%

Live in Poverty

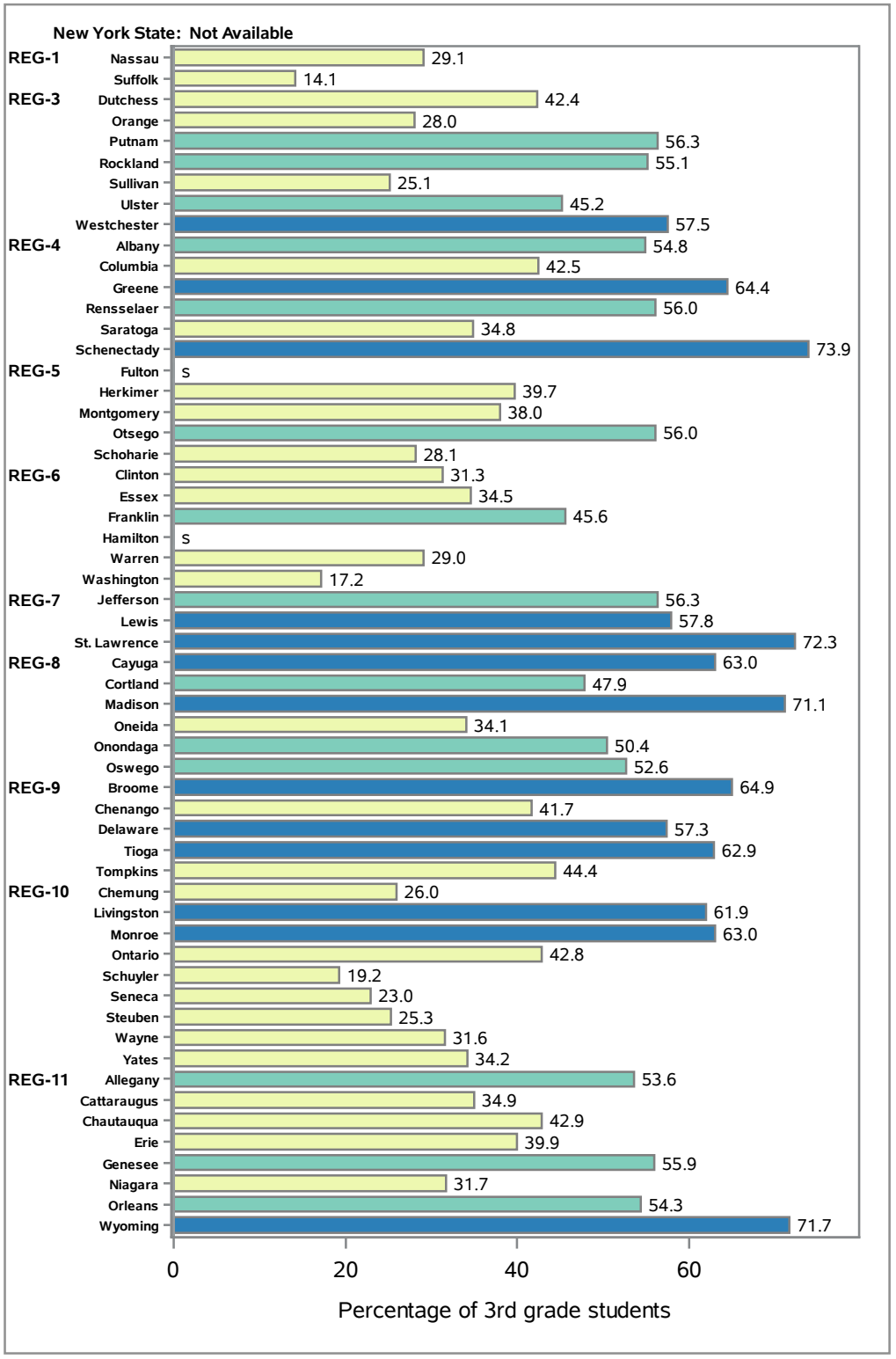
## Gender & Poverty

**High School Diploma Only**

| Median Income | Median Income |
|---|---|
| $34,747 | $23,691 |

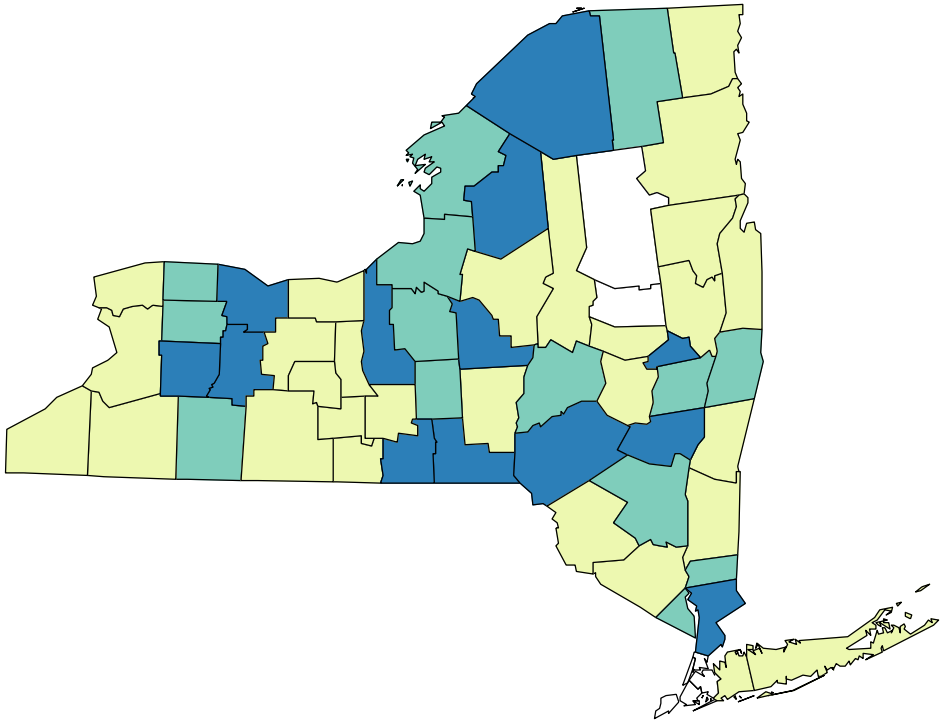
US Poverty Rate: 15.6% • NYS Poverty Rate: 15.6%

# APPENDIX D: NYSDOH Dental Maps and Tables




Percentage of 3rd grade children with dental sealants

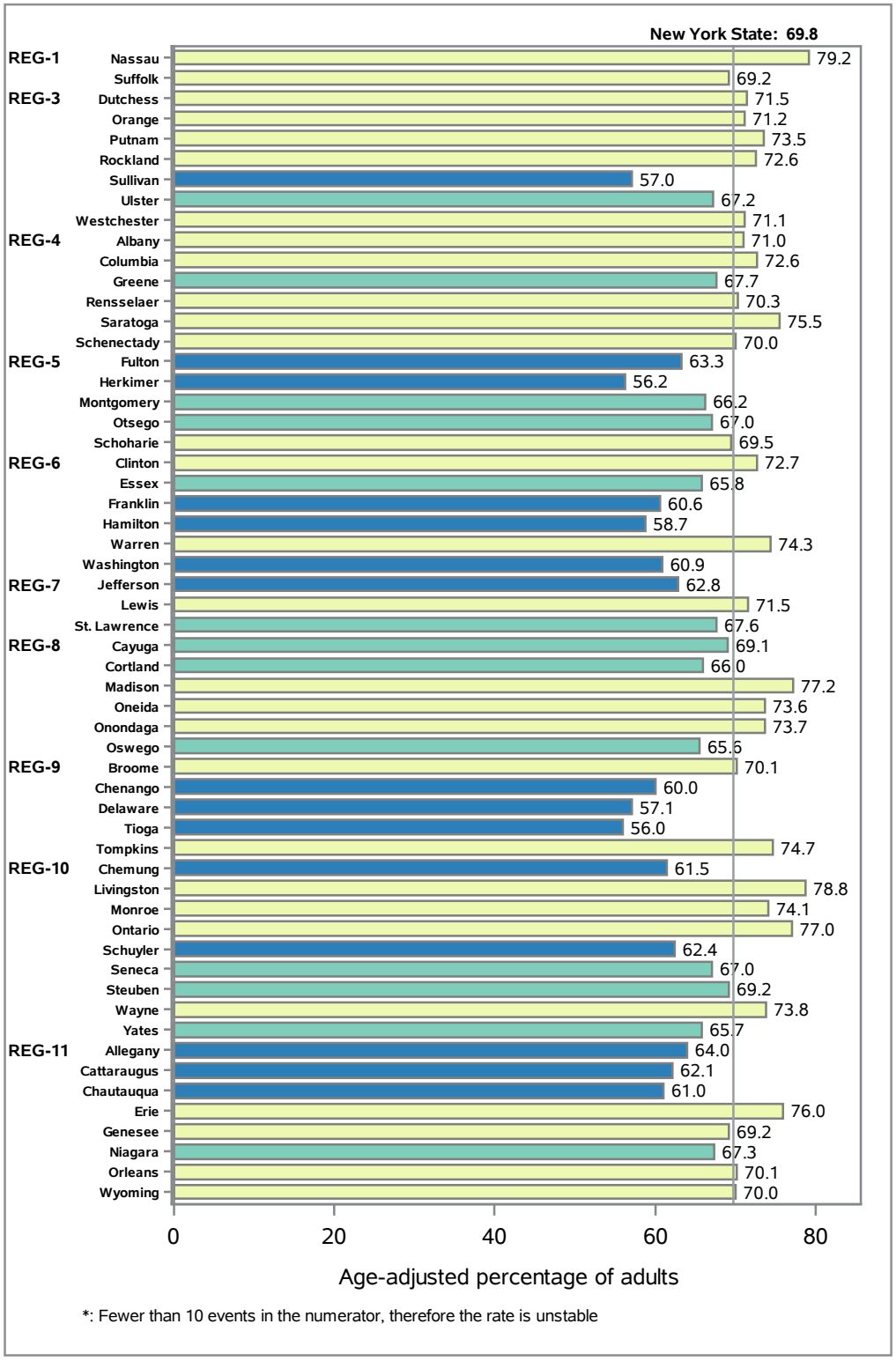
2009-2011



Percentage of 3rd grade students
Counties Are Shaded Based On Quartile Distribution

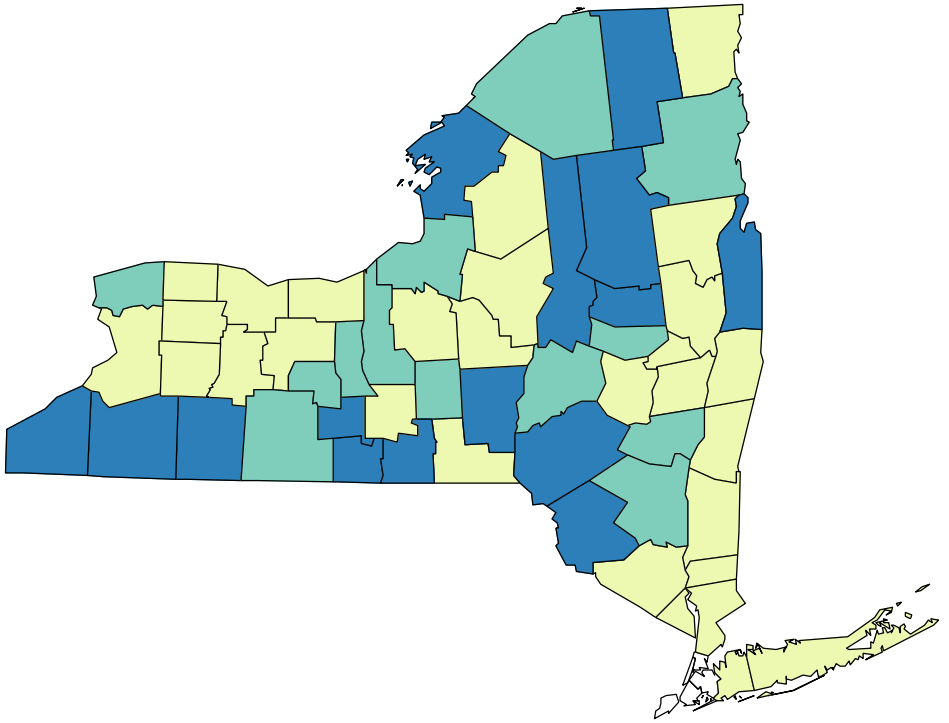
- Data not available
- 0 - < 44.4 : Q1 & Q2
- 44.4 - < 56.3 : Q3
- 56.3 + : Q4

Source: 2009-2011 Bureau of Dental Health Data as of August, 2012




*: Fewer than 10 events in the numerator, therefore the rate is unstable

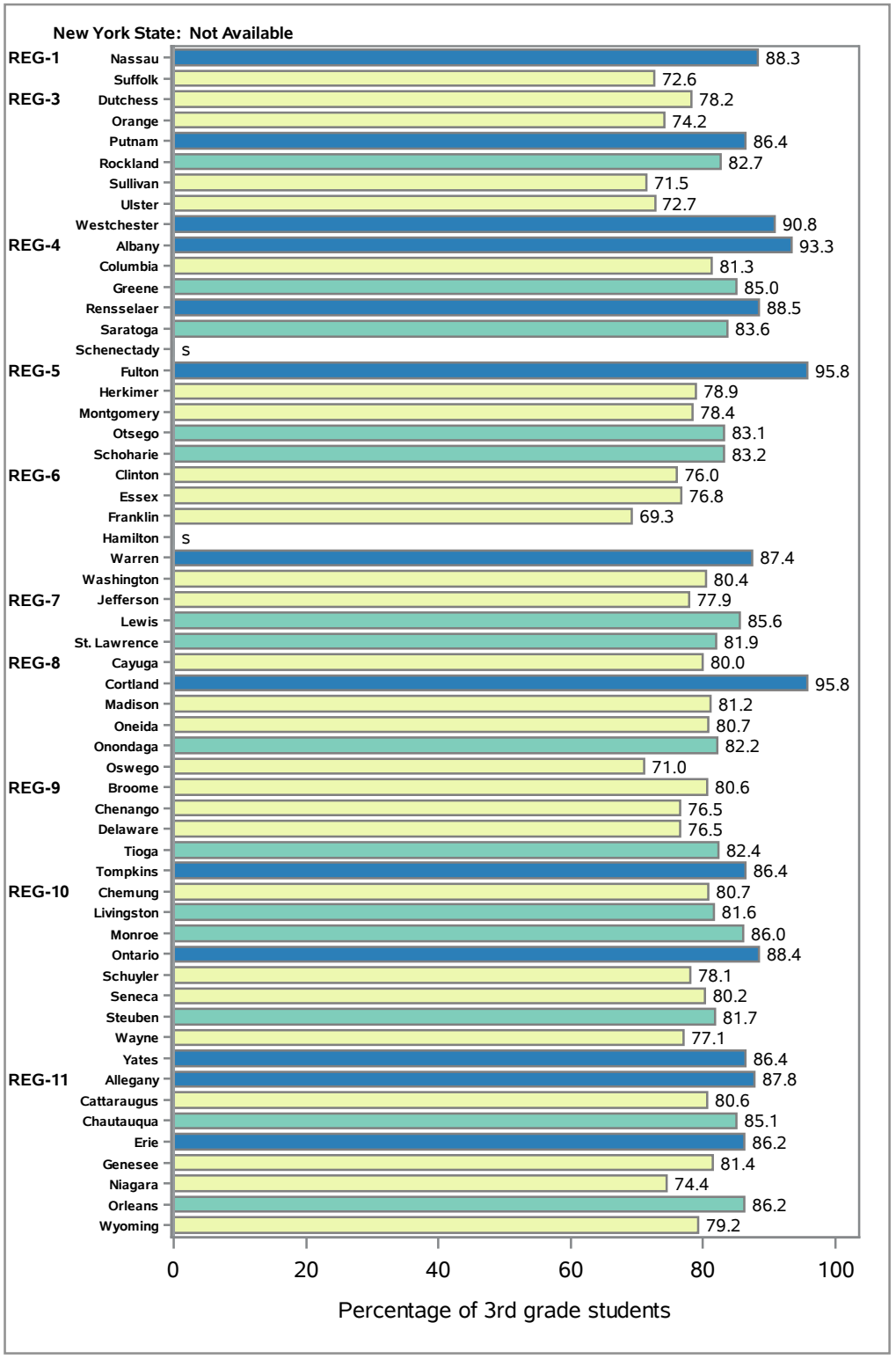
# Age-adjusted percentage of adults who had a dentist visit within the past year 2013-2014



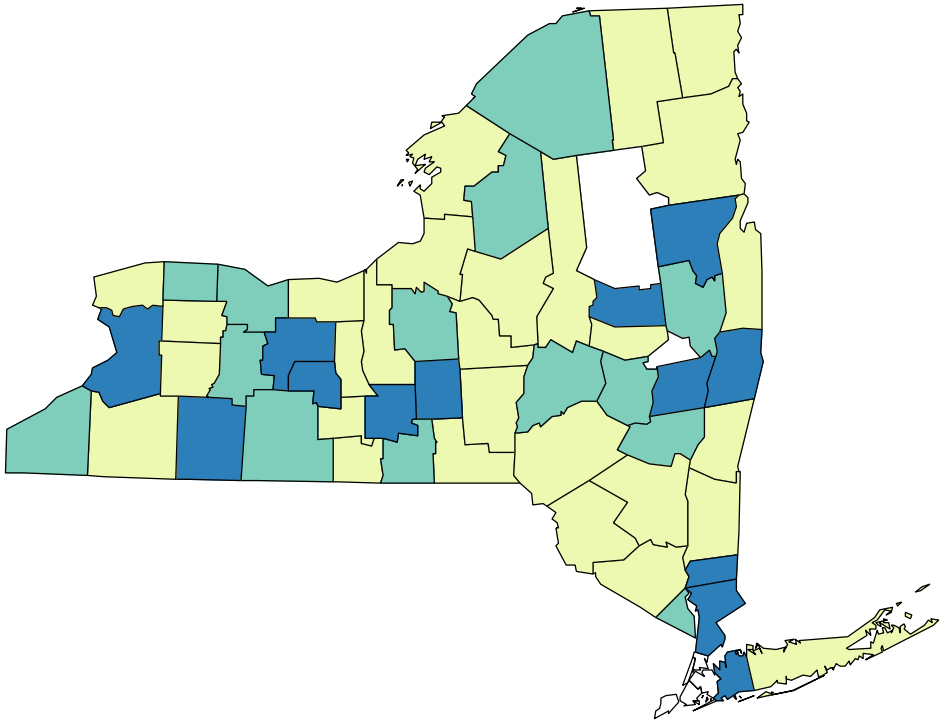
Age-adjusted percentage of adults
Counties Are Shaded Based On Quartile Distribution

- Data not available
- 0 - < 64.0 : Q1
- 64.0 - < 69.2 : Q2
- 69.2 + : Q3 & Q4

Source: 2013-2014 NYS Expanded Behavioral Risk Factor Surveillance System Data as of 2015



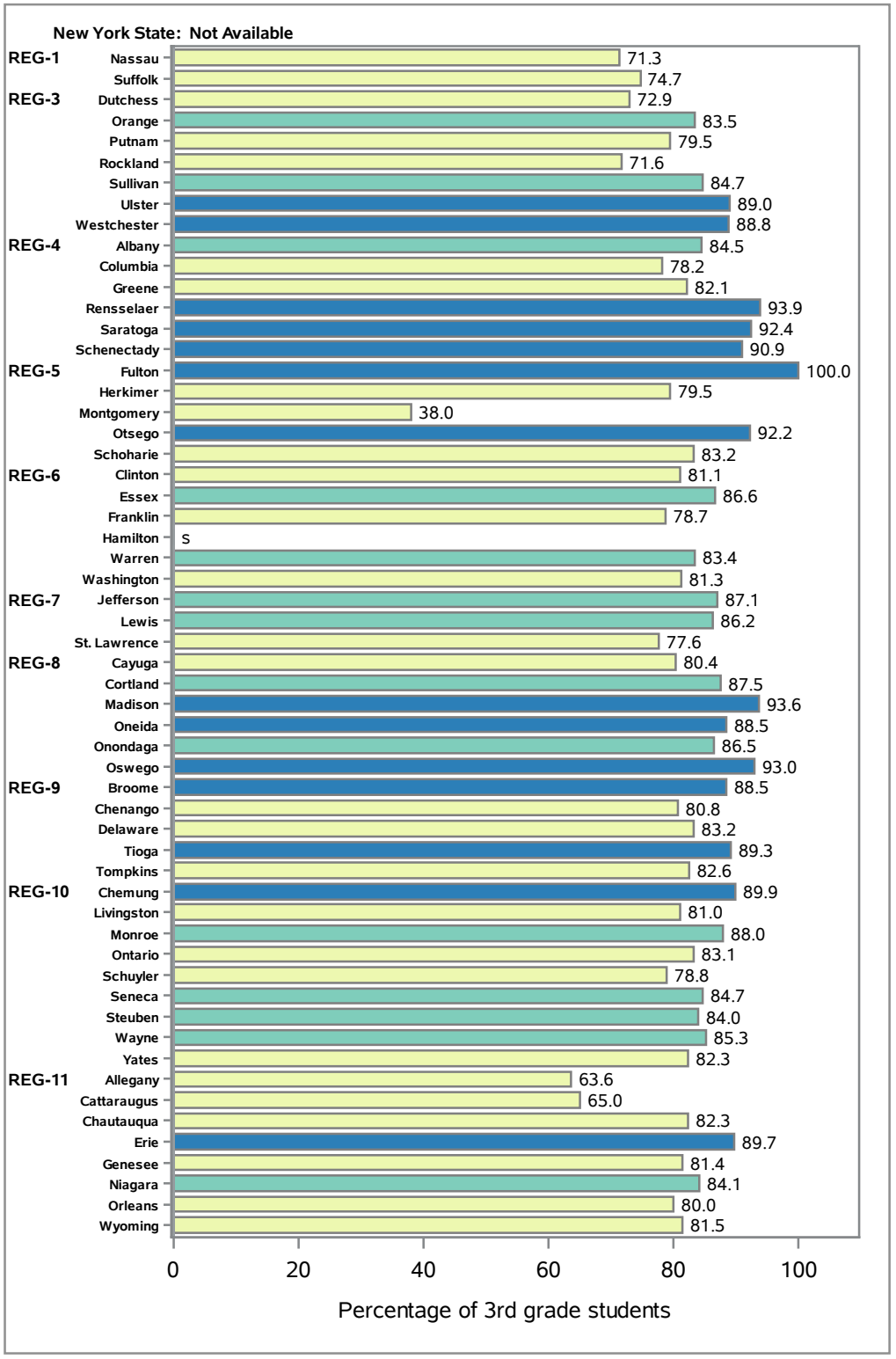

# Percentage of 3rd grade children
## with at least one dental visit in last year
## 2009-2011



Percentage of 3rd grade students
Counties Are Shaded Based On Quartile Distribution

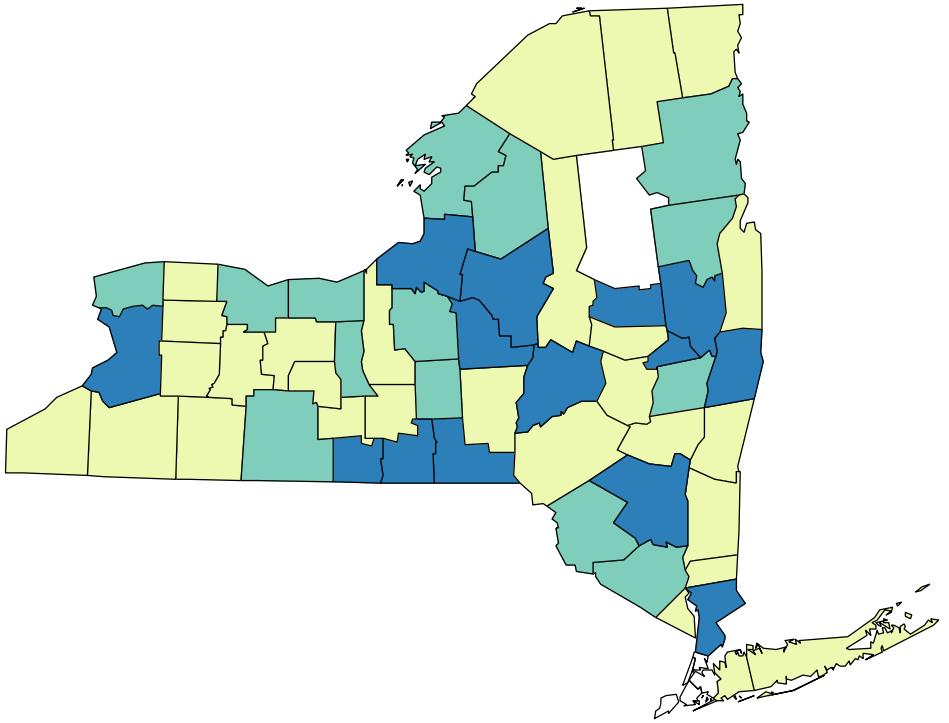
- Data not available
- 0 - < 81.4 : Q1 & Q2
- 81.4 - < 86.2 : Q3
- 86.2 + : Q4

Source: 2009-2011 Bureau of Dental Health Data as of August, 2012




Percentage of 3rd grade children with dental insurance

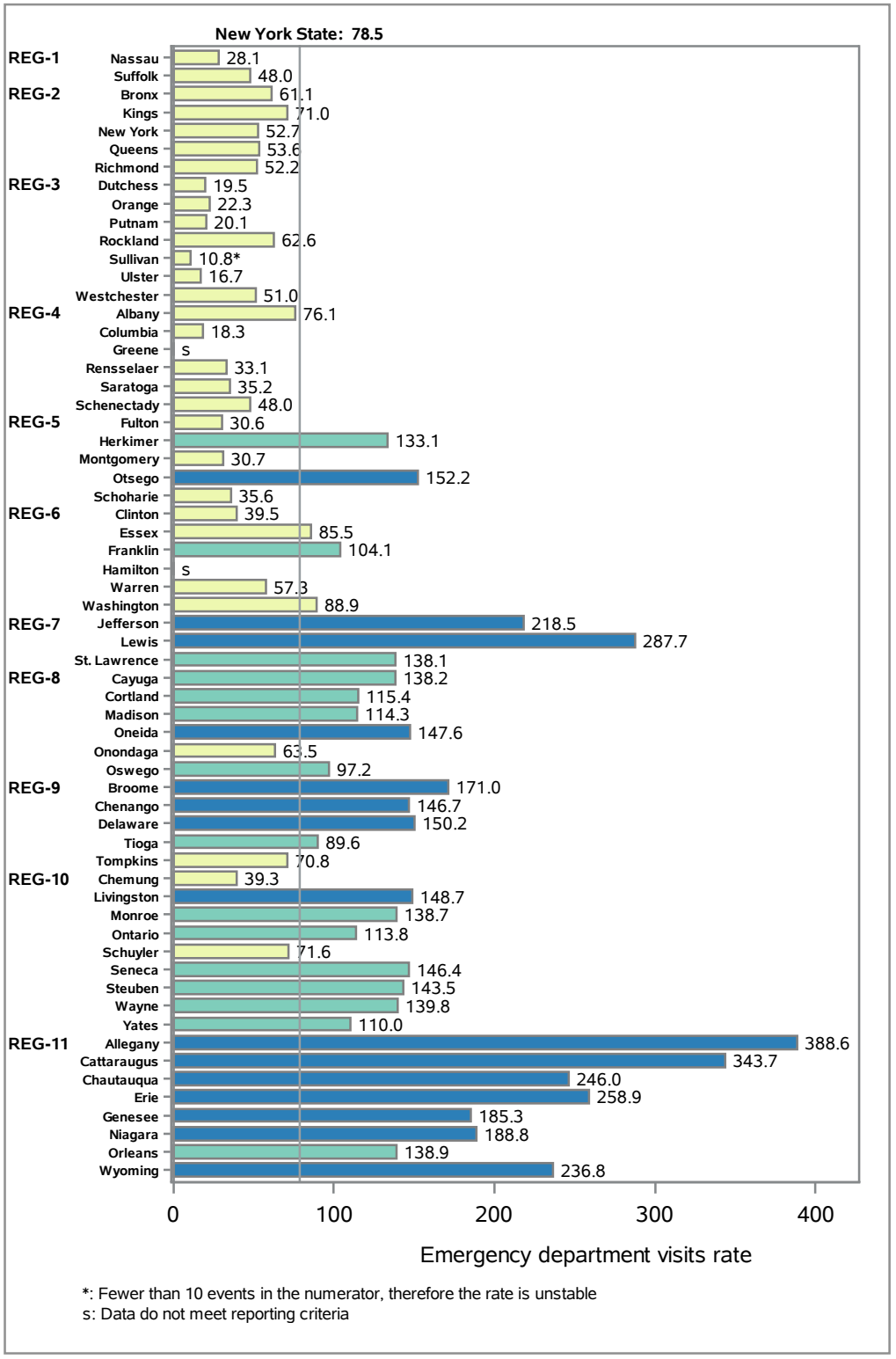
2009-2011



Percentage of 3rd grade students
Counties Are Shaded Based On Quartile Distribution

- Data not available
- 0 - < 83.3 : Q1 & Q2
- 83.3 - < 88.2 : Q3
- 88.2 + : Q4

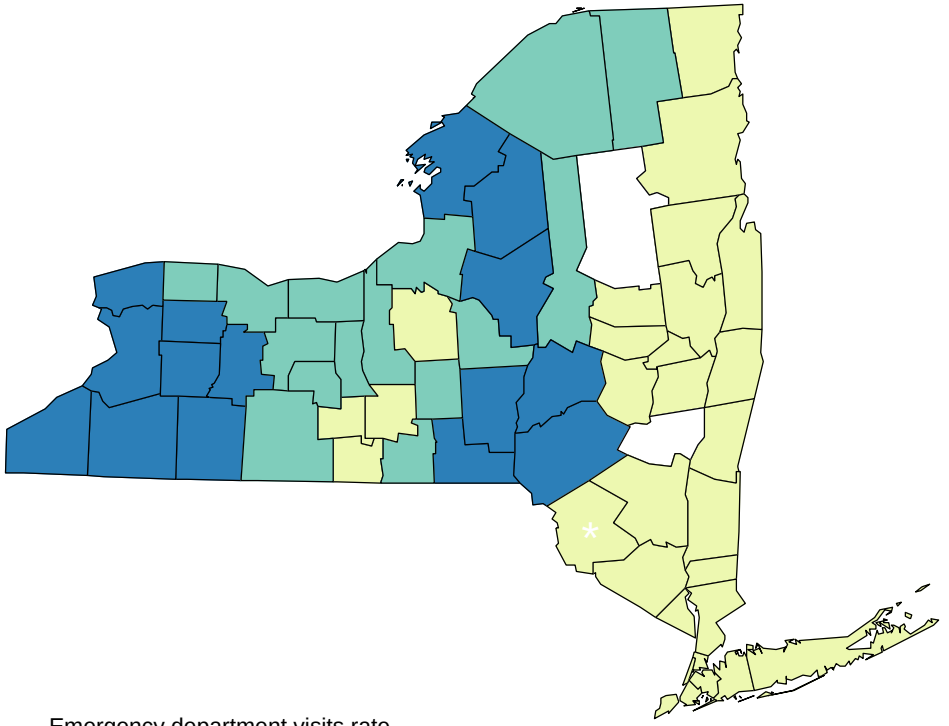
Source: 2009-2011 Bureau of Dental Health Data as of August, 2012




*: Fewer than 10 events in the numerator, therefore the rate is unstable
s: Data do not meet reporting criteria

# Caries outpatient visit rate per 10,000

Aged 3-5 years
2011-2013

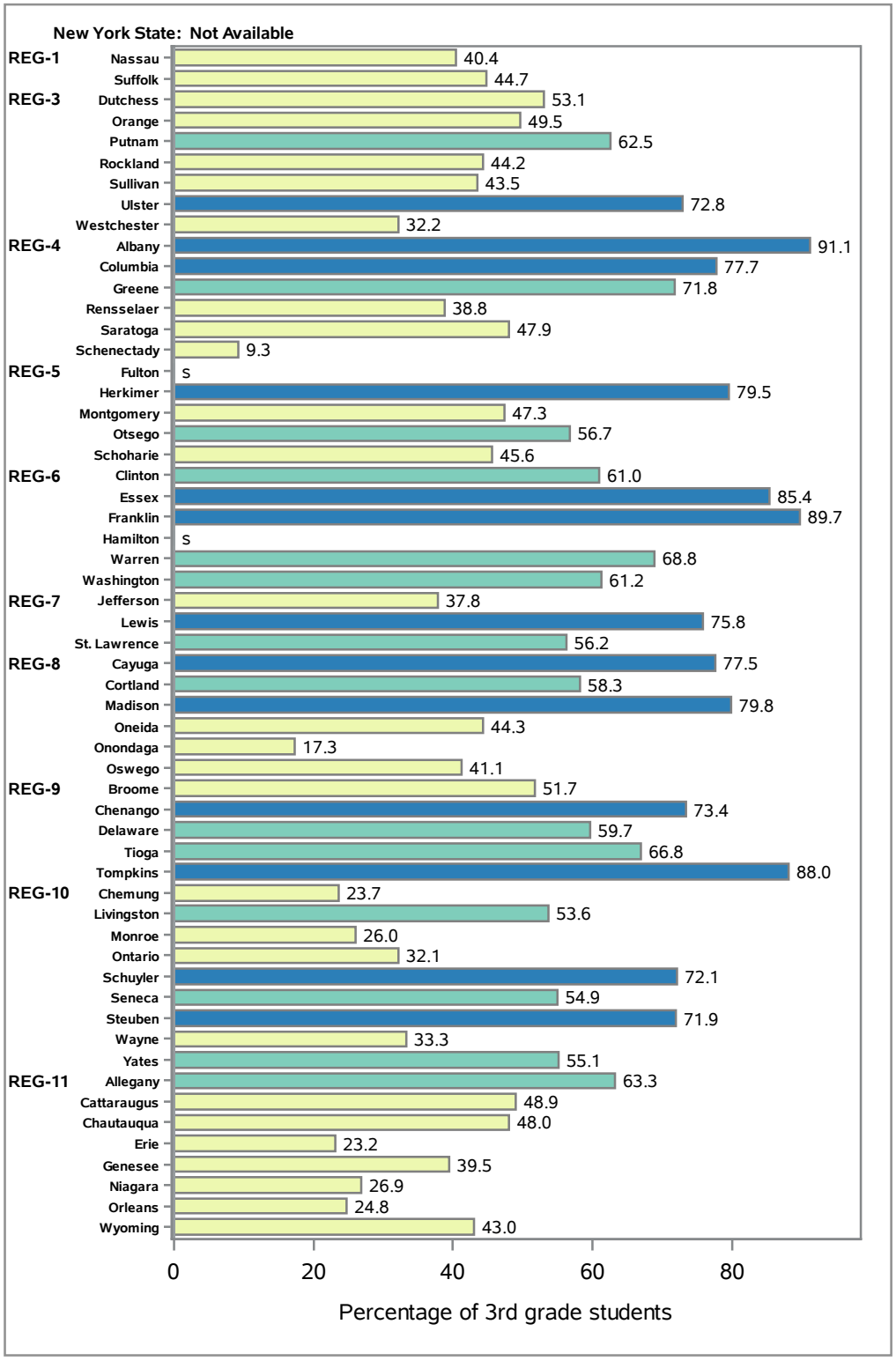


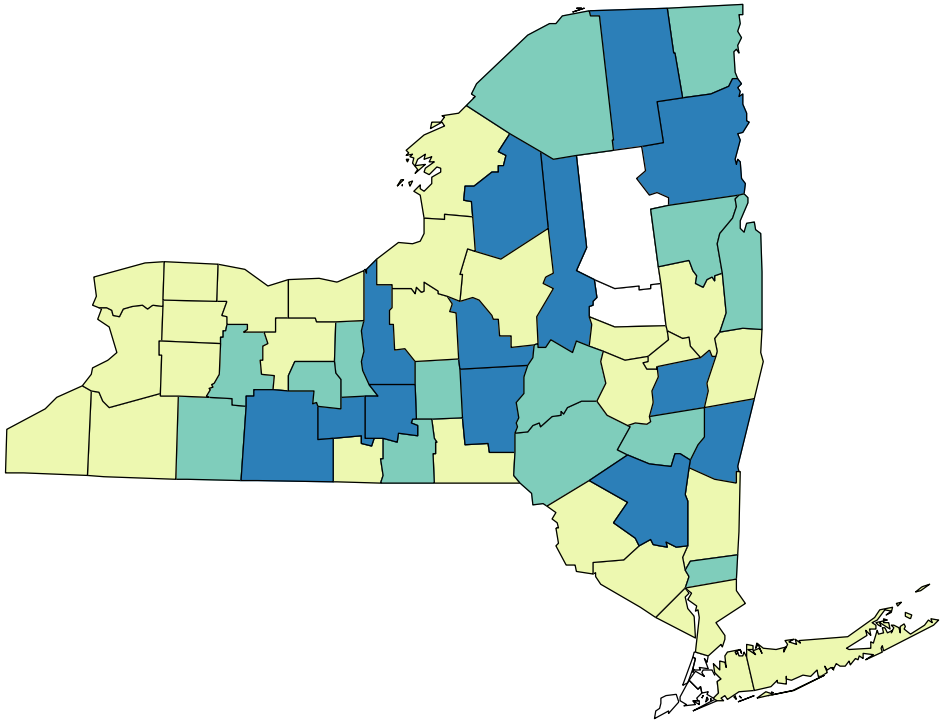

Emergency department visits rate
Counties Are Shaded Based On Quartile Distribution
(* Fewer than 10 events in the numerator, therefore the rate is unstable)

- Data not available
- 0 - < 89.3 : Q1 & Q2
- 89.3 - < 146.6 : Q3
- 146.6 + : Q4

Source: 2011-2013 SPARCS Data as of June, 2014

# Percentage of 3rd grade children
## reported taking fluoride tablets regularly
## 2009-2011

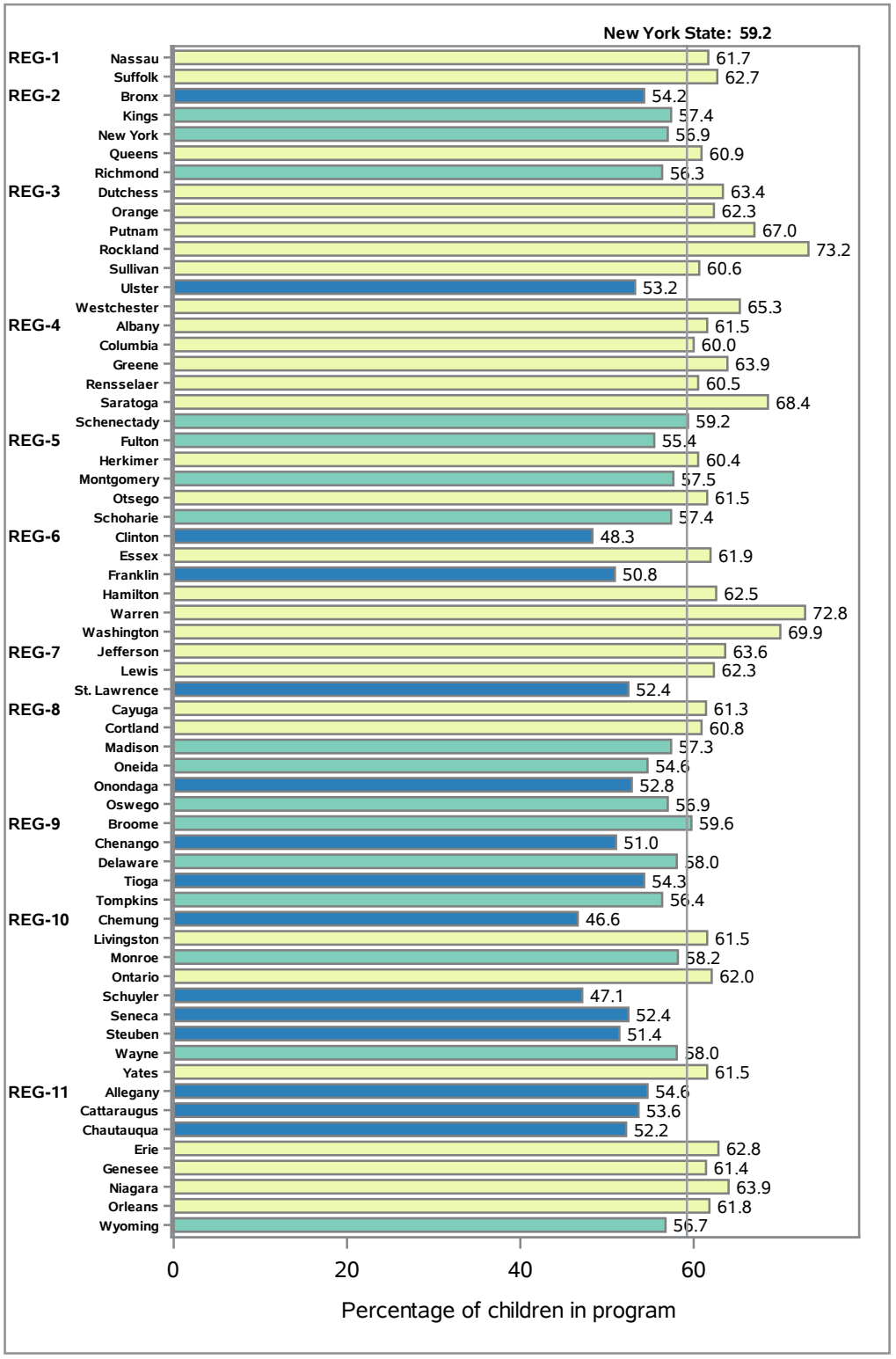


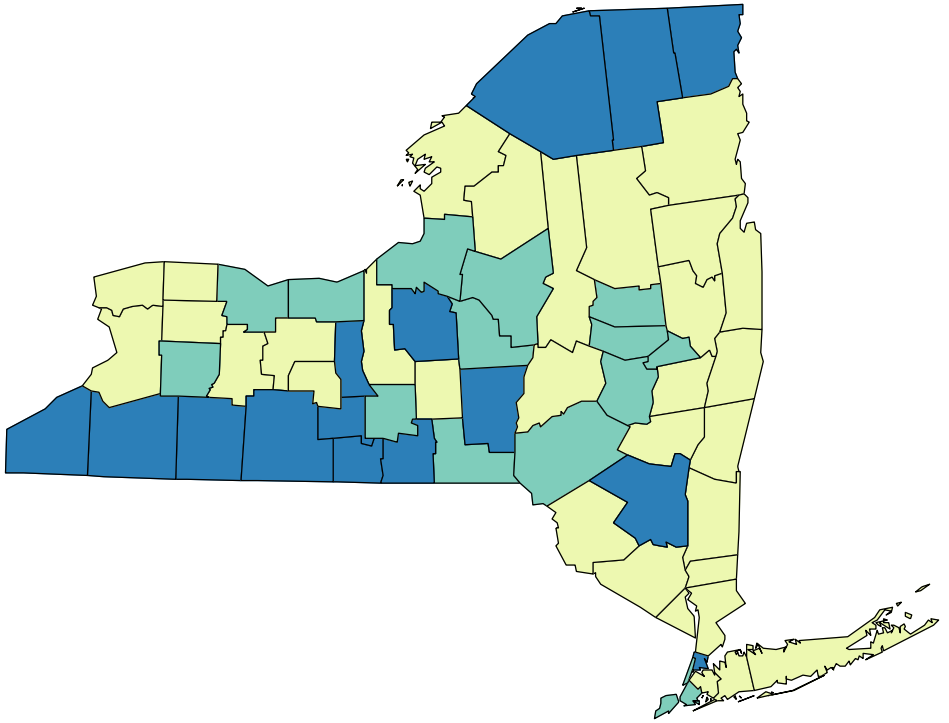
Percentage of 3rd grade students
Counties Are Shaded Based On Quartile Distribution

- Data not available
- 0 - < 53.1 : Q1 & Q2
- 53.1 - < 71.8 : Q3
- 71.8 + : Q4

Source: 2009-2011 Bureau of Dental Health Data as of August, 2012




Percentage of children, aged 2-21 years, with at least one dental visit in government sponsored insurance programs
2013



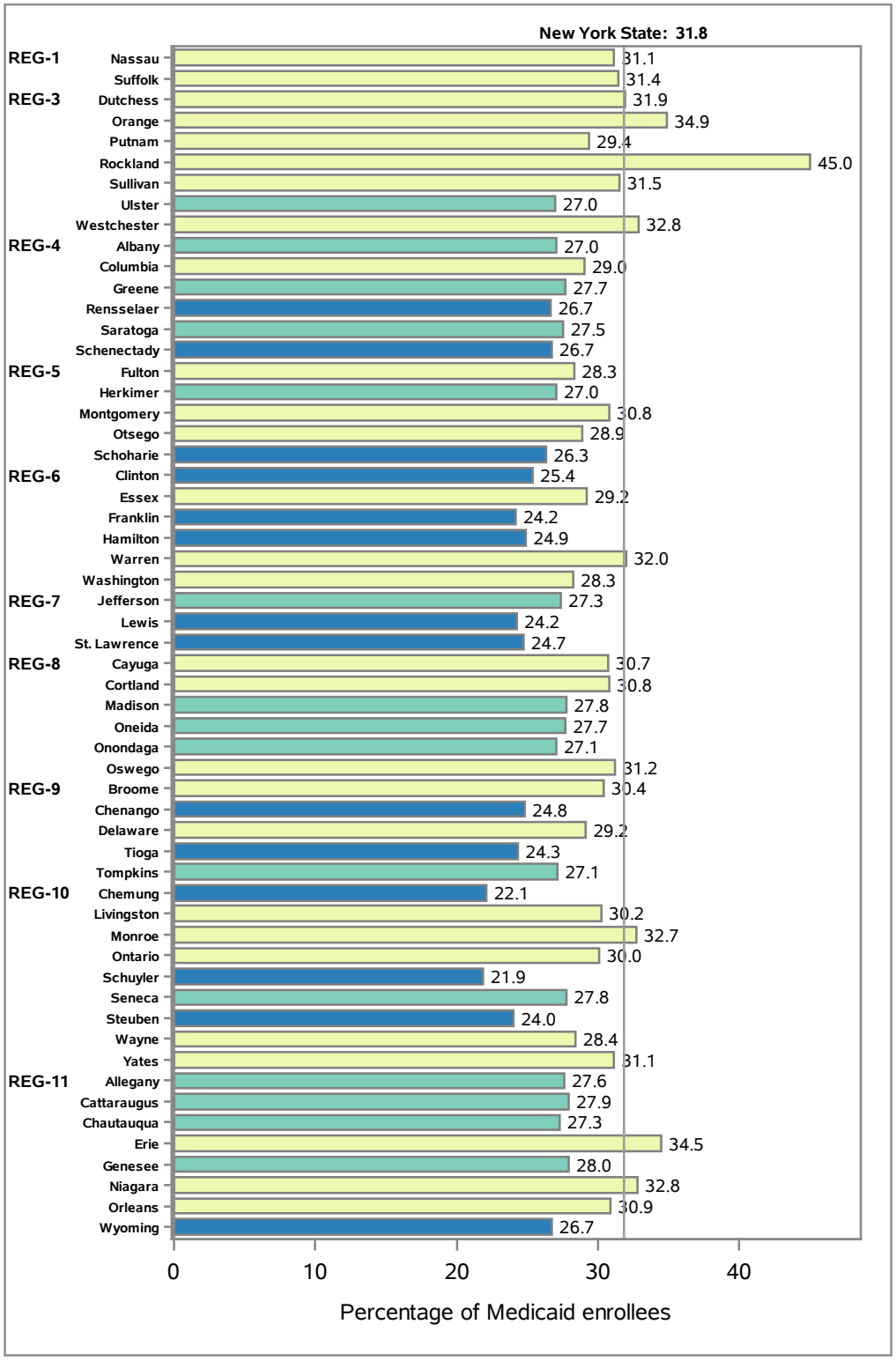
Percentage of children in program
Counties Are Shaded Based On Quartile Distribution

0 - < 54.6 : Q1

54.6 - < 59.8 : Q2

59.8 + : Q3 & Q4

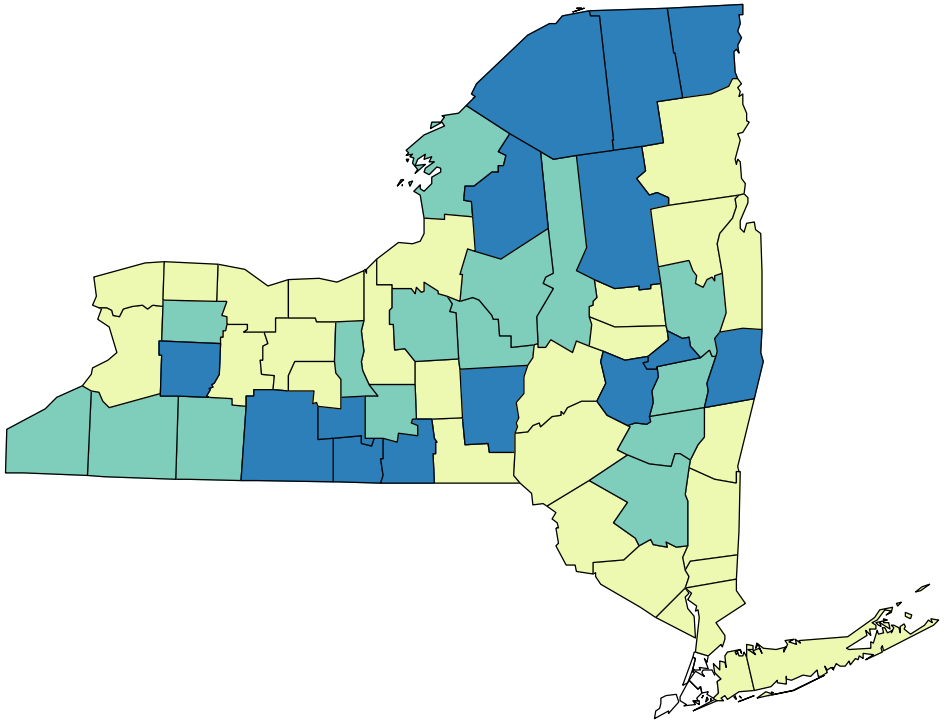
Source: 2013 NYS Medicaid and Child Health Plus Data as of July, 2015




# Percentage of Medicaid enrollees

## with at least one dental visit within the last year

## 2012-2014



Percentage of Medicaid enrollees
Counties Are Shaded Based On Quartile Distribution

- Data not available
- 0 - < 27.0 : Q1
- 27.0 - < 28.0 : Q2
- 28.0 + : Q3 & Q4

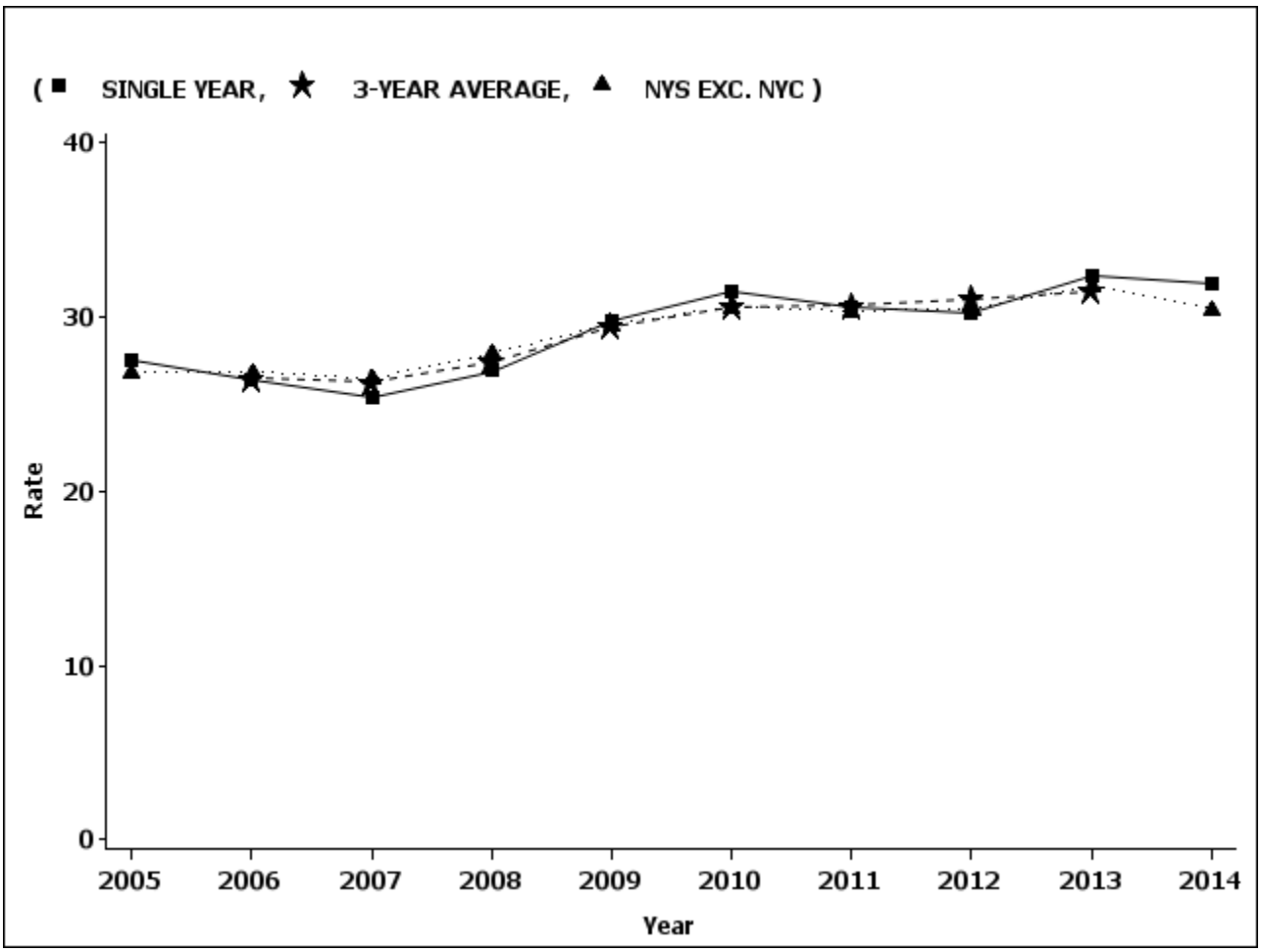
Source: 2012-2014 NYS Medicaid Program Data as of July, 2015

# Percentage of Medicaid enrollees with at least one dental visit within the last year

*Source:2012-2014 NYS Medicaid Program Data as of July, 2015*

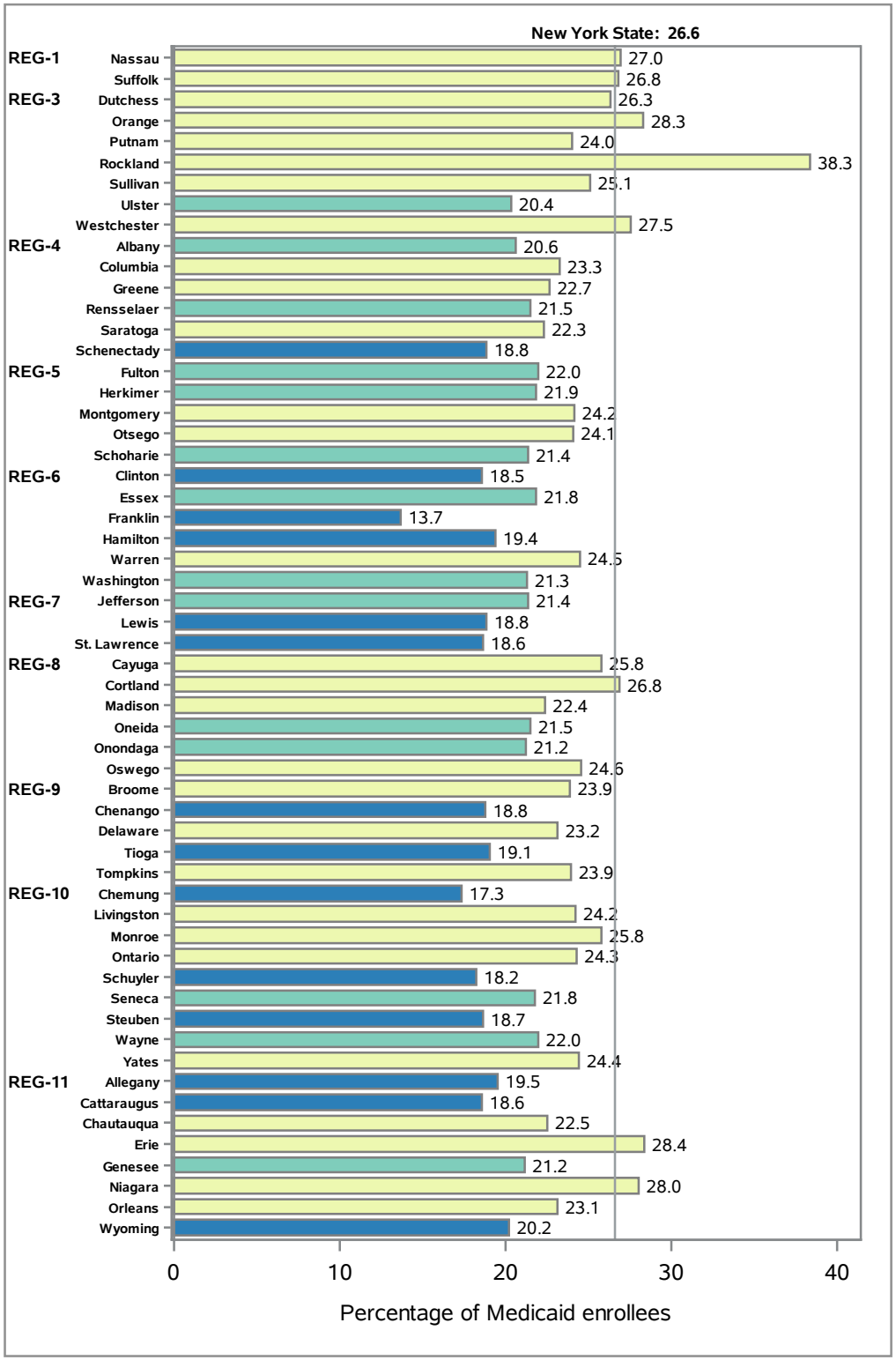
| | Enrollees with at least one dental visit | | | | Average medicaid enrollees | Crude |
|---|---|---|---|---|---|---|
| **Region/County** | **2012** | **2013** | **2014** | **Total** | **2012-2014** | **Rate** |
| Reg- 1 Long Island | | | | | | |
| Nassau | 61,444 | 70,691 | 85,201 | 217,336 | 232,710 | 31.1 |
| Suffolk | 79,666 | 86,648 | 99,980 | 266,294 | 282,293 | 31.4 |
| Region Total | 141,110 | 157,339 | 185,181 | 483,630 | 515,003 | 31.3 |
| Reg- 2 New York City | | | | | | |
| Region Total | 1,227,808 | 1,240,991 | 1,314,646 | 3,783,445 | 3,897,516 | 32.4 |
| Reg- 3 Mid-Hudson | | | | | | |
| Dutchess | 14,470 | 15,344 | 18,476 | 48,290 | 50,412 | 31.9 |
| Orange | 29,748 | 32,018 | 36,153 | 97,919 | 93,621 | 34.9 |
| Putnam | 2,107 | 2,567 | 3,418 | 8,092 | 9,183 | 29.4 |
| Rockland | 37,440 | 41,655 | 45,992 | 125,087 | 92,669 | 45.0 |
| Sullivan | 6,889 | 7,710 | 8,878 | 23,477 | 24,838 | 31.5 |
| Ulster | 10,090 | 11,267 | 13,038 | 34,395 | 42,471 | 27.0 |
| Westchester | 57,631 | 62,919 | 71,727 | 192,277 | 195,199 | 32.8 |
| Region Total | 158,375 | 173,480 | 197,682 | 529,537 | 508,393 | 34.7 |

## Sullivan County Percentage of Medicaid enrollees with at least one dental visit within the last year

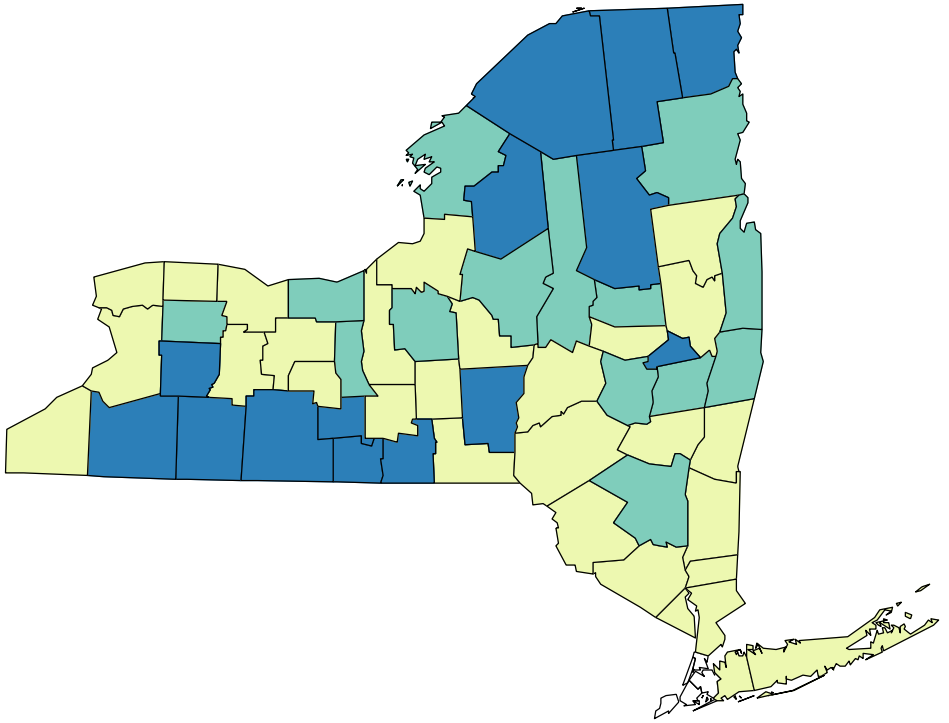



### Sullivan County Percentage of Medicaid enrollees with at least one dental visit within the last year

| | Crude Rate | | |
|---|---|---|---|
| Year | Single Year | 3-Year Average | NYS exc. NYC |
| 2005 | 27.5 | | 26.8 |
| 2006 | 26.4 | 26.4 | 26.9 |
| 2007 | 25.4 | 26.2 | 26.5 |
| 2008 | 26.9 | 27.4 | 27.9 |
| 2009 | 29.7 | 29.5 | 29.6 |
| 2010 | 31.5 | 30.6 | 30.6 |
| 2011 | 30.5 | 30.7 | 30.3 |
| 2012 | 30.2 | 31.0 | 30.5 |
| 2013 | 32.3 | 31.5 | 31.8 |
| 2014 | 31.9 | | 30.4 |



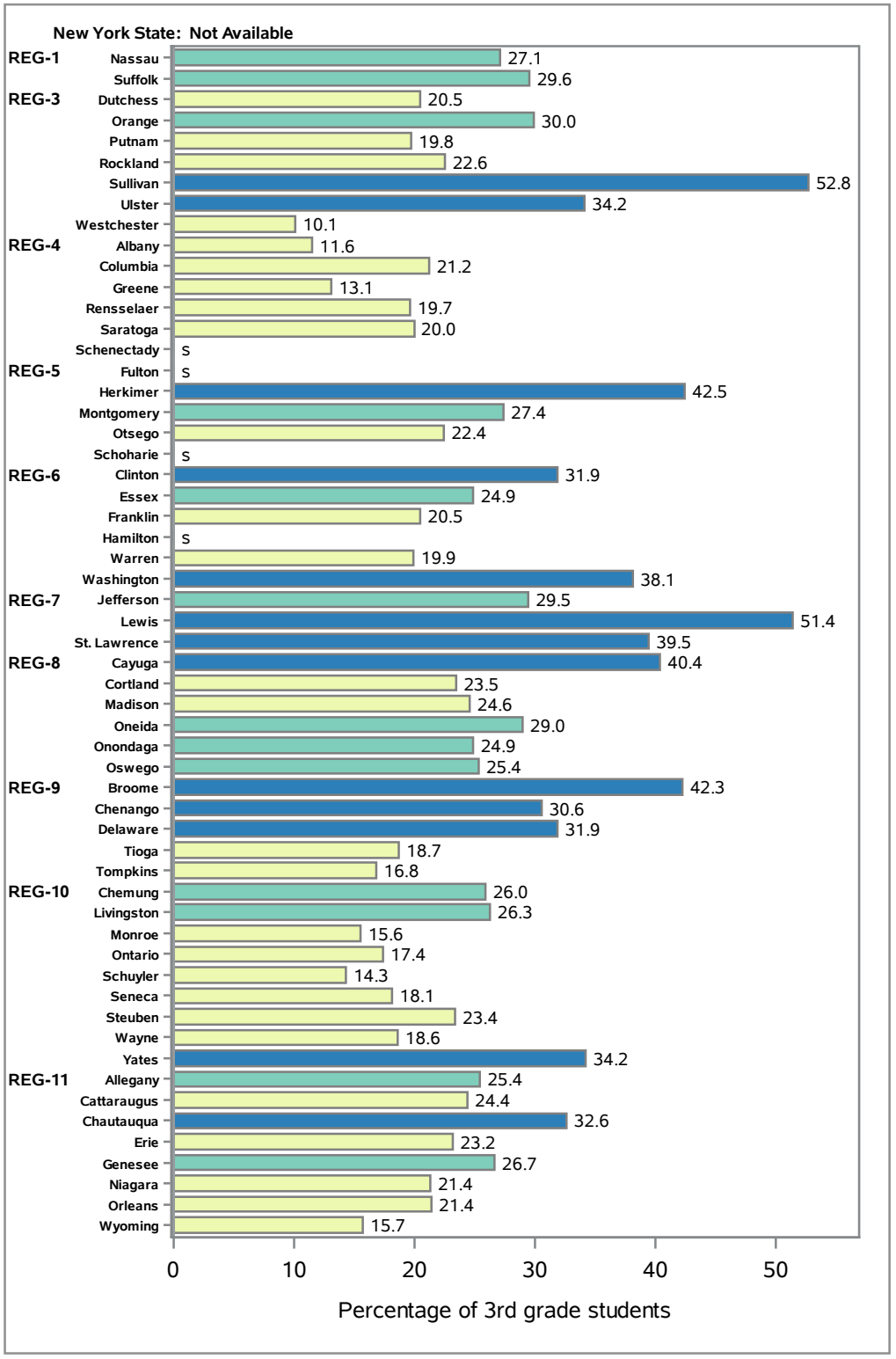

Percentage of Medicaid enrollees with at least one preventive dental visit within the last year 2012-2014



Percentage of Medicaid enrollees
Counties Are Shaded Based On Quartile Distribution

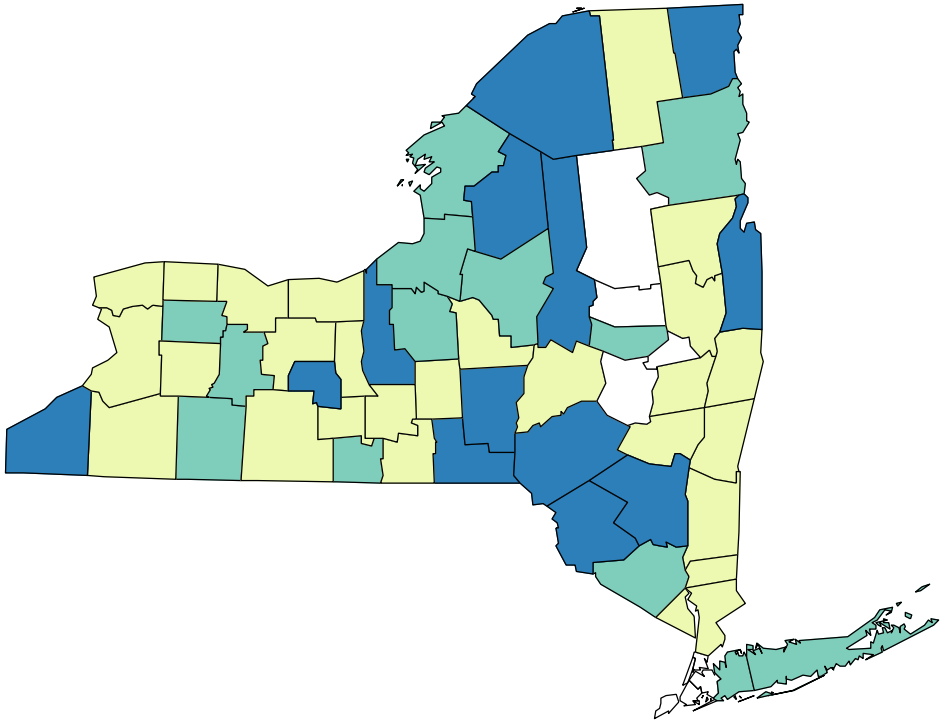
- Data not available
- 0 - < 20.4 : Q1
- 20.4 - < 22.3 : Q2
- 22.3 + : Q3 & Q4

Source: 2012-2014 NYS Medicaid Program Data as of July, 2015




Percentage of 3rd grade children with untreated caries

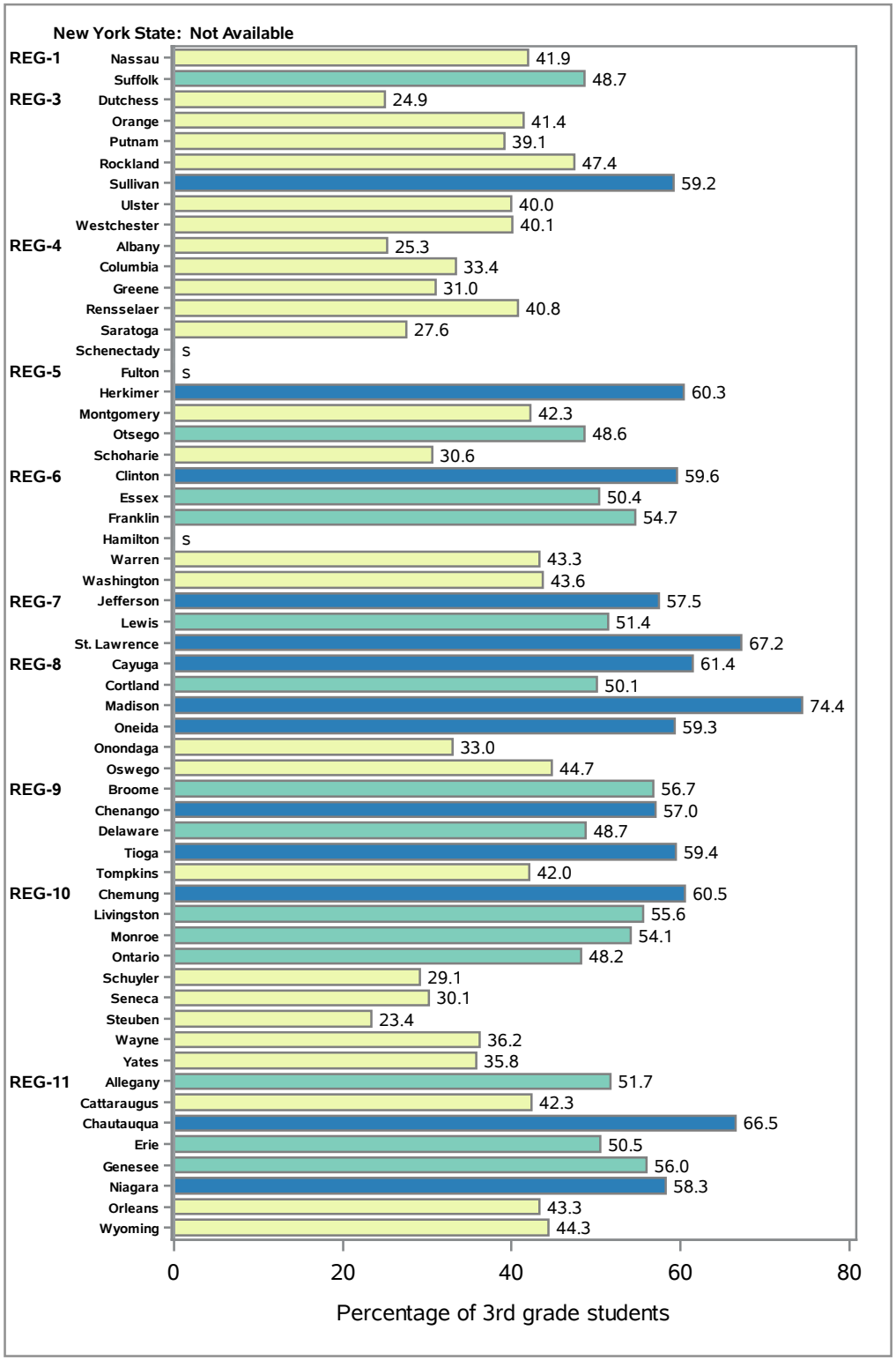
2009-2011



Percentage of 3rd grade students
Counties Are Shaded Based On Quartile Distribution

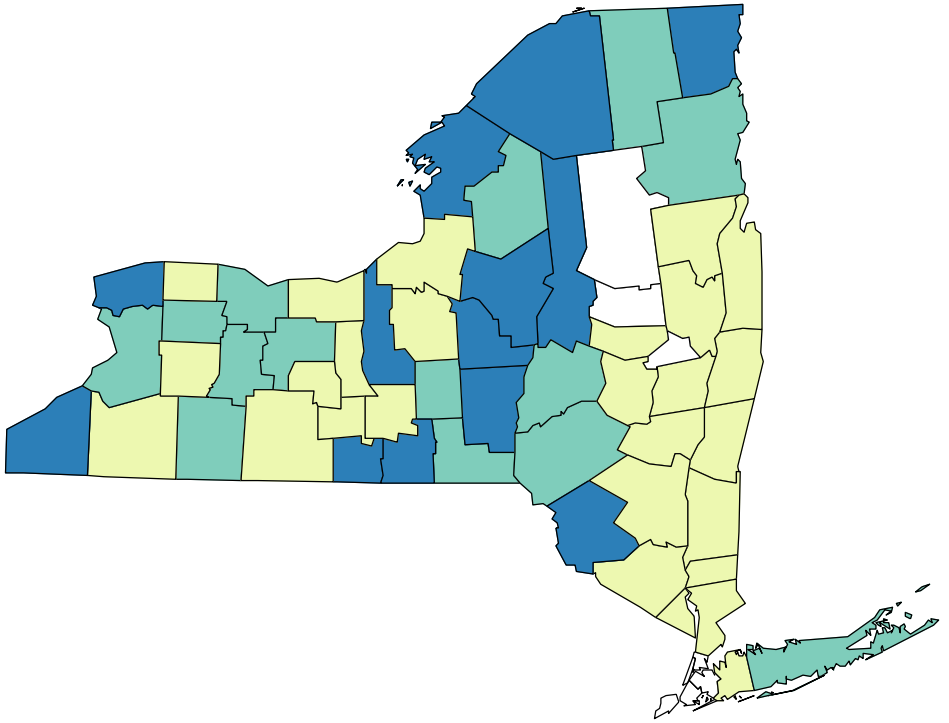
- Data not available
- 0 - < 24.6 : Q1 & Q2
- 24.6 - < 30.0 : Q3
- 30.0 + : Q4

Source: 2009-2011 Bureau of Dental Health Data as of August, 2012




Percentage of 3rd grade children with caries experience

2009-2011



Percentage of 3rd grade students
Counties Are Shaded Based On Quartile Distribution

- Data not available
- 0 - < 47.8 : Q1 & Q2
- 47.8 - < 56.7 : Q3
- 56.7 + : Q4

Source: 2009-2011 Bureau of Dental Health Data as of August, 2012

# APPENDIX E: Survey and Interview Tools

Nancy McGraw, LCSW, MBA
Public Health Director

Lise Kennedy, RN, BSN, MS
Director of Patient Services

Sullivan COUNTY CATSKILLS
*Mountains of Opportunities*

Public Health

**Sullivan County Public Health Services**
**PO Box 590, 50 Community Lane**
**Liberty, NY 12754**
**Phone: (845) 292-5910**
**Fax #: (845) 513-2276**

March 11, 2016

Dear Dental Provider,

Recently a press conference at the Government Center was held to announce a new Oral Health Coalition in Sullivan County to improve the oral health of the county's children. You are probably painfully aware that the most recent New York State Department of Health third grade oral health survey conducted in Sullivan County revealed that 52.8% of third graders had untreated dental caries, as opposed to 24% for New York State as a whole.

As a dental provider, you must be as concerned as we are about this. One of the first steps we are taking as a Coalition is to get a clearer picture of the overall oral health situation in our county. We will do this by conducting a comprehensive assessment of the oral health needs, gaps, barriers and resources in Sullivan County, particularly for children and pregnant women.

We have contracted with "Health Promotion Strategies" (HPS) to develop this assessment. I am writing to ask for the cooperation of your practice in answering our questions for dental practices in an online survey tool developed by HPS in conjunction with Public Health, and found at this address: https://www.surveymonkey.com/r/Sullivan-dentist-survey

If you do not have internet access, HPS can conduct a 15 minute phone interview to go over the questions as an alternative. Please call them at 845-332-2247 or email them at strategy123go@gmail.com to set this up. We would like to have this survey completed by March 20 at the latest, as the Oral Health Assessment final publication will be March 31.

We want to use the information from you for two purposes. The first will be in an aggregate report as part of the overall assessment of available resources and unmet needs countywide. Your practice will not be identified in the report. The other purpose for which some of the survey results will be used is to have a practical resource list available internally to use for referring people as needed if they meet the criteria for eligibility as set by your practice.

Your cooperation is important and appreciated. Feel free to contact me with any questions or concerns and I thank you very much in advance for your assistance! Please let me know if you would like an electronic copy of the completed Oral Health Survey.

Sincerely,

Nancy McGraw

Nancy McGraw, LCSW, MBA
Public Health Director

NM:ca

| | | | | |
|---|---|---|---|---|
| Certified Home Health Agency | Long Term Home Health Care Program | Children with Special Health Care Needs Program<br>Early Intervention Program/Pre-School Program<br>Physically Handicapped Children's Program | Women, Infants & Children (WIC) Program | Healthy Families of Sullivan Program |
| Communicable Disease Program | Tuberculosis Control Program | Sexually Transmitted Disease Program<br>HIV Counseling & Testing | Immunizations | Maternal Child Health |
| | | Bilingual Outreach Worker Program | | Community Health Worker Program |

Sullivan County is an Affirmative Action, Equal Opportunity Employer

## Dental Practice Survey for Countywide Oral Health Assessment

Information about Dental Practice Specialty and Capacity

**Health Promotion Strategies has been asked to compile this information to assist in assessing the oral health needs, resources and barriers in Sullivan County. The first part of this survey is basic information about your dental practice.**

1. List the practice's specialty or specialties, if any.

* 2. How many Full Time Equivalent (FTEs) dentists are in your Sullivan County office(s)?

* 3. How many FTE Dental Hygienists are in your Sullivan County office(s)?

## Dental Practice Survey for Countywide Oral Health Assessment

Maternal Child Health questions

**These questions are in regard to office policies about treating pediatric and pregnant patients residing in Sullivan County. The information that you give us will be used in the aggregate for the Oral Health Assessment but the practice name will not be identified there. It will also be used for for an internal updated resource list for the purpose of referring eligible patients in Sullivan County to your practice.**

* 4. Does the practice educate parents about recommended dental health practices for infants and children?

- Yes
- No

* 5. Does the practice treat children?

- Yes
- No

6. If the practice treats children, what is the youngest age at which they can be seen (specify months or years)?

* 7. Does the practice treat pregnant women?

- Yes
- No

Comments

8. If the practice treats pregnant women, is it for routine care or emergency care only?

- Routine Care
- Emergency Care Only

## Dental Practice Survey for Countywide Oral Health Assessment

### Office policies

**This page has to do with additional office policies. This information will be used in the aggregate for the Oral Health Assessment but the practice name will not be identified there. It will also be used for for an internal updated resource list for referring eligible Sullivan County patients to your practice.**

* 9. Does the practice accept new patients who have dental insurance?

10. If the practice accepts new patients, what is the most common wait time for a new appointment?

- Within 24 hours
- 1-3 days
- 4-7 days
- 1-2 weeks
- 2 weeks or longer
- Other (please specify)

* 11. Does the practice accept new patients who have no dental insurance?

* 12. Does the practice continue to treat existing patients if they lose their dental insurance?

Comments

13. If the practice accepts and/or continues to treat existing patients without dental insurance, does the practice:

- Make payment arrangements?
- Charge a sliding scale fee?
- Do Both?
- Do Neither?

* 14. What dental insurances does the practice accept? Please list all plans accepted including specific Medicaid and Child Health Plus plans accepted.  If you do not accept any, please write that in the first text box below :)

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## Dental Practice Survey for Countywide Oral Health Assessment

Observations and Concerns about County Oral Health

**Professional experience and input requested**

15. From your own professional practice experience choose up to three of the issues below that concern you the most.

- [ ] Transportation issues prevent people from getting to appointments
- [ ] People do not have dental insurance
- [ ] People have dental insurance but cannot afford the co-pays and deductibles
- [ ] People do not come for preventive dental care and end up needing emergency treatment
- [ ] There is a shortage of pediatric dentists in the county
- [ ] There are a shortage of dentists who will accept low income patients
- [ ] Parents do not bring their children in for regular care
- [ ] People eat and drink sugary foods and beverages that ruin their teeth
- [ ] People feed their children sugary foods and beverages that ruin their teeth
- [ ] Pregnant women neglect receiving dental care
- [ ] Other (please specify)

* 16. Which ONE of the three answers you have chosen in the previous question, in your professional opinion, is the single greatest barrier in Sullivan County to improved oral health countywide? Feel free to expand upon this further here.

* 17. Third graders in Sullivan County were found during a 2009-2011 New York State Department of Health oral health survey to have twice the rate of untreated dental caries than the rest of the state. What ideas or suggestions do you have for Public Health Services and the Sullivan County Oral Health Coalition to improve this terrible situation countywide?

* 18. If not already involved, would your practice like to learn more about involvement in the Sullivan County Oral Health Coalition?

- ◯ Yes
- ◯ No
- ◯ The practice is already involved but wants to know how to help more

Any Comments

## Dental Practice Survey for Countywide Oral Health Assessment

### Practice contact information

**Thank you for providing Public Health Services with up to date contact information for your practice.**

19. If the practice has an email address that Public Health Services may use to contact staff, please provide it here:

20. If the practice has a fax number that Public Health Services may use to contact staff, please provide it here:

* 21. Practice name, address, and phone information

**Practice Name**

**Address**

**City/Town**

**State/Province**

**ZIP/Postal Code**

**Phone Number**

# School Nurse Oral Health Survey

## School Oral Health services and status of student oral health

**This survey has been compiled at the request of Sullivan County Public Health Services and the Sullivan County Oral Health Coalition. Your answers will help inform a broader information and data gathering effort to create an Oral Health Assessment for Sullivan County.**

* 1. Name of school:

* 2. What grade students are included in this school? Choose all that apply.

- [ ] Preschool
- [ ] Kindergartners through 3rd graders
- [ ] 4th graders through 6th graders
- [ ] 7th graders through 9th graders
- [ ] 10h graders through 12th graders

Other (please specify)

* 3. What oral health services are provided to the students? Check all that apply.

- [ ] Dental hygienist services
- [ ] Fluoride rinses
- [ ] Fluoride tablets
- [ ] Dental sealants
- [ ] Dental health education
- [ ] Dental screening and exams
- [ ] Restorative services
- [ ] Does PRASAD Children's Dental Health Program treat students at the school?
- [ ] None

Other (please specify)

* 4. What is the one most frequent kind of oral health issue that you observe among the students?

- ◯ Mouth and tooth injuries from sports.
- ◯ Untreated caries causing dental pian.
- ◯ Abcesses.
- ◯ Other: please explain in comment box below

Other (please explain your answer to the most frequent oral health issue you see that is not specified in the choices above)

* 5. Are you aware of any students who have missed school because of dental problems?

- ◯ Yes
- ◯ No

Other (please specify)

* 6. What barriers do students face in obtaining regular dental care?

* 7. What do you think needs to happen to improve oral health in this school?

* 8. Are you aware of the 2009-2011 third grade oral health survey conducted by NYSDOH and its findings for Sullivan County?

- ◯ Yes
- ◯ No

Other If your answer is "no", would you like to learn more ?

* 9. Are you aware of the Sullivan County Oral Health Coalition?

- ◯ Yes
- ◯ No

Are you interested in participating in the coalition?

* 10. Your information

| | |
|---|---|
| **Name** | |
| **Position or Title** | |
| **School address** | |
| **City/Town** | |
| **ZIP/Postal Code** | |
| **Email Address** | |
| **Phone Number and extension** | |

Nancy McGraw, LCSW, MBA
Public Health Director

Lise Kennedy, RN, BSN, MS
Director of Patient Services

**Sullivan County Public Health Services**
**PO Box 590, 50 Community Lane**
**Liberty, NY 12754**
**Phone: (845) 292-5910**
**Fax #: (845) 513-2274**

For Immediate Release
March 15, 2016

## Input Needed: Dental Health Survey

Sullivan County Public Health Services is conducting a Dental Health Needs Assessment. We need your help to answer a short **anonymous** survey about the dental health of children or pregnant women, including women who have recently given birth. This may be in regard to yourself, to family members or to very close personal friends.

The survey is brief and will take about 5 minutes. Please click the link below or go online to the Department of Public Health Services main web page at www.co.sullivan.ny.us by clicking on the tab for Departments/Public Health Services, and click on the **Dental Survey for County Residents** link by March 20.

https://www.surveymonkey.com/r/Sullivan-Oral-Health-Survey

Thank you so much for your help as we work to improve dental health in Sullivan County! For questions please contact staff at Sullivan County Public Health Services at (845) 292-5910 and press option 0.

###

## Oral Health in Sullivan County Children and Pregnant Women

### 1. Oral Health during entire pregnancy (should be answered for postpartum up to 1 year after delivery)

**This page asks your familiarity about issues of access to dental care, barriers to dental care, and the oral health status of yourself, or women in your close circle during the entire pregnancy .**

1. **If this is not about your own oral health status during a recent pregnancy, only answer if you are VERY familiar with the oral (dental) health issues of a recently pregnant close family member and/or friend. Otherwise, skip to page 2.**

- ◯ This is about my own oral health during pregnancy
- ◯ This is about a close family member or friend's oral health during pregnancy
- ◯ **NEITHER ONE: SKIP ALL THE REST OF THE QUESTIONS ON THIS PAGE AND GO DIRECTLY TO PAGE 2 BY CLICKING ON THE "NEXT" BUTTON AT THE BOTTOM OF THIS PAGE**

2. Rank oral health during pregnancy:

| Excellent | Very Good | Good | Fair | Poor | I don't know |
|---|---|---|---|---|---|
| ◯ | ◯ | ◯ | ◯ | ◯ | ◯ |

3. Visit to a dental office for teeth cleaning during pregnancy?

- ◯ Yes
- ◯ No

4. See a dentist for diagnosis or treatment during pregnancy?

- ◯ Yes
- ◯ No

5. If oral health was less than good during pregnancy, which of the choices below were the reason(s)? Choose as many as apply:

- [ ] Gingivitis (swollen, inflamed gums)
- [ ] Cavities
- [ ] Loose teeth
- [ ] Tooth abcess
- [ ] Mouth Sores
- [ ] Mouth or tooth injury (explain in comments box)

Explain mouth or tooth injury

6. Before the pregnancy, were there regular teeth cleanings and dental care?

- ( ) Yes
- ( ) No

7. Drink any of these sweet beverages during pregnancy?

- [ ] Soda
- [ ] Iced tea
- [ ] "Fruity" drinks like "HiC" or "Kool-aid"
- [ ] Milkshakes
- [ ] Sugar sweetened coffee or tea
- [ ] Juice

Other (please specify)

8. If no oral care such as teeth cleanings or dental care were received, please check all the reasons that apply:

- [ ] No transportation
- [ ] Could not find a dentist who would accept a pregnant patient
- [ ] Had a regular dentist but he or she would not see her while she was pregnant
- [ ] No dental insurance
- [ ] Had dental insurance but could not afford co-pay or deductible
- [ ] Could not find someone to babysit
- [ ] Could not take time off from work
- [ ] Fearful of dental office
- [ ] Did not feel it was necessary
- [ ] Other (please specify)

9. Choose the maternal age during pregnancy.

- ( ) Younger than 15 years
- ( ) 15-17
- ( ) 18-25
- ( ) 26-35
- ( ) 36-45
- ( ) Older than 45 years

10. Race of mother

- ( ) Black
- ( ) White
- ( ) Asian Pacific Islander
- ( ) American Indian or Alaskan Native

11. Ethnicity of mother

- ( ) Hispanic
- ( ) Non-Hispanic

## Oral Health in Sullivan County Children and Pregnant Women

### 2. Infants over 6 Months and Children up to age 18

**Please answer only for the youngest child. Please note: "regular" dentist means a dentist who the child sees on a routine basis who is the considered his or her own dentist.**

12. Answer these questions for your own child or if you are VERY familiar with the oral (dental) health issues of the child in your family or close circle.

- ◯ This is my child
- ◯ This is another child about whose oral health I am VERY familiar (for example, Grandchild)
- ◯ **NEITHER: IF NEITHER OF THESE IS TRUE, CLICK ON THE BUTTON AT THE BOTTOM OF THE PAGE TO EXIT THIS SURVEY. THANK YOU VERY MUCH.**

13. Does the child have a regular dentist?

- ◯ Yes
- ◯ No

14. If yes, how long ago was the last visit for a dental check up or cleaning? (Infants at least 6 months are recommended to be checked)

- ◯ Within the last 6 months
- ◯ Within the last year
- ◯ Within the last 2 years
- ◯ Longer than 2 years

15. Has the child ever had to see a dentist or go to the emergency room for tooth or mouth problems?

- ◯ Yes
- ◯ No

16. If the child did see a dentist for a problem, how long was the wait for an appointment?

- ◯ same day
- ◯ 24 hours
- ◯ 2 days - 4 days
- ◯ 5 days to 1 week
- ◯ 1 - 2 weeks
- ◯ more than 2 weeks
- ◯ Other (please specify)

17. Does the child brush his or her teeth (or have their teeth brushed for them)?

- ◯ Yes
- ◯ No

18. If yes, how often?

- ◯ Less than once a day
- ◯ Once a day
- ◯ Twice a day
- ◯ More than twice a day

19. Does the child drink sweet drinks such as juice, Kool-aid, HiC, or flavored water or sports drinks?

- ◯ Yes
- ◯ No

20. If yes, how often?

- ◯ Less than once a day
- ◯ Once a day
- ◯ Twice a day
- ◯ More than twice a day

21. Was the baby/toddler/child routinely allowed to go to sleep holding his or her own bottle?

- ◯ Yes
- ◯ No

22. Has the child ever taken fluoride drops or tablets prescribed by a doctor?

- ◯ Yes
- ◯ no

23. Age of child

- ◯ 6 months to 1 year
- ◯ 13 to 24 months
- ◯ 25 to 36 months
- ◯ 3 - 4 years
- ◯ 4 - 5 years
- ◯ 6-12 years
- ◯ 13-18 years

24. Race of child

- ◯ Black
- ◯ White
- ◯ Asian Pacific Islander
- ◯ American Indian or Alaskan Native

25. Ethnicity of child

- ◯ Hispanic
- ◯ Non-Hispanic

HEALTH PROMOTION STRATEGIES

healthpromotionstrategies.org 845.332.2247 strategy123go@gmail.com

Oral Health Assessment Questions for WIC clients
March 2016

**For the interviewer:** **Read this first:**

***"May I ask some questions about you and/or your children's experiences with dental health? We are doing a study in the county about problems people are facing with dental care. It is voluntary to answer the questions and not answering them will not affect your WIC benefits. Your name(s) and your children's name(s) will not be used in our report. May I have your permission to ask these questions"?***

**If the answer is "yes", proceed.** Use the separate form(s) provided to document all answers.

***Each form must be numbered in this way:***

Form numbering: date in MM/DD/YY format followed by initial of interviewer, followed by number of client (every data form has a new form number). For example, If Joan Smith fills forms out for a postpartum mom and her 2 eligible WIC children on March 12, the form #s will be 03/12/16JS1, 03/12/16JS2, and 03/12/16JS3. This guarantees a unique identifier for each person and this will help with any questions later and also help eliminate duplication and error.

**Note:** If the parent states they do not have a dentist or they or their child are having dental problems, they should be provided with information about dentists who they can contact for help, and if practical, helped to set up an appointment

March 4, 2016

HPS: CR

**Please read script requesting permission to ask this information before proceeding!**

| **Oral Health Assessment WIC Data Collection Tool Baby (6 months +) or Child up until 5th birthday** | |
|---|---|
| **Ask these questions for each child or baby** ***Use One form for each baby or child in a family*** | **Circle correct answer below** |
| 1. Does the child have a regular dentist? | Yes No |
| 2. If yes, how long ago was the last visit for a dental check up or cleaning (go down list as far as appropriate, based on age of child)? | Within the last 6 months |
| | Within the last year |
| | Within the last 2 years |
| | |
| 3. Has your child ever had to see a dentist or go to the emergency room for mouth or tooth problems? | Yes No |
| 4. Does the child brush his/her teeth or have them brushed for him or her? | Yes No |
| 5. **If Yes,** how often? | |
| | Less than once a day |
| | Once a day |
| | Twice a day |
| | More than twice a day |
| 6. Does your child drink sweet drinks such as juice, kool-aid, HiC or flavored water or sports drinks? | Yes No |
| 7. **If Yes**, how often? | |
| | Less than once a day |
| | Once a day |
| | Twice a day |
| | More than twice a day |
| | |
| 8. Has your child ever taken fluoride drops or tablets prescribed by a doctor? | Yes No |
| | |
| *Continue on back of page: (WIC staff: answer the rest of these questions from your own observations and the participant's record). Please also enter Form # on back.* | |

Form numbering: date in MM/DD/YY format followed by initial of interviewer, followed by number of client (every data form has a new form number). For example, If Joan Smith fills forms out for a postpartum mom and her 2 eligible WIC children on March 12, the form #s will be 03/12/16JS1, 03/12/16JS2, and 03/12/16JS3. This guarantees a unique identifier on each.

**Please read script requesting permission to ask this information before proceeding!**

| Continued from front: | |
|---|---|
| Age | 6 months to 1 year |
| | 13 months to 24 months |
| | 25 months to 36 months |
| | 3-4 years |
| | 4 years up until 5th birthday |
| | |
| Race | Black |
| | White |
| | Asian Pacific Islander |
| | American Indian or Alaskan Native |
| | |
| Ethnicity: | Hispanic |
| | Non-Hispanic |
| | |

**Form #_____**

Form numbering: date in MM/DD/YY format followed by initial of interviewer, followed by number of client (every data form has a new form number). For example, If Joan Smith fills forms out for a postpartum mom and her 2 eligible WIC children on March 12, the form #s will be 03/12/16JS1, 03/12/16JS2, and 03/12/16JS3. This guarantees a unique identifier on each.

**Please read script requesting permission to ask this information before proceeding!**

| Oral Health Assessment WIC Data Collection Tool Mother up to 1 Year Postpartum | | |
|---|---|---|
| **For postpartum women up to one year after the baby's birth** | **Circle correct answer below** | |
| 1. Have you ever had your teeth cleaned? | Yes | No |
| 2. **If yes:** Did you have your teeth cleaned during your last pregnancy? | Yes | No |
| 3. Were you seen by a dentist during your last pregnancy? | Yes | No |
| 4. Did you need to see a dentist for a problem during your last pregnancy? | Yes | No |
| 5. Do you have a dentist now? | Yes | No (see next) |
| | | |
| **(If No to #5)** please pick the one answer which is the **main** or **biggest** reason (only one): | Transportation is a problem | |
| | No dental insurance | |
| | Dental insurance but cannot afford the copay | |
| | Fearful of the dentist | |
| | other | |
| | | |
| *WIC staff: answer the rest of these questions from your own observations and the participant's record* | | |
| Maternal age: | <15 | |
| | 15-17 | |
| | 18 -25 | |
| | 26-35 | |
| | 36-45 | |
| | >45 | |
| | | |
| Maternal race: | Black | |
| | White | |
| | Asian Pacific Islander | |
| | American Indian or Alaskan Native | |
| | | |
| Maternal ethnicity: | Hispanic | |
| | Non-Hispanic | |

**Form #:_____**

Form numbering: date in MM/DD/YY format followed by initial of interviewer, followed by number of client (every data form has a new form number). For example, If Joan Smith fills forms out for a postpartum mom and her 2 eligible WIC children on March 12, the form #s will be 03/12/16JS1, 03/12/16JS2, and 03/12/16JS3. This guarantees a unique identifier on each.

# APPENDIX F: Best Practices and Practice Guidelines

# Bright Futures Preventive Services Prompting Sheet

| | Infancy | | | | | | | Early Childhood | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Age** | **NB** | **1st wk** | **1 mth** | **2 mth** | **4 mth** | **6 mth** | **9 mth** | **1 yr** | **15 mth** | **18 mth** | **2 yr** | **2½ yr** | **3 yr** | **4 yr** |
| Date | | | | | | | | | | | | | | |
| Measure Weight, Length, Head Circ | | | | | | | | | | | | | | |
| Plot Weight-for-Length | | | | | | | | | | | | | | |
| Measure Weight Height | | | | | | | | | | | | | | |
| Plot BMI percentile | | | | | | | | | | | | | | |
| Measure Blood Pressure | RA | RA | RA | RA | RA | RA | RA | RA | RA | RA | RA | RA | | |
| Metabolic | | | | | | | | | | | | | | |
| Development Screening (Standardized Tool) | | | | | | | Development | | | Development Autism | Autism | Development | | |
| Developmental Surveillance | | | | | | | | | | | | | | |
| Oral Health/Dental Home | | | | | | RA | RA | | | | | | | |
| Vision | RA | RA | RA | RA | RA | RA | RA | RA | RA | RA | RA | RA | | |
| Hearing | | RA | RA | RA | RA | RA | RA | RA | RA | RA | RA | RA | RA | |
| Anemia | | | | | RA | | | | | RA | RA | | RA | RA |
| Lead | | | | | | RA | RA | | | RA | | | RA | RA |
| Tuberculosis | | | RA | | | RA | | RA | | RA | RA | | RA | RA |
| Dyslipidemia | | | | | | | | | | | RA | | | RA |
| **Immunizations** See CDC & AAP websites for latest recommendations | | | | | | | | | | | | | | |
| **Anticipatory Guidance** | | | | | | | | | | | | | | |
| **Referrals** | | | | | | | | | | | | | | |

**Key:** **RA**= Action if positive risk assessment **Development** = Structured Developmental Screening **Autism** = Autism Specific Screening

HUGH SILK, MD, MPH, AND MARK DEUTCHMAN, MD

CME

Health problems of the mouth can affect the whole patient, making primary care physicians a natural ally.

# OFFERING Oral Health Services IN YOUR OFFICE

Evidence that poor oral health is connected to poor systemic health has grown over the last decade. Children with dental caries often face pain and nutritional problems, and caries build the foundation for adult dental disease. In adults, periodontitis, or deep inflammation of the gingiva, is strongly linked to poor diabetes control and is associated with vascular disease, arthritis, obesity, and adverse pregnancy outcomes. These connections underscore the value of addressing this major area of patient care in primary care practices.

Offering these services might be not only effective preventive care but also remunerative depending on the makeup of a physician's pediatric population. Although payer policies limit physicians' ability to be reimbursed for oral health services, four-fifths of state Medicaid programs reimburse for child oral health care.

The Institute of Medicine has defined roles for family physicians and other non-dental health care professionals in two reports on advancing oral health care.[1,2] Also, Healthy People 2020 made oral health one of its top nine health indicators. While bold in mission, none of these documents provide detailed guidelines for medical clinicians, so this article will try to help prepare physicians to incorporate oral health services in their practices.

## The family doctor and early childhood caries

Treating children and early childhood caries from birth through age 5 has generated the most evidence of beneficial intervention. Recently, the U.S. Preventive Services Task Force (USPSTF) recommended (level "B" – "moderate certainty that the net benefit is moderate to substantial") that primary care providers apply fluoride varnish to the primary teeth of children.[3]

Many family doctors have been addressing the oral health of children for years. Researchers have shown that primary care doctors can apply fluoride varnish and examine the mouth accurately to identify caries.[4] Moreover, they can do this work efficiently in their offices, enjoy tackling this problem, and find that the efforts result in fewer cavities.[5,6]

The American Academy of Pediatrics (AAP) suggests that primary care physicians should discuss oral health with parents starting when children are 6 months of age, which coincides with when primary teeth erupt. Such visits should include a risk history for caries, an oral exam, dental hygiene and diet advice, an assessment of the need for systemic fluoride, and a referral to a dentist with the first dental visit before the child's first birthday. Family physicians can start this discussion even earlier with women of childbearing age, as maternal oral health is a strong predictor of a child's oral health. Dietary patterns, oral hygiene practices, and oral flora that cause tooth decay are all passed along from the primary caregiver to the child.

## Getting started

In order to make providing oral health services easier and less time-consuming, we have involved the entire staff in

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Children with dental caries often face pain and nutritional problems, and caries build the foundation for adult dental disease.

Physicians should discuss oral health with parents starting when a child's teeth erupt at six months.

Adding oral exams and fluoride varnish application to well-child visits is relatively simple and most likely to be reimbursed.

Practices should add oral health care information to their documentation, website, and patient education materials.

the process. For example, consider the steps taken to assess and manage the oral health of a 1-year-old patient in the context of a well-child visit:

First, the front-desk staff determines whether the child is covered by Medicaid or another payer that pays for oral health screens and fluoride varnish or whose family wants to pay out-of-pocket for these services. If so, staff can communicate this information by adding a tooth-shaped sticker or other marker to the patient's paperwork for the visit. As part of the intake process, the medical assistant or nurse can help parents complete a caries risk assessment verbally or by questionnaire. The AAP has an easy-to-use risk assessment tool, which can be downloaded at https://www2.aap.org/oralhealth/RiskAssessmentTool.html.

During the visit, the family physician or midlevel provider can perform the oral exam using the knee-to-knee approach (sit facing the parent/guardian with knees touching, sit the child in the parent/guardian's lap, and lay the child's head back into the examiner's lap) and offer dietary and hygiene advice. Providing this exam and oral health advice can be learned easily online while earning free CME credit through the American Academy of Family Physicians (AAFP)-endorsed Smiles for Life curriculum. (See "Features of Smiles for Life.")

After the oral exam, the medical assistant or nurse can apply fluoride varnish as well as provide any necessary vaccinations, patient education, or other services required in follow up to the exam. This arrangement allows the physician or midlevel provider to move more quickly on to the next patient and helps to preserve productivity. Applying varnish takes less than a minute and is easily learned. Many states have free training programs that are grant funded. Check out the AAP state information and resource map for details (http://www2.aap.org/oralhealth/State.html) or seek out your state's oral health programs (http://www.astdd.org/state-programs/). The varnish costs about $1 an application, has a pleasant flavor for children, and is not contraindicated in patients' whose community water supply is fluorinated. The child can eat or drink immediately after treatment (although it's advisable to wait at least one hour before tooth brushing). To maintain an efficient flow in the office, practices should keep fluoride varnish supplies in the exam rooms or in an easy-to-carry toolbox that can be transported from a central location into the exam room. To minimize documentation fatigue, staff members should share this responsibility, with each documenting the portion of the service he or she provided.

Keep the documentation simple whether you use paper charts or an electronic health record (EHR). For example, add prompts to your EHR for well visits to include oral health findings, advice, and referrals. In the exam section of the record, add a check box to indicate whether teeth and gums are normal or abnormal. In the advice section, add check boxes to indicate whether nutrition and dental hygiene advice are given, as well as whether a dental referral is made. Other ideas include loading patient education about oral health into your EHR for easy printing or keeping paper information sheets in exam rooms. You might also add advice on oral health to your practice website. You can find high-quality resources on the patient-oriented websites of the American Dental Association (www.mouthhealthy.org) and the American Academy of Pediatric Dentistry (www.mychildrensteeth.org). Incorporating oral health into your office as a quality improvement project could easily be used as Part IV of your American Board of Family Medicine (ABFM) Maintenance of Certification (MOC) requirement. This can be a self-initiated MOC project; the ABFM is working with the AAP to add a new oral health option for Part IV in the future.

## Getting paid

Forty-three states pay medical providers through their Medicaid programs for address-

ing child oral health, including those services provided in the context of a well-child visit. These programs pay between $11 and $78 when provided between the time a patient's teeth erupt up to age 21, depending on the state and whether reimbursement is offered for screenings, fluoride varnish application, or both.[7] Most states pay for the service two to four times per year based upon the child's risk. For example, an office in Nevada applying fluoride varnish for 20 eligible children per week would increase its revenue by $55,432 annually at that state's reimbursement rate of $53.30. In Washington state, where Medicaid reimburses for fluoride varnish plus two additional oral health services, the same provider is paid $13.25 for the fluoride varnish application, $29.46 for the oral exam, and $27.58 for the oral health risk assessment. This would generate $73,102 annually for 20 children a week in addition to reimbursement for the well-child visits themselves (see "Example of dental care reimbursement"). To explore reimbursement rates for your state, go to http://www2.aap.org/oralhealth/State.html.

For children not covered by Medicaid, offices could offer the fluoride varnish application to patients' families for an out-of-pocket cost equal to what Medicaid would pay. Note that the USPSTF recommends fluoride varnish for all children under 6 years, but most patients not on Medicaid are at lower risk for caries.[8] Of course all children should be given an oral health screening, their caregivers should be advised about nutrition and oral hygiene, and the patient should be referred to a dentist, regardless of reimbursement, as part of comprehensive well-child care.

## Oral health for all ages

Oral health affects individuals in different ways across the life cycle. While there is no specific Medicaid reimbursement available at this time for patients other than children, addressing oral health will improve the overall health in other age groups as well.

For example, gum disease may flare during pregnancy, particularly in women with poor oral hygiene. Periodontitis has been associated with preterm labor and low infant birth weight, and family physicians can screen prenatal patients at the intake visit with a few questions and a quick exam. Some state Medicaid programs include dental benefits for pregnant women. Physicians are encouraged to record their findings and refer pregnant patients to a dentist, an approach promoted by the American College of Obstetrics and Gynecology. The National Maternal and Child Oral Health Resource Center has developed some handouts that patients can take to their dentist explaining what dental care prenatal patients can receive (http://www.mchoralhealth.org/PDFs/OralHealthPregnancyResGuide.pdf) and what dental treatment is safe during pregnancy (http://www.mchoralhealth.org/PDFs/OralHealthPregnancyConsensus.pdf).

Adolescents benefit from basic oral care advice, including caution about oral piercings, which can lead to gum erosion, intraoral infections, and fractured teeth. Physicians can make this a part of these patients' annual visits, remembering to document the discussion and providing handouts. Sports clearance visits should include discussion of dental injury prevention, such as using mouth guards.

Family physicians should address periodontitis during chronic care visits for patients with diabetes, vascular disease, and arthritis. In addition to checking blood pressure and doing foot exams, oral health can become part of the protocol for diabetes visits. It's also an easy topic to cover during group visits. Recent studies have reported that addressing periodontitis can save a patient with diabetes an average of $2,840 in avoided hospitalizations and office visits and can save a patient with cerebral vascular disease $5,681.[9]

Many geriatric patients are on far too many medications. Some of the common medications prescribed can cause a decrease in saliva flow, exacerbating gum disease and increasing adult cavities, particularly in teeth

- Forty-three states pay primary care providers for child oral health care through Medicaid.
- Offer oral health care to non-Medicaid families with out-of-pocket costs equal to what Medicaid would pay.
- Patients of all ages and health status can benefit from oral health care services.

### FEATURES OF SMILES FOR LIFE

**www.smilesforlifeoralhealth.org**

Six hours of free web-based CME training are available through a downloadable iOS application suitable for physicians, nurses, physician assistants, medical assistants, students, pharmacists, and dental professionals. The eight modules, which take about 45 minutes each to complete, cover the relationship between oral and systemic health, child oral health, adult oral health, geriatric oral health, acute dental problems, oral health for pregnant patients, the oral examination, the use of fluoride varnish, caries risk assessment, and counseling.

with exposed roots not protected by enamel. Patients on antihistamines, anticholinergics, antidepressants, and some antihypertensives should be particularly counseled about the importance of oral hygiene and the need to avoid sucking on sugary candy to relieve dry mouth. The anticipatory guidance that physicians provide for a multitude of health behaviors can readily include an oral health component. The power of this guidance is increased if patients hear the same message from both their physician and their dentist.

Treating oral health problems in chronically ill patients can help them avoid significant future care costs.

Oral health care guidance gains credibility when it comes from both the patient's physician and dentist.

Physicians are a natural fit to provide oral health care services.

## Why the family doctor?

Some will ask, "But why the family doctor? Shouldn't dentists be doing all of this?" In fact, there are many barriers to accessing dental care, including transportation, lack of Medicaid dental providers, lack of dental coverage in general and among Medicare patients in particular, and a lack of awareness by individuals about the importance of oral health. Only 43 percent of people age 2 years and older had a dental visit in the past 12 months.[10] For those older than age 65, only 30 percent[11] have dental insurance. And even among those with full dental coverage under Medicaid, only 35 percent had a dental visit last year.[12]

Although patients may not be seeing the dentist, they are seeing their personal physician. Based on immunization schedules and standard well-child visit intervals, family doctors see children an average of 11 times by the age of three, and many adults see their physician every one or two years for periodic checkups. We provide a home for these patients' total health, which includes oral health. In many geographic areas with limited access to dentists who are willing to see young children, prenatal patients, or those with special needs, primary care physicians remain the major or only source of oral health care and advice.

Offering oral health screens and dental hygiene advice is not difficult nor is it time consuming. In addition to adding fluoride varnish applications to well-child exams, offering oral health care services to your patients is meaningful and adds reimbursement dollars to the office. FPM

### EXAMPLE OF DENTAL CARE REIMBURSEMENT

Here's a breakdown of what a practice could receive from Medicaid in Washington state for a well-child visit with an established patient:

| | |
|---|---|
| Well-child visit (V20.2, 9938x or 9939x) | $56.40-$108.65 |
| Fluoride varnish application (D1206) | $13.25 |
| Oral exam | $29.46 |
| Oral health risk assessment | $27.58 |
| **Total** | **$126.69-$178.94** |

Source: Washington Health Care Authority; American Academy of Pediatrics.


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Send comments to **fpmedit@aafp.org**, or add your comments to the article at **http://www.aafp.org/fpm/2014/0700/p21.html**.

Oral Health Care during
Pregnancy and Early Childhood

# Practice Guidelines

New York State Department of Health
August 2006

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# Executive Summary

Health care professionals should recognize the importance of good oral health and make certain that the need for dental care during pregnancy and early childhood is met. Pregnancy is a unique time in a woman's life and is characterized by complex physiological changes. These changes can adversely affect oral health during pregnancy. Pregnancy is also an opportune time to educate women about preventing dental caries in young children, one of the most common childhood problems. Evidence suggests that most young children acquire caries-causing bacteria from mothers. Improving the oral health of expectant and new mothers and providing oral health counseling may reduce the transmission of such bacteria from mothers to children, thereby delaying the onset of caries.

Emerging evidence shows an association between periodontal infection and adverse pregnancy outcomes, such as premature delivery and low birth weight. While some studies have shown that interventions to treat periodontal disease will improve pregnancy outcomes, conclusive clinical interventional trials are not yet available to confirm the preliminary results. Nevertheless, control of oral diseases improves a woman's quality of life and has the potential to reduce the transmission of oral bacteria from mothers to children.

Several organizations have undertaken efforts to promote oral health. The National Center for Education in Maternal and Child Health published *The Bright Futures in Practice: Oral Health* to promote and improve the health and well being of infants, children and adolescents. The American Dental Association, the American Academy of Pediatric Dentistry, the American Academy of Periodontology and the American Academy of Pediatrics have issued statements and recommendations for improving the oral health of pregnant women and young children.

To reinforce these recommendations and to provide guidance, the New York State Department of Health convened an expert panel of health care professionals who are involved in promoting the health of pregnant women and children. The panel reviewed literature, identified existing interventions, practices and guidelines, assessed issues of concern, and developed recommendations. Since it is highly unlikely that a sufficient number of studies will be available in the near future to make evidence-based recommendations for all clinical situations, the group relied on expert consensus when controlled studies were not available to address specific issues and concerns.

The panel developed separate recommendations for prenatal, oral health and child health professionals. While specific treatments require attention to individual clinical situations, these recommendations are intended to bring about changes in the health care delivery system and to improve the overall standard of care. The panel anticipates that these recommendations will be reviewed periodically and updated as new information becomes available. The panel recommendations are summarized on the following pages.

## RECOMMENDATIONS FOR ALL HEALTH CARE PROFESSIONALS

**All health care professionals should advise women that:**

- Dental care is safe and effective during pregnancy. Oral health care should be coordinated among prenatal and oral health care providers.
- First trimester diagnosis and treatment, including needed dental x-rays, can be undertaken safely to diagnose disease processes that need immediate treatment.
- Needed treatment can be provided throughout pregnancy; however, the time period between the 14th and 20th week is ideal.
- Elective treatment can be deferred until after delivery.
- Delay in necessary treatment could result in significant risk to the mother and indirectly to the fetus.

**All health care professionals should advise women that the following actions will improve their health:**

- Brush teeth twice daily with a fluoride toothpaste and floss daily.
- Limit foods containing sugar to mealtimes only.
- Choose water or low-fat milk as a beverage. Avoid carbonated beverages during pregnancy.
- Choose fruit rather than fruit juice to meet the recommended daily fruit intake.
- Obtain necessary dental treatment before delivery.

**All health care professionals should advise women that the following actions may reduce the risk of caries in children:**

- Wipe an infant's teeth after feeding, especially along the gum line, with a soft cloth or soft bristled toothbrush.
- Supervise children's brushing and use a small (size of child's pinky nail) amount of toothpaste.
- Avoid putting the child to bed with a bottle or sippy cup containing anything other than water.
- Limit foods containing sugar to mealtimes only.
- Avoid saliva-sharing behaviors, such as sharing a spoon when tasting baby food, cleaning a dropped pacifier by mouth or wiping the baby's mouth with saliva.
- Avoid saliva-sharing behaviors between children via their toys, pacifiers, etc.
- Visit an oral health professional with child between six and 12 months of age.

## RECOMMENDATIONS FOR PRENATAL CARE PROVIDERS

**Prenatal care providers are encouraged to integrate oral health into prenatal services by taking the following actions:**

- Assess problems with teeth and gums and make appropriate referral to an oral health care provider.
- Encourage all women at the first prenatal visit to schedule an oral health examination if one has not been performed in the last six months, or if a new condition has occurred.
- Encourage all women to adhere to the oral health professional's recommendations regarding appropriate follow-up.
- Document in the prenatal care plan whether the woman is already under the care of an oral health professional or a referral is made.
- Facilitate treatment by providing written consultation for the oral health referral (Appendix A).
- Develop a list of oral health referral sources that will provide services to pregnant women.
- Share appropriate clinical information with oral health professionals.
- Respond to any questions that the oral health professional may ask.

**Prenatal care providers may suggest the following to reduce tooth decay in pregnant women experiencing frequent nausea and vomiting:**

- Eat small amounts of nutritious foods throughout the day (Appendix B).
- Use a teaspoon of baking soda (sodium bicarbonate) in a cup of water as a rinse after vomiting to neutralize acid.
- Chew sugarless or xylitol-containing gum after eating.
- Use gentle tooth brushing and fluoride toothpaste to prevent damage to demineralized tooth surfaces.

## RECOMMENDATIONS FOR ORAL HEALTH PROFESSIONALS

**Oral health professionals should render all needed services to pregnant women because:**

- Pregnancy by itself is not a reason to defer routine dental care and necessary treatment for oral health problems.
- First trimester diagnosis and treatment, including needed dental x-rays, can be undertaken safely to diagnose disease processes that need immediate treatment.
- Needed treatment can be provided throughout the remainder of the pregnancy; however, the time period between the 14th and 20th week is ideal.

**Oral health professionals are encouraged to take the following actions for pregnant women:**

- Plan definitive treatment based on customary oral health considerations including:
  - Chief complaint and medical history
  - History of tobacco, alcohol and other substance use
  - Clinical evaluation
  - Radiographs when needed
- Develop and discuss a comprehensive treatment plan that includes preventive, restorative and maintenance care.
- Provide emergency care at any time during pregnancy as indicated by oral condition.
- Provide dental prophylaxis and treatment during pregnancy, preferably during early second trimester but definitely prior to delivery.

**Oral health professionals are encouraged to take the following actions for infants and young children:**

- Assess the risk for oral diseases in children beginning at six months by identifying risk indicators including:
  - Inadequate fluoride exposure (Appendix C)
  - Past or current caries experience of siblings, parents and other household members
  - Lack of age-appropriate oral hygiene efforts by parents
  - Frequent and prolonged exposure to sugary substances or use of night time bottle or sippy cup containing anything other than water
  - Medications that contain sugar
  - Clinical findings of heavy maxillary anterior plaque or any signs of decalcification (white spot lesions)
  - Special health care needs
- Provide necessary treatment or facilitate appropriate referral for children assessed to be at increased risk for oral disease or in whom carious lesions or white spot lesions are identified.

## RECOMMENDATIONS FOR CHILD HEALTH PROFESSIONALS

**Child health professionals are encouraged to take the following actions:**

- Provide counseling and anticipatory guidance to parents and caretakers concerning oral health during well child visits.
- Assess the risk for oral diseases in children beginning at six months of age by identifying risk indicators including:
  - Inadequate fluoride exposure (Appendix C)
  - Past or current caries experience of siblings, parents and other household members
  - Lack of age-appropriate oral hygiene efforts by parents
  - Frequent and prolonged exposure to sugary substances or use of night time bottle or sippy cup containing anything other than water
  - Medications that contain sugar
  - Clinical findings of heavy maxillary anterior plaque or any signs of decalcification (white spot lesions)
  - Special health care needs
- Refer and follow-up children with moderate and high risk indicators as soon as possible. See AAPD recommendations in Appendix D.
- Facilitate appropriate referral for disease management of children assessed to be at increased risk for oral disease or in whom carious lesions or white spot lesions are identified.
- Assist parents/caretakers in establishing a dental home for the children and for themselves.
- Develop a list of oral health referral sources that will provide services to young children and children with special health care needs.

# CHAPTER 1:
# Oral Health Care in Pregnancy and Early Childhood

## INTRODUCTION

According to the Surgeon General's report, *Oral Health in America*, perceptions must change to improve oral health and to make it an accepted component of general health (1). A follow-up report titled *A National Call to Action to Promote Oral Health* urges actions to reduce health disparities (2). Strategies to change the perceptions of health care professionals include updating health curricula and continuing education courses, training health care providers to conduct oral screenings as part of routine physical examinations and to make appropriate referrals and promoting interdisciplinary training in counseling patients about how to reduce risk factors common to oral and general health. Two population groups that can benefit immensely from these changes are pregnant women and young children (3).

Pregnancy and early childhood are particularly important times to access oral health care because the consequences of poor oral health can have a lifelong impact (1;2;4-9). Several national organizations have provided recommendations for improving oral health during pregnancy and early childhood. The National Center for Maternal and Child Health published *Bright Futures in Practice: Oral Health* to promote and improve the health and well being of infants, children and adolescents (5). The Community Preventive Services Task Force, the American Dental Association, the American Academy of Pediatric Dentistry, the American Academy of Periodontology and the American Academy of Pediatrics have issued statements and recommendations for improving oral health (10-14). Improving the oral health of pregnant women prevents complications of dental diseases during pregnancy, has the potential to decrease early childhood caries and may reduce preterm and low birth weight deliveries. Assessment of oral health risks in infants and young children, along with anticipatory guidance, has the potential to prevent early childhood caries. No comprehensive guidelines exist that address the oral health needs of pregnant women. The Institute of Medicine suggests that it is appropriate to develop guidelines when a problem is common or expensive, great variation exists in practice patterns, and sufficient scientific evidence exists to determine appropriate and/or optimal practice (15). Guidelines are, therefore, needed to assist health care professionals in improving clinical practice and to promote oral health in pregnant women and children.

For many women, pregnancy is the only time they have medical and dental insurance and thus provides a unique opportunity to access care (16). It is also a time when women are more receptive to changing behaviors that have been associated with an increased risk of poor pregnancy outcomes. Once the pregnancy is completed, some women may have difficulty accessing dental care due to loss of insurance coverage and preoccupation with childcare (17;18). In addition, children have multiple preventive health care visits during the first year of life, which provide an opportunity for child health professionals to improve the oral health of children.

Oral health problems are common in pregnant women and in young children (1;18-20). Gingivitis, characterized by bleeding gums, is a reversible process. About one-quarter of women of reproductive age have tooth decay. Periodontal disease, that is, breakdown of tooth attachment to the bone, can be detected in 37 to 46 percent of women of reproductive age and in up to 30 percent of pregnant women.

Tooth decay is the single most common chronic disease of childhood, causing untold misery for children and their families (21). Dental caries among preschoolers is common, affecting 28 percent of two to five year old children. According to the National Health and Nutrition Examination Survey, approximately 46.9 percent of tooth surfaces among females 18 years of age and older show signs of decay (18). Estimates concerning the prevalence of untreated tooth decay among women of reproductive age range from 22 percent among those 15 years of age to 25 percent among those aged 35 to 44. In New York State, 39 percent of pregnant women are enrolled in the Medicaid program. Among the Medicaid enrollees, only 34 percent had visited a dentist and about 30 percent reported dental problems during pregnancy. In contrast, 55 percent of pregnant women with other insurance had visited a dentist, while 22 percent reported a dental problem (3).

Variations in oral health practice patterns reflect several factors (1;3;22). First, oral health screening and referral are not routinely included in prenatal care. Second, many oral health professionals are hesitant to treat pregnant women. Third, while most children do not visit a dentist until age three, these same children usually have visited a child health professional 11 times for well-child visits during the same time period.

Although there are gaps in knowledge, there is sufficient evidence to recommend appropriate oral health care for pregnant women and young children. For these reasons, the New York State Department of Health convened an expert panel to develop clinical practice guidelines for health care professionals.

## ORAL HEALTH AND PREGNANCY

### Effect of Pregnancy on Oral Health

Dental problems such as caries, erosion, epulis, periodontal infection, loose teeth, and ill-fitting crowns, bridges, and dentures (prostheses) may have special significance during pregnancy (5;8;9;19;23-25). Tooth decay is the result of repeated acid attacks on the tooth enamel. Any increase in tooth decay during pregnancy may be due to changes in diet and oral hygiene. Nausea and vomiting in pregnancy can cause extensive erosion. Pregnancy gingivitis is present in over 30 percent of pregnant women. At the time of labor and delivery, dislodged teeth or prostheses could cause complications.

### Effect of Oral Health On Pregnancy: Association Between Periodontal Disease and Preterm/Low Birth Weight

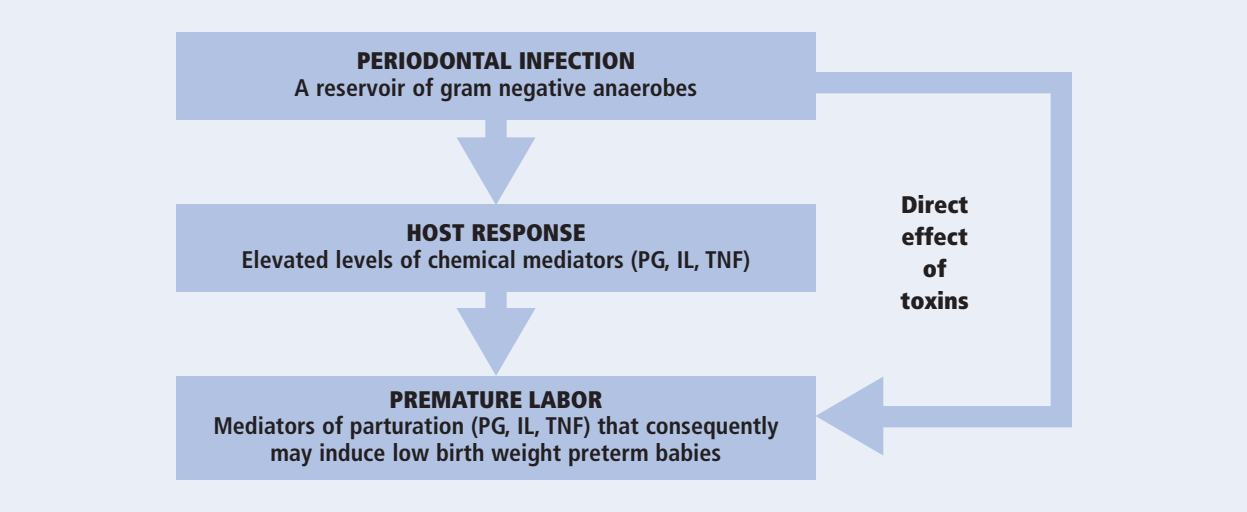
Periodontal disease is caused by gram-negative anaerobic bacteria. Studies have suggested that periodontal infection may contribute to the birth of preterm/low birth weight babies (26-43).

The bacteria responsible for periodontal disease are capable of producing a variety of chemical inflammatory mediators such as prostaglandins, interleukins and tumor necrosis factor that can directly affect the pregnant woman (Figure 1). The individual host response, partially mediated by specific genotype, also plays an important role as a determinant of disease expression (44).

In a recent systematic review, Scannapieco et al. reported that several studies implicated periodontal disease as a risk factor for preterm/low birth weight (43). They found, however, that few of the studies assessed the impact of prevention and treatment of periodontal disease on birth outcomes. Although the authors stated that it was not clear whether periodontal diseases played a causal role in adverse pregnancy outcomes, preliminary evidence suggested that periodontal intervention might reduce these adverse outcomes.

Three prospective intervention studies have tested the effect of periodontal treatment on the outcome of preterm delivery/low birth weight (45-48). Lopez and colleagues published two studies conducted

**Figure 1. Periodontal Disease and Preterm Low Birthweight: Proposed Biological Mechanism**




*(Adapted from "Does periodontal disease relate to pre-term low birth weight babies?": The Colgate Oral Care Report 11(3);2001:page 3).*

in Santiago, Chile (47). In one study, pregnant women with gingivitis were randomized to receive periodontal treatment prior to 28 weeks gestation (early) or postpartum (delayed). The rate of preterm/low birth weight delivery was 9.5 percent in the delayed treatment group and 1.5 percent in the early treatment group. In another study, 400 women were randomly assigned to either the experimental group, which received periodontal treatment before 28 weeks of gestation or to a control group that received treatment after delivery. The rate of preterm/low birth weight delivery in the control group was 8.6 percent, while the rate in the treatment group was 2.5 percent. Jeffcoat et al. published preliminary results of an on-going trial that randomized women in the second trimester to one of three treatment groups: dental prophylaxis and placebo, periodontal treatment and placebo, and periodontal treatment and antibiotics. Preliminary data indicated that delivery at less than 35 weeks occurred among 6.3 percent of a referent control group, 4.9 percent of those that received prophylaxis and placebo, 3.3 percent of those that received periodontal treatment and antibiotics and 0.8 percent of those that received periodontal treatment with placebo (46). Mitchell-Lewis et al. compared 74 pregnant teenagers who received periodontal treatment to 90 teenagers who did not receive treatment during pregnancy. The rate of preterm/low birth weight delivery was 18.9 percent in the control group and 13.5 percent in the treatment group (48).

In a recent systematic review of periodontal disease and adverse pregnancy outcomes by Xiong et al., 25 studies were identified (49). Adverse pregnancy outcomes included not only preterm/low birth weight but also miscarriage and preeclampsia. Eighteen studies suggested an association between periodontal disease and increased risk of adverse pregnancy outcomes (OR 1.1 - 20.0) and 7 studies found no evidence of an association (OR 0.78 - 2.54).

The results of ongoing intervention trials will provide more definitive data to help craft future guidelines for oral health care during pregnancy. Without waiting for the outcome of these clinical trials, health care professionals can take actions now to address oral health problems in pregnant women.

## Magnitude of Public Health Burden of Preterm/Low Birth Weight Babies

Preterm birth is a leading cause of neonatal mortality in the United States (50). Preterm birth is defined as delivery prior to 37 weeks gestation; low birth weight is defined as newborns weighing

less than 2500 grams or 5.5 pounds. On a national level, in 2001, 11.1 percent of all births were preterm and 7.7 percent were low birth weight. In fact, New York State ranked 20th nationally in percent of preterm births in 2002 (51). It is important to note that not all premature infants are low birth weight and that not all low birth weight infants are premature. Preterm births account for 35 percent of all US health care spending for infants and 10 percent of all such spending for children. Preterm births are responsible for three-quarters of neonatal mortality and one half of long-term neurologic impairments in children. Despite the numerous management methods proposed, the incidence of preterm birth has changed little over the past 40 years (52).

### Maternal Oral Health and Early Childhood Caries

Dental caries is the most prevalent chronic infectious disease of our nation's children (1). Severe dental caries is a particular problem in young children because of the difficulty in managing them in a dental office, as well as the multiple visits required to treat them. Caries in primary teeth is also predictive of future caries risk. A review of the literature shows that there are several critical events in the causation of caries in young children (23;24;53). The first event is the acquisition of infection with *Streptococcus mutans,* the bacteria most responsible for caries initiation (53). The second event is the accumulation of *Streptococcus mutans* to pathogenic levels secondary to frequent and prolonged exposure to caries-promoting carbohydrates, particularly common sugar. The third event is rapid demineralization of enamel, which if unchecked leads to cavitations.

Cariogenic or decay-causing bacteria are typically transmitted from mother or caregiver to child by behaviors that directly pass saliva, such as sharing a spoon when tasting baby food, cleaning a dropped pacifier by mouth or wiping the baby's mouth with saliva (24;53;54). Colonization can occur any time after the child is born, but the bacteria have the greatest potential for being retained in the mouth after a tooth or other hard surface, such as an obturator in a child with cleft palate, is present in the mouth. The earlier that cariogenic bacteria occupy ecological niches in the child's mouth, the greater the percentage of the child's plaque that will be comprised of these bacteria. As the child grows older, cariogenic bacteria become less able to colonize within a child's mouth, as the available ecological niches are filled with other organisms. The mother is the most common donor as noted in DNA fingerprinting studies that show genotype matches between mothers and infants in over 70 percent of cases (54;55). For this reason, mothers who themselves have experienced extensive past or current caries have a particularly strong need for counseling on how to avoid early transmission of cariogenic bacteria to their offspring.

Reducing transmission of cariogenic bacteria can be accomplished by reducing the maternal reservoir, avoiding vectors, and increasing the child's resistance to colonization (53;56;57). Maternal *Streptococcus mutans* reservoirs can be suppressed by applying topical chlorhexidine or fluoride, chewing xylitol-containing gums, and dietary counseling to reduce frequency of simple carbohydrate ingestion (58). Transmission vectors can be identified and managed through anticipatory guidance about healthy behaviors like minimizing saliva-sharing activities. Resistance to colonization can be accomplished by limiting the child's frequency of carbohydrate intake or application of fluoride varnish. A daily rinse with a combination of 0.05 percent sodium fluoride and 0.12 percent chlorhexidine beginning in the sixth month of pregnancy and continuing until delivery has been reported to result in significant reductions in levels of dental caries-causing bacteria, consequently delaying the colonization of such bacteria among offspring (59). A study conducted by Gunay et al. demonstrated the effectiveness of a primary prevention program initiated during pregnancy that significantly improved the oral health of mothers and their children (60). One longitudinal study

showed that chewing xylitol-containing gum three to five times a day interfered with the transmission of bacteria from mother to child (61;62). Thus, interventions for the mother, which may decrease the spread of cavity causing bacteria to their infant or young child, have the potential to control dental caries in children.

## ORAL HEALTH AND EARLY CHILDHOOD

Dental caries is a common childhood problem. It is five times more prevalent than asthma. Although dental caries is preventable, almost 28 percent of children aged two to five years experience the disease (21). A virulent form of dental caries in children younger than six is generally defined as early childhood caries (ECC). Because management of these children in dental offices is difficult, treatment is often rendered in operating rooms, increasing the cost of care. Furthermore, there is a high rate of relapse of caries in these children. According to the Medical Expenditure Panel Survey, the cost of dental services account for almost one fourth of total health care expenditures in children (19;63).

Child health professionals, including but not limited to physicians, physician assistants, nurse practitioners and nurses, can play a significant role in reducing the burden of this disease. While most children do not visit a dentist until age three, children have visited a child health professional up to eleven times for well-child visits by this age. Dental caries impacts children's functioning including eating, sleeping, speaking, learning and growth. Other dental conditions such as oral clefts and orthodontic problems can jeopardize their physical growth, self-esteem and capacity to socialize. Thus, well-child visits provide an opportunity for oral health risk assessment, counseling, early detection and referral. Recently the American Academy of Pediatrics adopted new recommendations regarding the inclusion of oral health in anticipatory guidance during well-child care visits (13). The recommendations specify that the first dental risk assessment should occur as early as six months of age. The establishment of a dental home should occur by approximately one year of age.

## USE OF THESE GUIDELINES

These recommendations have been developed to assist health care professionals to educate women about oral health and to improve the overall health of women and children. These guidelines can be used by: 1) prenatal care providers to integrate oral health risk assessment and referral into routine prenatal care; 2) oral health professionals to provide appropriate treatment for pregnant women; 3) child health professionals to include oral health risk assessment as part of well-child care and to provide referral.

These guidelines will enable health care professionals to work together as a team to improve the care delivered to mothers and children. This improved integration of care is expected to have significant health benefits.

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# CHAPTER 2:
# Recommendations for Prenatal Care Providers

## BACKGROUND

Oral health should be an integral part of prenatal care (1;2). Although we have known for a long time that oral health is important, some pregnant women are not receiving oral health care services (2;3). Prenatal care providers can play a crucial role in breaking down barriers to access and raising awareness about the importance of oral health. Furthermore, they can dispel misconceptions, such as the belief that bleeding in the mouth is "normal" during pregnancy, pain during dental procedures is unavoidable, x-rays during pregnancy are harmful to the fetus and postponing treatment until after pregnancy is safer for the fetus and mother. Some oral health professionals also have concerns about the effects of x-rays and medications including anesthetic agents, antibiotics and analgesics on the fetus. While structural, financial, personal and cultural barriers may present problems in finding appropriate sources of dental care for pregnant women, prenatal care providers can play a significant role by educating pregnant women and advocating for appropriate oral health care in their communities.

Improving oral health during pregnancy not only enhances the overall health of women but also contributes to improving the oral health of their children. In the past, some oral health professionals have postponed treatment because of the uncertainty about the risk of x-rays and bacteremia (4;5). However, deferring appropriate treatment may cause unforeseen harm to the woman and possibly to the fetus for several reasons. First, women may self-medicate with over the counter medications like acetaminophen to control pain. Second, untreated cavities in mothers may increase the risk of caries in children. Finally, untreated oral infection may become a systemic problem during pregnancy and may contribute to preterm and/or low birth weight deliveries. Recently, the American Academy of Periodontology urged oral health professionals to provide preventive services as early in pregnancy as possible and to provide treatment for acute infection or sources of sepsis irrespective of the stage of pregnancy (6). For many women, completing treatment of oral diseases during pregnancy assumes greater importance because health and dental insurance may be available only during pregnancy. Consequently, the prenatal period is a unique opportunity for obtaining oral health services.

## ROLE OF PRENATAL CARE PROVIDER

Pregnancy is a "teachable moment" when women are motivated to change behaviors that have been associated with poor pregnancy outcomes. The prenatal care team can be very influential in encouraging women to maintain a high level of oral hygiene, to visit an oral health professional, and to promote completion of all needed treatment during the pregnancy. Oral health care services should be integrated with prenatal services for all pregnant women. The prenatal care provider is encouraged to:

- Assess problems with teeth and gums and make appropriate referral to an oral health professional.
- Encourage all women at the first prenatal visit to schedule an oral health examination if one has not been performed in the last six months, or if a new condition has occurred.
- Encourage all women to adhere to the oral health professional's recommendations regarding appropriate follow-up.

- Document in the prenatal care plan whether the patient is already under the care of an oral health professional or a referral is made.
- Facilitate treatment by providing written consultation for the oral health referral (Appendix A).
- Develop a list of referral sources in the community who will provide services to pregnant women.
- Share appropriate clinical information with oral health professional.
- Answer questions that the oral health professional may ask.
- Educate pregnant women about care that will improve their oral health:
  - Brush teeth twice daily with a fluoride toothpaste and floss daily.
  - Limit foods containing sugar to mealtimes only.
  - Choose water or low-fat milk as a beverage. Avoid carbonated beverages during pregnancy.
  - Choose fruit rather than fruit juice to meet the recommended daily fruit intake for you and your child.
  - Obtain necessary dental treatment before delivery.
- Assist pregnant women in dealing with nausea and vomiting:
  - Eat small amounts of nutritious yet noncariogenic foods throughout the day (Appendix B).
  - Use a teaspoon of baking soda (sodium bicarbonate) in a cup of water as a rinse after vomiting to neutralize acid.
  - Chew sugarless or xylitol-containing gum after eating.
  - Use gentle tooth brushing and fluoride toothpaste to prevent damage to demineralized tooth surfaces.
- Advise women that the following actions may reduce the risk of caries in children:
  - Wipe an infant's teeth after feeding, especially along the gum line, with a soft cloth or soft bristled toothbrush.
  - Supervise children's brushing and use a small (size of child's pinky nail) amount of toothpaste.
  - Avoid putting the child to bed with a bottle or sippy cup containing anything other than water.
  - Limit foods containing sugar to mealtimes only.
  - Avoid saliva-sharing behaviors, such as sharing a spoon when tasting baby food, cleaning a dropped pacifier by mouth or wiping the baby's mouth with saliva.
  - Avoid saliva-sharing behaviors between children via their toys, pacifiers, etc.
  - Visit an oral health professional with child between six and 12 months of age.

## WHAT SHOULD HAPPEN AT THE PRENATAL VISIT?

At the first prenatal visit, the prenatal care provider should conduct an assessment to identify patients who require immediate oral health care and make appropriate referrals. This assessment should include interviewing the patient regarding problems in the mouth, previous dental visits and the availability of a dental provider.

### Interview

The following two interview questions are recommended for incorporation into the initial prenatal visit (See Figure 2):

**1. Do you have bleeding gums, toothache, cavities, loose teeth, teeth that do not look right or other problems in your mouth?**

If the woman answers yes, the prenatal care provider should:

- Refer the patient to a dentist.
- Stress the importance of a dental visit within one month.
- Assist the pregnant woman in accessing dental care, as needed.

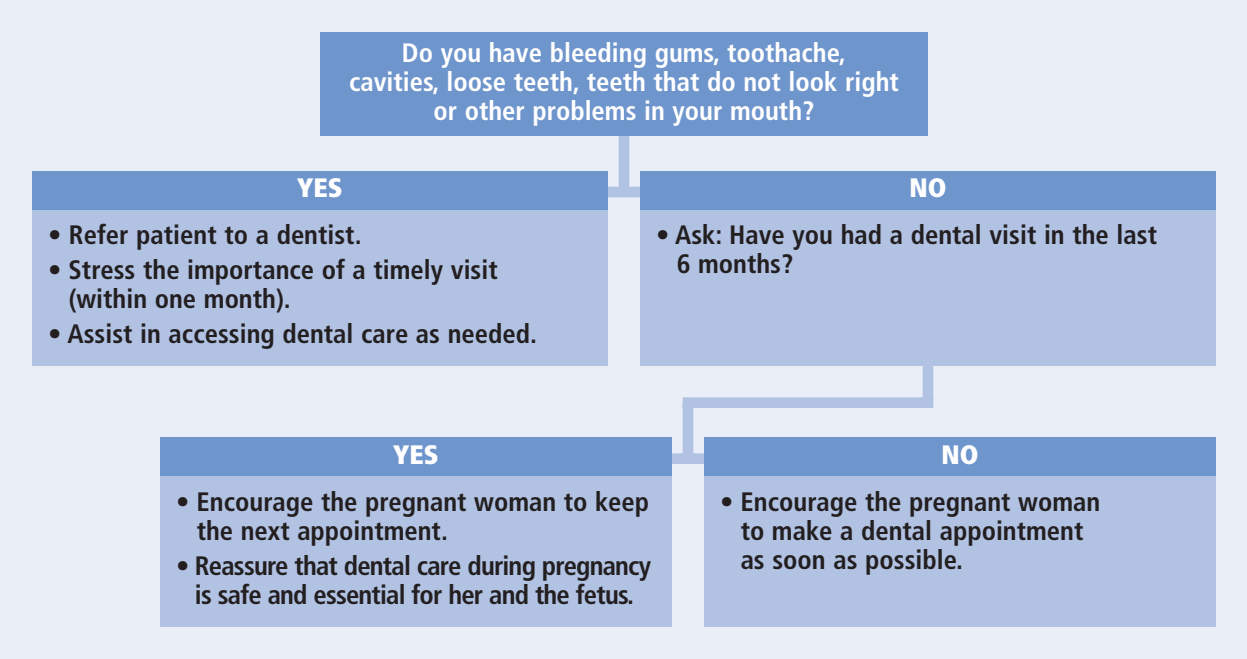
If the woman answers no to the above question, the prenatal care provider should ask the following question:

**2. Have you had a dental visit in the last six months?**

If the woman answers yes, the prenatal care provider should encourage her to keep the next appointment, which may occur during pregnancy, and reassure her that dental care during pregnancy is safe and essential. Counsel her that delaying treatment may result in significant risk to her and indirectly to the fetus.

If the woman answers no, the prenatal care provider should encourage the pregnant woman to make a dental appointment as soon as possible, preferably before 20 weeks of gestation.

**Figure 2. Questions the Prenatal Provider Should Ask**



### Education

The prenatal care provider should include the following in the education of pregnant women.

- Educate the pregnant woman about the importance of her oral health, not only for her overall health, but also for the oral health of her children and possibly to improve the outcome of her current pregnancy. A list of resources for educational materials is provided in Appendix E.
- Advise the pregnant woman that:
  - Dental care is safe and effective during pregnancy. Oral health care should be coordinated among prenatal and oral health care providers.
  - First trimester diagnosis and treatment, including needed dental x-rays, can be undertaken safely to diagnose disease processes that need immediate treatment.
  - Needed treatment can be provided throughout pregnancy; however, the time period between the 14th and 20th week is ideal.
  - Elective care can be deferred until after delivery.
  - Delay in obtaining necessary treatment could result in significant risk to her and indirectly to the fetus.

## ORAL HEALTH CARE AT THE DENTAL OFFICE

During a visit to the dental office, patients are examined for dental caries, periodontal or gum disease, impacted, erupted or destructed teeth and other problems. Some patients may require more extensive treatment, such as scaling and root planing to control periodontal disease, root-canal therapy or extractions of teeth. Dental procedures such as bridgework and cosmetic dentistry are generally deferred until after the pregnancy.

## QUESTIONS THE ORAL HEALTH PROFESSIONAL MAY ASK

### Can I take x-rays?

Yes. Diagnostic x-rays can be used during pregnancy (7-11).

Generally, dentists advise intraoral x-rays at intervals ranging from every six to thirty-six months (12). One to four intraoral bitewing or periapical views are taken with the x-ray film in the mouth. If additional information is needed, a dentist may want to take a panoral x-ray (extraoral) that gives a good picture of all teeth.

X-ray imaging of the mouth is not contraindicated in pregnancy and should be utilized as required to complete a full examination and treatment. Diagnostic x-rays are safe during pregnancy (7-12). The number and type of x-rays will depend upon the clinical conditions. The mean skin exposure from a typical dental x-ray is approximately 0.1mrad. A full mouth series of 22 dental x-rays will result in a total exposure of 2.2mrad. The oral health professional should provide shielding for the pregnant woman's abdomen and neck from x-ray exposure in the dental office.

The Food and Drug Administration has provided detailed guidelines for the use of radiographs in dental offices. These guidelines are found in Appendix F.

### Can I inject local anesthetic with epinephrine?

Yes. Local anesthetic with epinepherine can be used during pregnancy.

Lidocaine with epinephrine is considered safe during pregnancy. Lidocaine (2%) is a category B drug in contrast to mepivicaine (3%) which is a category C drug. Lidocaine with epinephrine prolongs the length of anesthesia because the drug is absorbed slowly. There is a theoretical concern about the effect of epinephrine on uterine muscle. No scientific studies, however, could be found to confirm this effect in pregnant women. The frequency of malformations was not increased among reviews of almost 300 children whose mothers were given lidocaine during early pregnancy (11;13).

### Can I use 30 percent nitrous oxide in the dental office?

The use of nitrous oxide should be limited to cases where topical and local anesthetics are inadequate. In such situations, consultation with the prenatal care provider would be prudent. Adequate precautions must be taken to prevent hypoxia, hypotension and aspiration (13). Alterations in anatomy and physiology induced by pregnancy have anesthetic implications and present potential hazards for the mother and the fetus. Therefore, most anesthesiologists prefer to use local and regional anesthetics for pregnant women.

Pregnant women require lower levels of nitrous oxide to achieve sedation. Therapeutic dosage of standard drugs for monitored anesthetic care (MAC) for intravenous and inhalation sedation is markedly reduced in pregnancy. Thus, the pregnant woman may become obtunded when the usual dosages of drugs for conscious sedation are administered. A pulse oximeter should always be used for pregnant women receiving MAC. In addition, maternal oxygen saturation should be maintained at 95 percent or higher to ensure adequate oxygenation of the fetus.

A pregnant woman is considered to always have a “full stomach” due to delayed gastric emptying and incompetent lower esophageal sphincter. Thus, pregnant women are at increased risk for aspiration (13;14). Therefore, prophylactic measures to prevent aspiration should be used, particularly during the third trimester. A woman with multiple gestation is at increased risk for aspiration in the mid-second trimester because of the large uterus. Maintaining a semi-seated position and avoiding excessive sedation are required to prevent aspiration. Conscious sedation should be the last possible alternative in the third trimester. These women may be best treated with general anesthesia in the hospital setting (13).

### What medications can I prescribe?

Appropriate treatment of pain and infection is important. Definitive treatment should not be postponed because of pregnancy. Dentists typically use antibiotics and analgesics for treating infection and controlling pain. Pharmacotherapeutics should not be a substitute for appropriate and timely dental procedures. Recommendations for some commonly used drugs (15) are summarized in Table 1.

**Table 1. Acceptable and Unacceptable Drugs for Pregnant Women**

| These drugs may be used during pregnancy. | FDA Category | These drugs should NOT be used during pregnancy. | FDA Category |
|---|---|---|---|
| **ANTIBIOTICS** | | **ANTIBIOTICS** | |
| Penicillin | B | Tetracyclines | D |
| Amoxicillin | B | Erythromycin in the estolate form | B |
| Cephalosporins | B | Quinolones | C |
| Clindamycin | B | Clarithromycin | C |
| Erythromycin (except for estolate form) | B | | |
| **ANALGESICS** | | **ANALGESICS** | |
| Acetaminophen | B | Aspirin | C |
| Acetaminophen with codeine | C | | |
| Codeine | C | | |
| Hydrocodone | C | | |
| Meperidine | B | | |
| Morphine | B | | |
| After 1st trimester for 24 to 72 hrs only | | | |
| Ibuprofen | B | | |
| Naprosyn | B | | |

## Should the pregnant woman be positioned in a special way?

When the pregnant woman lies flat on her back, the uterus in the third trimester can press on the inferior vena cava and impede venous return to the heart. This decrease in venous return can cause decreased oxygen to the brain and uterus. The pregnant woman may complain of dizziness and/or nausea. Placing a small pillow under the woman's right hip, so called left uterine displacement, or having the woman lean on her left side moves the uterus off the vena cava (16). This intervention can easily be done in the dental chair. In addition, it is recommended that a pregnant woman's head should not be lower than her feet while performing dental procedures.

## When should restorations (fillings for cavities in teeth) and other necessary dental treatment be performed?

Needed oral health treatment should be provided any time during the pregnancy (11). Prenatal care providers have traditionally postponed non-emergent medical treatment until the first trimester has passed. This practice has been based on theoretical concerns for potential harm to the fetus during the period of organogenesis. There is no compelling evidence that precludes dental treatment any time during pregnancy including the first trimester. The early second trimester (14 to 20 weeks) is the ideal time to perform all dental procedures. At this stage in gestation, the threat for teratogenicity has passed, nausea and vomiting are less common and the uterus is not large enough to cause discomfort. Another reason for completing treatment is that some pregnant women may require general anesthesia with intubation at delivery. Because pre-anesthesia evaluation usually occurs at the time of labor, problems such as loose teeth and temporary restorations should be remedied prior to the estimated date of delivery.

### What advice should I give about the use of dental amalgam (silver-mercury) fillings during pregnancy?

All health professionals should educate women about the potential harm that can accrue from untreated caries during pregnancy. Women with symptomatic caries or deep decay should be treated promptly, including in the first trimester. The oral health professional and the pregnant woman should determine the best treatment options based on an evaluation of the benefits, risks and alternatives of using dental amalgam fillings.

At present, there is no evidence that the exposure of the fetus to mercury released from the mother's existing amalgam fillings causes any adverse effect (17-21). There is international agreement that the scientific data do not confirm the presence of a significant health hazard from use of dental amalgam. Nevertheless, Germany, Austria and Canada have restricted the use of amalgams in certain populations including pregnant women. In addition, Sweden and Denmark are phasing out all mercury containing materials because of environmental concerns (17).

Dental amalgam is the most common material used for repairing a posterior tooth. Resins (composites), glass-ionomer, gold or porcelain restorations are alternative materials. Dental amalgams are often more durable than resin or glass-ionomer fillings and less costly than gold or porcelain restorations, but little is known about any of these materials in relation to pregnancy. Bisphenol-A, one of the chemicals in the resin, has been shown to be an endocrine disrupter in animal studies (22). If one were to apply the Food and Drug Administration (FDA) Use-In-Pregnancy Ratings for Drugs (23) to dental amalgam or resin material, each could be considered as Category B (i.e., penicillin and acetaminophen) or C (i.e., acetaminophen with codeine).

Mercury vapor (elemental mercury, a form of inorganic mercury) is released during amalgam removal or placement and may be inhaled and absorbed into the bloodstream through which it crosses the placental barrier. This procedure may temporarily increase the mercury level in blood. However, use of rubber dam and high speed evacuation (suction) can markedly reduce such vapor inhalation (21). According to a recent systematic review, there is insufficient evidence to support or refute the hypothesis that mercury exposure from dental amalgam restorations contributes to adverse pregnancy outcomes (17). A study conducted by Hujoel et al. found that the placement of dental amalgams during pregnancy did not increase the risk of low birth weight babies (19).

The elemental mercury found in dental amalgams is different from methyl mercury, a form of organic mercury. The consumption of fish and seafood is the major source of organic mercury (17;20). The ingestion of methyl mercury during pregnancy is more of a concern than mercury vapor released from dental amalgams.

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# CHAPTER 3:
# Recommendations for Oral Health Professionals

## BACKGROUND

In developing a treatment plan for the pregnant woman, oral health professionals should consider the gestational age of the fetus, harmful maternal behaviors and other medical conditions. Because the second trimester is considered the safest time to provide oral health and other surgical care, oral health professionals need to know the estimated date of delivery. After the baby is born, the mother may be too busy to attend to dental appointments and may lose her health insurance coverage. In addition, oral health professionals should be aware of certain physiological changes that occur during pregnancy. Every pregnant woman is expected to receive a comprehensive oral evaluation at some time during the pregnancy, as regular six-month examinations is the standard of care for the general population.

### Time Line of Pregnancy

The estimated date of delivery is calculated by counting 40 weeks from the first day of the last menstrual period (1). Pregnancy is divided into three trimesters, roughly three months for each trimester or 14 weeks based on a 42-week gestation. Because of the current widespread use of ultrasound, it is more common for women to report the number of completed weeks of gestation. The first trimester, defined as starting at the first day of the last menstrual period and continuing until 13 weeks and six days, is when organogenesis takes place. Technically, the conceptus is called an embryo until the ninth week, when it becomes a fetus. It is during the embryonic period when the risk of teratogenicity exists (2). The second trimester and the third trimester start at 14 weeks and at 28 weeks of gestation respectively.

### First Trimester: Pregnancy Loss and Teratogenesis

Sporadic pregnancy loss occurs in 10 to 15% of all clinically recognized pregnancies in the first trimester (3). Most of these losses are due to karyotypic abnormalities. Organogenesis, development of the organs, takes place in the first ten weeks of gestation. Usually, in order for an environmental factor to be considered a teratogen, exposure must occur during the first ten weeks of gestation.

Malformations are present in two to three percent of live full-term newborn babies (1;4;5). Performing dental procedures during early pregnancy has never been reported to increase the rate of malformations.

### Second Trimester

The safest time to perform procedures during pregnancy is in the early second trimester, 14 to 20 weeks gestation. The risk of pregnancy loss is lower compared to that in first trimester and organogenesis is completed. For example, cervical cerclage and thyroidectomy are two relatively common surgical procedures performed on pregnant women typically in the early second trimester (1;4). The pregnant uterus is below the umbilicus until 20 weeks gestation and the woman is generally more comfortable than she will be as the pregnancy progresses.

### Third Trimester

In the third trimester, the uterus can press on the inferior vena cava and pelvic veins, which impedes venous return to the heart. This decrease in venous return can cause a decrease in the amount of oxygen delivered to the brain and uterus (1). Women who are supine may have nausea or vomiting.

### Harmful Maternal Behaviors: Tobacco, Alcohol and Recreational Drugs

Oral health professionals play a significant role in counseling patients concerning the harmful effects of tobacco, alcohol and recreational drugs. During the pregnancy, the consequences of these behaviors are profound. Multiple studies have demonstrated a clear association between maternal smoking and perinatal morbidity and mortality (6-10). Women who smoke are at increased risk for low birth weight babies, bleeding during pregnancy, premature labor and preterm rupture of membranes. Infant health risks associated with maternal smoking include sudden infant death syndrome, hospitalization and neurodevelopmental abnormalities.

There is no known safe amount of alcohol consumption during pregnancy. Fetal alcohol syndrome is a preventable birth defect characterized by growth restriction, facial abnormalities and central nervous dysfunction. Many more babies, however, are diagnosed with fetal alcohol effect, which is a lesser degree of the syndrome. Fetuses of women who ingest six drinks per day are at a 40 percent risk of developing some features of the fetal alcohol syndrome (5;9). Some data suggest that binge drinking, for example on the weekend, is more likely to cause this syndrome than daily intake of alcohol (1). It is safest to consider all use of alcohol during pregnancy as harmful, including some alcohol-containing mouth rinses.

Depending on the geographic location, it is estimated that 1 to 40 percent of pregnant women have used cocaine, marijuana, diazepam or other prescription drugs at some time during the pregnancy while one in ten neonates are exposed to mood-altering drugs during pregnancy (5;7). For these reasons, oral health evaluation during pregnancy presents a unique opportunity to counsel women concerning these high-risk behaviors.

## PREGNANCY AND TREATMENT CONSIDERATIONS

### Hypertensive Disorders of Pregnancy

Oral health professionals should be aware of hypertensive disorders because of increased risk of bleeding during procedures and should consult with the prenatal care provider before initiating dental procedures in women with uncontrolled severe hypertension. Blood pressure values of greater than or equal to 140/90 mmHg are considered mild hypertension and values greater than or equal to 160/110 mmHg are considered severe hypertension. Hypertensive disorders of pregnancy, including chronic or preexisting hypertension and the development of hypertension during pregnancy, occur in 12 to 22 percent of pregnancies (11). Up to 5 percent of pregnant women have chronic hypertension (12). By definition, chronic hypertension is diagnosed prior to pregnancy or during the first 20 weeks of gestation.

Preeclampsia is a syndrome defined by hypertension and proteinuria during pregnancy. Eclampsia is defined as the new onset of grand mal seizures in a woman with preeclampsia. The diagnostic criteria for superimposed preeclampsia include new onset proteinuria in a woman with diagnosed chronic hypertension. Preeclampsia occurs in 5 to 8 percent of pregnancies. Hypertensive disorders are associated with adverse outcomes including premature birth, intrauterine growth restriction, fetal demise, placental abruption and cesarean delivery (11).

Several physiologic changes occur during pregnancy that can affect chronic hypertension. Two of the most significant changes are the increase in blood volume and the decrease in blood pressure that begin by the end of the first trimester. The blood pressure reaches its lowest level at 16 to 18 weeks. This decrease in blood pressure is the result of changes in the renin-angiotensin system and the development of physiologic anemia of pregnancy (1).

### Diabetes and Pregnancy

Gestational diabetes or type III diabetes occurs in 2 to 5% of pregnant women in the United States (13) and is most commonly diagnosed after 24 weeks of gestation. Pre-existing type II diabetes, characterized by insulin resistance, is more likely to continue after delivery especially if the woman is obese. Up to 50% of women with gestational diabetes will go on to develop type II diabetes in middle age, especially with risk factors of a positive family history and obesity. Type I diabetes, with underlying autoimmune pathogenesis, may also be initially diagnosed during pregnancy.

For women with diabetes diagnosed prior to pregnancy, oral health is particularly important as acute and chronic infections make control of diabetes more difficult (14). Diabetes control is particularly important during the first trimester. Rates of congenital anomalies increase as the degree of uncontrolled diabetes increases. Ideally, all women should be seen for oral health care prior to conception. Oral health care is even more important for women with diabetes who require meticulous pre-conception control of the disease to reduce the risk of congenital malformations (1). Ongoing control of diabetes during pregnancy further decreases the risk of adverse pregnancy outcomes such as preeclampsia and large-for-gestational age (macrosomic) newborns (1;4).

### Heparin and Pregnancy

A small number of pregnant women with a diagnosis of thrombophilia may be given one or two injections of heparin daily to improve pregnancy outcome. Thrombophilia is a genetic or acquired hematologic condition that predisposes women to blood clots, pregnancy loss and/or fetal growth restriction. Heparin increases the risk for bleeding complications during dental procedures (15-17).

### Risk of Aspiration

Pregnant women have delayed gastric emptying due to hormonal changes and an incompetent esophageal valve. As a result, pregnant women are considered to always have a “full stomach” and thus are at increased risk for aspiration (1;4;18).

### Food and Drug Administration (FDA) Use-in-Pregnancy Ratings for Drugs

Most people are exposed to a variety of chemicals. Although a few agents have been shown to be teratogenic in humans, the teratogenic potential of many of these agents is not known (1;19).

In 1979, the FDA developed a classification system to provide therapeutic guidance for the use of drugs during pregnancy. This system combines assessment of several kinds of risk, including congenital anomalies, fetal effects, perinatal risks and therapeutic risk-benefit ratio. Few research studies of drugs have included pregnant women. Most medications prescribed for common diseases can be used with relative safety (with a few notable exceptions like thalidomide) because there have been few adverse drug reports. Moreover, the untreated disease or condition itself may pose more serious risks to both mother and fetus than any unsubstantiated risks from the medications. It is important that health care professionals who care for pregnant women are familiar with the following

classification of drugs (1;19). Most drugs are category C (66%) or B (19%) while only 0.7% are category A (20).

### FDA Use-in-Pregnancy Ratings for Drugs (21)

**Category A** – Controlled studies show no risk – Adequate, well-controlled studies in pregnant women have failed to demonstrate risk to the fetus.

**Category B** – No evidence of risk in humans – Either animal studies show risk (but human findings do not) or, if no adequate human studies have been done, animal findings are negative.

**Category C** – Human studies are lacking and animal studies are either positive for fetal risk or lacking as well. However, potential benefits may justify the potential risk.

**Category D** – Positive evidence of risk – Investigational or post marketing data show risk to the fetus. Nevertheless, potential benefits may outweigh the risk, such as some anticonvulsive medications.

**Category X** – Contraindicated in pregnancy – Studies in animals or humans, or investigational or post marketing reports have shown fetal risk, which clearly outweighs any possible benefit to the patient, such as isotretinoin and thalidomide.

### Considerations for Nitrous Oxide Use in the Dental Office

The use of nitrous oxide should be limited to cases where topical and local anesthetics are inadequate. In such situations, consultation with the prenatal care provider would be prudent. Adequate precautions must be taken to prevent hypoxia, hypotension and aspiration (18). Alterations in anatomy and physiology induced by pregnancy have anesthetic implications and present potential hazards for the mother and the fetus. Therefore, most anesthesiologists prefer to use local and regional anesthetics for pregnant women.

Pregnant women require lower levels of nitrous oxide to achieve sedation. Therapeutic dosage of standards drugs for monitored anesthetic care (MAC) for intravenous and inhalation sedation is markedly reduced in pregnancy. Thus, the pregnant woman may become obtunded, when the usual dosages of drugs for conscious sedation are administered. A pulse oximeter should always be used for pregnant women receiving MAC. In addition, maternal oxygen saturation should be maintained at 95 percent or higher to ensure adequate oxygenation of the fetus.

A pregnant woman is considered to always have a "full stomach" due to delayed gastric emptying and incompetent lower esophageal sphincter. Thus, pregnant women are at increased risk for aspiration (4;18). Therefore, prophylactic measures to prevent aspiration should be used particularly during the third trimester. A woman with multiple gestation is at increased risk for aspiration in the mid-second trimester because of the large uterus. Maintaining a semi-seated position and avoiding excessive sedation are required to prevent aspiration. Conscious sedation should be the last possible alternative in the third trimester. These women may be best treated with general anesthesia in the hospital setting (18).

### Use of Diagnostic X-rays During Pregnancy

According to the American College of Radiology, no single diagnostic procedure results in a radiation dose significant enough to threaten the well being of the developing embryo and fetus (22). Current evidence suggests that there is no increased risk to the fetus with regard to congenital malformation, growth retardation, or abortion from ionizing radiation at a dose of less than five rad (23;24).

According to Matteson et al., the recommended guidelines need not be altered for a pregnant patient (25). Uterine doses for a full-mouth radiographic series have been shown to be less than one mrem. On the other hand, the uterine doses from naturally occurring background radiation during the nine months of pregnancy can be expected to be about 75 mrem. The goal is to minimize x-ray exposure to the fetus.

Hujoel et al. recently reported an association between dental x-rays in the first trimester and term low birth weight babies (26). The authors hypothesized that the total x-ray exposure to the maternal thyroid gland could cause low birth weight. Several weaknesses in the study indicate that it is highly unlikely that this association is causal (27-29). There is no reason, at this time, to believe that the risk of low birth weight babies outweighs the benefits of exposing pregnant women to a limited number of dental x-rays with appropriate thyroid collar and apron.

The U.S. Food and Drug Administration has provided detailed guidelines for prescribing dental radiographs (Appendix F). The guidelines recommend the use of health history and clinical judgment to determine the need for and type of radiographic images for diagnosis. Every precaution should be taken to minimize radiation exposures by using protective thyroid collars and aprons whenever possible.

### Mercury Fillings and Human Health Problems

At present, there is no evidence that the exposure of the fetus to mercury released from the mother's existing amalgam fillings causes any adverse effect (30-35). There is international agreement that the scientific data do not confirm the presence of a significant health hazard from use of dental amalgam. Nevertheless, Germany, Austria and Canada have restricted the use of amalgams in certain populations including pregnant women. In addition, Sweden and Denmark are phasing out all mercury-containing materials because of environmental concerns (30).

Dental amalgam is the most common material used for repairing a posterior tooth. Resins (composites), glass-ionomer, gold or porcelain restorations are alternative materials. Dental amalgams are often more durable than resin or glass-ionomer fillings and less costly than gold or porcelain restorations but little is known about any of these materials in relation to pregnancy. Bisphenol-A, one of the chemicals in the resin, has been shown to be an endocrine disrupter in animal studies (36). If one were to apply the Food and Drug Administration (FDA) Use-In-Pregnancy Ratings for Drugs (21) to dental amalgam or resin material, each could be considered as Category B (i.e., penicillin and acetaminophen) or C (i.e., acetaminophen with codeine).

Mercury vapor (elemental mercury, a form of inorganic mercury) is released during amalgam removal or placement and may be inhaled and absorbed into the bloodstream through which it crosses the placental barrier. This procedure may temporarily increase the mercury level in blood. However, use of rubber dam and high speed evacuation (suction) can markedly reduce such vapor inhalation. According to a recent systematic review, there is insufficient evidence to support or refute the hypothesis that mercury exposure from dental amalgam restorations contributes to adverse pregnancy outcomes (30). A study conducted by Hujoel et al. found that the placement of dental amalgams during pregnancy did not increase the risk for low birth weight babies (32).

The elemental mercury found in dental amalgams is different from methyl mercury, a form of organic mercury. The consumption of fish and seafood is the major source of organic mercury (30;33). The ingestion of methylmercury during pregnancy is more of a concern than mercury released from dental amalgams.

All health professionals should educate women about the potential harm that can accrue from untreated caries during pregnancy. Women with symptomatic caries or deep decay should be treated promptly at any time during pregnancy. The oral health professional and the pregnant woman should determine the best treatment options based on an evaluation of the benefits, risks and alternatives of using dental amalgams.

### Prophylactic Antibiotics During Pregnancy

Pregnancy in and of itself is not an indication for prophylactic antibiotics during dental procedures, although bacteremia can occur as a result of dental procedures. Transient bacteremia is well documented following such procedures as tooth extractions, gingivectomy, supra- and subgingival scaling, ultrasonic scaling and subgingival irrigation (37). While the occurrence of bacteremia is common following dental procedures, clinical trials have not reported any adverse effects of dental interventions on pregnant women.

Criteria for prescribing antibiotics to prevent subacute bacterial endocarditis are the same for pregnant women as they are for all individuals. Antibiotics are used prophylactically to prevent subacute bacterial endocarditis in all patients at increased risk as delineated in the American College of Cardiology guidelines (38).

### Xylitol-Containing Chewing Gum

The role of sucrose and other fermentable carbohydrates in the causation of dental caries is well known (39;40). Xylitol, a naturally occurring sweetener, has been added to chewing gums, candy, toothpastes and chewable fluoride tablets because of its potential to reduce dental caries. A National Institutes of Health consensus development conference on the diagnosis and management of dental caries identified xylitol-containing products as an effective caries preventive agent (41). Significant reduction of mother-child transmission of *Streptococcus mutans* occurred in a group of Finnish mothers chewing xylitol-containing gum two to three times a day, while their children were between three and 24 months of age (42). Although xylitol-containing chewing gum is promising as a caries preventive agent, there is still uncertainty, however, as to the frequency, amount and duration of chewing required for reducing bacterial transmission.

## ROLE OF ORAL HEALTH PROFESSIONAL

The role of the oral health professional includes providing preventive and treatment care, and anticipatory guidance for pregnant women. Oral health professionals should render all needed services to pregnant women because:

- Pregnancy by itself is not a reason to defer routine dental care and necessary treatment for oral health problems.
- First trimester diagnosis and treatment, including needed dental x-rays, can be undertaken safely to diagnose disease processes that need immediate treatment.
- Needed treatment can be provided throughout pregnancy; however, the time period between the 14th and 20th week is ideal.

## WHAT SHOULD HAPPEN AT THE ORAL HEALTH CARE VISIT?

The oral health professional is encouraged to:

- Consider the following when planning definitive treatment:
  - Chief complaint and medical history
  - History of tobacco, alcohol and other substance use
  - Clinical evaluation
  - Radiographs when needed
- Develop and discuss a comprehensive treatment plan that includes preventive and maintenance care.
- Educate pregnant women about care that will improve their oral health:
  - Brush teeth twice daily with a fluoride toothpaste and floss daily.
  - Limit foods containing sugar to mealtimes only.
  - Choose water or low-fat milk as a beverage. Avoid carbonated beverages during pregnancy.
  - Choose fruit rather than fruit juice to meet the recommended daily fruit intake.
  - Obtain necessary dental treatment before delivery.

## MANAGEMENT OF ORAL HEALTH PROBLEMS IN PREGNANT WOMEN

The oral health professional is encouraged to:

- Implement best practices in the assessment of caries risk and management of caries in pregnant women.
- Perform a comprehensive gingival and periodontal examination, which includes a periodontal probing depth record.
- Consider the following as strategies to decrease maternal cariogenic bacterial load:
  - Suggest fluoride toothpaste along with fluoride mouth rinses depending on the fluoridation status of water.
  - Restore untreated caries.
  - Recommend chlorhexidene mouth rinses and fluoride varnish as appropriate.
  - Recommend the use of xylitol-containing chewing gum.
- Use the following when clinically indicated (See Table 1 for acceptable and unacceptable drugs):
  - Local anesthetic with epinephrine
  - Analgesics such as acetaminophen and/or codeine, antibiotics including penicillins, cephalosporins and erythromycins, excluding erythromycin estolate

- Radiographs with thyroid collar and abdominal apron
- Non-steroidal anti-inflammatory drugs for 48 to 72 hours.

- Avoid aspirin, aspirin-containing products, erythromycin estolate and tetracycline.
- Discuss the benefits, risks and alternatives to treatments prior to fourteen weeks gestation including prophylaxis, root planing and scaling.
- Complete restorations with permanent materials, if possible, during pregnancy.
- Complete all necessary dental procedures prior to delivery.
- Consult with the prenatal care provider when considering:
  - Deferring treatment because of pregnancy
  - Co-morbid conditions that may affect management of dental problems such as diabetes, hypertension or heparin treated thrombophilia
  - An anesthesia other than a local block such as intravenous sedation or general anesthesia to complete the dental procedure

**Table 1. Acceptable and Unacceptable Drugs for Pregnant Women**

| These drugs may be used during pregnancy. | FDA Category | These drugs should NOT be used during pregnancy. | FDA Category |
|---|---|---|---|
| **ANTIBIOTICS** | | **ANTIBIOTICS** | |
| **Penicillin** | **B** | **Tetracyclines** | **D** |
| **Amoxicillin** | **B** | **Erythromycin in the estolate form** | **B** |
| **Cephalosporins** | **B** | **Quinolones** | **C** |
| **Clindamycin** | **B** | **Clarithromycin** | **C** |
| **Erythromycin** (except for estolate form) | **B** | | |
| **ANALGESICS** | | **ANALGESICS** | |
| **Acetaminophen** | **B** | **Aspirin** | **C** |
| **Acetaminophen with codeine** | **C** | | |
| **Codeine** | **C** | | |
| **Hydrocodone** | **C** | | |
| **Meperidine** | **B** | | |
| **Morphine** | **B** | | |
| After 1st trimester for 24 to 72 hrs only | | | |
| **Ibuprofen** | **B** | | |
| **Naprosyn** | **B** | | |

## ORAL HEALTH DURING EARLY CHILDHOOD

Oral health professionals are encouraged to take the following actions for infants and children:

- Assess the risk for oral diseases in children beginning at six months by identifying risk indicators including:
  - Inadequate fluoride exposure (Appendix C)
  - Past or current caries experience of siblings, parents and other household members
  - Lack of age-appropriate oral hygiene efforts by parents
  - Frequent and prolonged exposure to sugary substances or use of night time bottle or sippy cup containing anything other than water
  - Medications that contain sugar
  - Clinical findings of heavy maxillary anterior plaque or any signs of decalcification (white spot lesions)
  - Special health care needs
- Provide necessary treatment or facilitate appropriate referral for children assessed to be at increased risk for oral disease or in whom carious lesions or white spot lesions are identified.

Although there is insufficient evidence to make definitive recommendations to prevent early childhood dental caries, many clinicians recommend interventions to disrupt the chain of events that is implicated in the development of caries. These include:

- Reducing the bacterial reservoir in mothers and intimate caretakers by restoring carious lesions and using therapeutic agents such as fluorides and chlorhexidine solutions.
- Avoiding saliva-sharing behaviors of mothers and other intimate caregivers, such as tasting food before feeding, cleaning a dropped pacifier by mouth and wiping the baby's mouth with saliva.
- Avoiding saliva-sharing behaviors between children via their toys, pacifiers etc.
- Encouraging feeding choices that reduce the frequency and amount of caries- promoting sugars such as those contained in fruit juices and infant formula preparations (See Appendix G).
- Avoiding bottles and sippy cups, especially just before sleep, and encouraging the use of water as an alternative to sugary liquids.
- Wiping an infant's teeth after feeding, especially along the gum line, with a soft cloth or soft bristled toothbrush.
- Beginning to wean children from bottle and sippy cup by nine to ten months of age.
- Supervising children's tooth brushing with a small amount of fluoride toothpaste (size of child's pinky finger nail).
- Applying antimicrobial agents such as 10% povidone-iodine solution periodically to the dentition of babies at high risk for early childhood caries.
- Applying fluoride varnishes two to three times per year.

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# CHAPTER 4:
# Recommendations for Child Health Professionals

## BACKGROUND

Dental caries is a common childhood condition. It is five times more prevalent than asthma. Although dental caries is preventable, almost 28 percent of children aged two to five years experience the disease (1-3). A virulent form of dental caries in young children less than six years of age is generally defined as early childhood caries (ECC). Because it is difficult to manage these children in dental offices, treatment is often rendered in operating rooms, increasing the cost of care. Furthermore, there is a high rate of relapse of caries in these children. According to the Medical Expenditure Panel Survey, the cost of dental services accounts for almost one fourth of total health care expenditures in children (4).

Child health professionals, including but not limited to physicians, physician assistants, nurse practitioners and nurses, can play a significant role in reducing the burden of this disease (5;6). While most children do not visit a dentist until age three, these same children usually have visited a child health professional 11 times for well-child visits during the same time period. Dental caries impacts children's functioning, including eating, speaking, learning and growth (1;2;7-10). Other dental conditions such as oral clefts and orthodontic problems can jeopardize their physical growth, self-esteem and capacity to socialize. Therefore, integrating oral health evaluation into well-child visits provides an opportunity for risk assessment, counseling, early detection and referral. Recently, the American Academy of Pediatrics adopted new recommendations about the inclusion of oral health in preventive guidance during well-child visits (11). The recommendations specify that the first dental risk assessment should occur beginning at six months of age and that the establishment of a dental home should occur by approximately one year of age for children considered to be at risk for caries. The dental home concept is modeled after the medical home concept, which is defined as care that is accessible, family centered, continuous, comprehensive, coordinated, compassionate and culturally competent. Establishment of the dental home provides an opportunity to foster the development of preventive oral health habits that can help keep children free from oral disease.

Dental caries, which can begin as early as 12 months of age, is now recognized as a bacterial infection that can be transmitted from a parent or another intimate caregiver to an infant or child (11-14). Therefore, health professionals should identify women at high risk for dental caries as early as possible, preferably during pregnancy, to provide anticipatory guidance and early intervention.

Evaluation of existing literature leads to several conclusions about prevention of caries. First, it is important to recognize the therapeutic value of a small amount of fluoride introduced through brushing two to three times a day (15). Parents or caregivers of children under six years of age should brush children's teeth or supervise brushing. Because children under six years of age have not fully developed the swallowing reflex, using large quantities of toothpaste should be discouraged to avoid enamel fluorosis. Children under the age of two should use fluoride toothpastes only after consultation with a dentist. Second, children should be protected from adult transmission of *Streptococcus mutans* early in their lives, especially before two years of age (14). Third, mothers and other caregivers should be advised that caries is an infectious disease. The caries-causing bacteria, including *Streptococcus mutans*, can be spread from mother, intimate caregiver, siblings, and other children by saliva-sharing

behaviors. Fourth, feeding sugary liquids especially at night may increase the risk for caries. Therefore, child health care professionals should focus on the message to reduce the exposure to common sugars (16;17). Fifth, mothers and other caregivers should be advised to begin the process of weaning children from the bottle and sippy cup by nine to ten months of age. Health care professionals should exercise cultural sensitivity when discussing this topic with women in communities where extended bottle usage is normative. Sixth, while every child should be seen by a dentist before the first birthday, it is particularly important to refer and follow-up on children who have risk indicators (11). Finally, child health professionals should utilize community resources such as caseworkers and community health workers for conducting follow-up and facilitating transportation to dental appointments.

## ROLE OF CHILD HEALTH PROFESSIONAL

Child health professionals should incorporate interview questions, risk assessment, screening and anticipatory guidance during well-child check ups. Because the *Streptococcus mutans* may colonize the child's mouth anytime after the first tooth erupts, appropriate interventions can alter the risk for tooth decay (14). By six months of age, every infant should receive an oral health risk assessment from a child health professional. One of the most important ways for health professionals to ensure that infants and young children enjoy optimal oral health is by performing risk assessments to identify those at risk for oral health problems, including dental caries, malocclusion and injury (11;16;18). Risk assessment of infants and young children for oral health problems is based on the premise that all infants and children are not equally likely to develop such problems. Performing a risk assessment for infants and young children can help child health professionals develop plans to meet each infant's or young child's preventive and treatment needs. During each visit, child health professionals can include questions about oral health issues and provide anticipatory guidance while discussing other age appropriate concerns. Children with chronic disease may require special assessment and treatment of oral diseases.

The American Academy of Pediatrics recommends that all child health care professionals develop the knowledge to perform oral health risk assessments on all patients beginning at six months of age. In addition, children at significant risk for caries should be entered into an aggressive anticipatory guidance and intervention program (11).

Child health professionals are encouraged to take the following actions:

- Assess the risk for oral diseases in the child beginning at six months of age by identifying the risk indicators such as:
  - Inadequate fluoride exposure
  - Caries in siblings, parents and other household members
  - Lack of age-appropriate oral hygiene efforts by parents
  - Frequent and prolonged exposure to sugary substances or use of night time bottle or sippy cup containing anything other than water
  - Medications that contain sugar
  - Clinical findings of heavy maxillary anterior plaque or any signs of decalcification (white spot lesions)
  - Special health care needs
- Facilitate appropriate referral for management for children assessed to be at increased risk for oral disease or in whom carious lesions or white spot lesions are identified.
- Develop a list of oral health referral sources who will provide services to young children and children with special health care needs
- Assist parents/caretakers in establishing a dental home for the child and for themselves.
- Advise women that the following actions may reduce the risk of caries in children:
  - Wipe an infant's teeth after feeding, especially along the gum line, with a soft cloth or soft bristled toothbrush.
  - Supervise children's brushing and use a small (size of child's pinky nail) amount of toothpaste.
  - Avoid putting the child to bed with a bottle or sippy cup containing anything other than water.
  - Feed foods containing sugar at mealtimes only and limit the amount.
  - Avoid saliva-sharing behaviors, such as sharing a spoon when tasting baby food, cleaning a dropped pacifier by mouth, or wiping the baby's mouth with saliva.
  - Avoid saliva-sharing behaviors between children via their toys, pacifiers etc.
  - Visit an oral health professional with child between six and 12 months of age.
- Educate pregnant women and new parents about care that will improve their oral health:
  - Brush teeth twice daily with a fluoride toothpaste and floss daily.
  - Eat foods containing sugar at mealtimes only and in limited amounts.
  - Choose water or low-fat milk as a beverage. Avoid carbonated beverages during pregnancy.
  - Choose fruit rather than fruit juice to meet the recommended daily fruit intake.
  - When possible, obtain necessary dental treatment before delivery.

## WHAT SHOULD HAPPEN IN AN OFFICE VISIT?

According to the American Academy of Pediatrics, every child should receive an oral health risk assessment by six months of age by a child health professional. In addition, children at significant risk for caries should be entered into an aggressive anticipatory guidance and intervention program. The American Academy of Pediatric Dentistry encourages parents and other health care providers to help establish a dental home by 12 months of age (11). The American Academy of Pediatric Dentistry has developed a tool to determine risk based on history and physical examination (Table 1). Although every child should have a dental visit as soon as the first tooth erupts, children with moderate and high risk indicators should be referred and followed up as soon as possible (19).

**Some interview questions that can assist in identifying the risk classification are presented below:**

Interview questions to ask parents of infants and young children:

- Does your child have special health care needs?
- Does your child take medications that may change the flow and/or composition of the saliva, such as asthma medications?
- Do you have a family dentist? Does your dentist provide care for young children? Have you made an appointment for your infant's first dental visit?
- Has this child had a cavity in the last one or two years?
- Have your other children had any dental problems? Have you had any problems with your own teeth?
- Does your child go to bed with a bottle containing anything other than water? Does your child drink from a cup?
- Is your child exposed to fluoride in drinking water, fluoride supplements or toothpaste?

### Clinical Evaluation

The American Academy of Pediatrics has provided guidelines for conducting clinical evaluation of children (20). A dental chair is not needed to perform an oral examination. For infants and children younger than three years, place the child in the parent's lap facing the parent. The provider and parent should sit face to face with knees touching. The child should then lie back (with the child's legs around the parent's waist) laying his or her head in the provider's lap with the head nestled in the provider's abdomen (Figure 1). An alternative position is to have the parent nestle the child in the parent's arm, while the provider examines the child's mouth. By age three years, children are able to lie on

**Figure 1. Position of the child for conducting clinical evaluation**

*Source: Douglass J, Douglass A, Slik H. A practical guide to infant oral health. American Family Physician 2004; 70(11):2113-2119. Reproduced with permission. Copyright © American Academy of Family Physicians. All Rights Reserved.*

**Table 1. American Academy of Pediatric Dentistry Caries-Risk Assessment Tool***

| **RISK FACTOR TO CONSIDER** (For each item below, circle the most accurate response found to the right under "Risk Indicators.") | **RISK INDICATORS** HIGH | MODERATE | LOW |
|---|---|---|---|
| **PART 1 – HISTORY** (Determined by interviewing the parent/primary caregiver) | | | |
| Child has special health care needs | Yes | | No |
| Child has condition that impairs salivary flow/composition | Yes | | No |
| Child's use of dental home | None | Irregular | Regular |
| Time lapsed since child's last cavity | <12 months | 12 to 24 months | >24 months |
| Child wears braces or orthodontic/oral appliances | Yes | | No |
| Child's mother has active decay present | Yes | | No |
| Socioeconomic status of child's caregiver | Low | Mid-level | High |
| Frequency of exposure to between meal sugars/cariogenic foods (include ad lib use of bottle/sippy cup containing juice or carbonated beverage) | >3 | 1 to 2 | Mealtime only |
| Child's exposure to fluoride | Does not use fluoridated toothpaste; drinking water is not fluoridated; not taking fluoride supplements | Uses fluoridated toothpaste; usually does not drink fluoridated water; does not take fluoride supplements | Uses fluoridated toothpaste; drinks fluoridated water or takes fluoride supplements |
| **PART 2 – CLINICAL EVALUATION** (Determined by examining the child's mouth) | | | |
| Visible plaque on anterior teeth | Present | | Absent |
| Gingivitis | | Present | Absent |
| Areas of demineralization (white-spot lesions) | More than one | One | None |
| Enamel characteristics: hypoplasia, defects, retentive pits/fissures | Present | | Absent |
| **PART 3 – SUPPLEMENTAL ASSESSMENT** (Optional) | | | |
| Radiographic enamel caries | Present | | Absent |
| Levels of mutans streptococci | High | Moderate | Low |

**Based on AAPD Policy on Use of a Caries-risk Assessment Tool (CAT) for infants, Children and Adolescents. Pediatr Dent. 2004(7): 25-27.*

*Each child's overall assessed risk for developing decay is based on the highest level of risk indicator circled above (i.e. a single risk indicator in any area of the "high-risk" category classifies a child as being "high-risk."*

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an examination table or sit on the lap of the caregiver (with child and caregiver facing the provider) so that the caregiver can steady the child. Regardless of the method used to look in the child's mouth, a good light source is essential. All teeth should be examined.

When examining a child's mouth, the child health professional should:

- Assess oral hygiene (e.g., presence of plaque or debris on the teeth).
- Provide education about removal of plaque and debris using the appropriate-sized toothbrush.
- Inspect all tooth surfaces using a mouth mirror.
- Assess for white spots or tooth decay.

## ORAL HEALTH CARE FOR YOUNG CHILDREN

Infant oral health care begins ideally with prenatal oral health counseling for parents, a service that should be provided by all health professionals. This early involvement will form the foundation on which positive experiences can be built. In its early stages, the effects of dental caries are largely reversible through existing interventions like the application of topical fluorides. Once a child is determined to be at risk for caries, a referral to a dentist is required. According to the Department of Health and Human Services, primary pediatric oral health care is best delivered in a "dental home," where competent oral health professionals provide continuous and comprehensive services. Ideally a dental home should be established at a young age (i.e., not later than 12 months of age in high-risk populations), while caries and other disease processes can be managed effectively with minimal or no restorative or surgical treatment (18). The recommendations for preventive dental care are provided in Appendix H.

An adequate dental home should be expected to provide children and their parents with:

- An accurate examination and risk assessment for dental diseases.
- An individualized preventive dental health program based upon the examination and risk assessment.
- Anticipatory guidance about growth and developmental issues (e.g., teething, thumb sucking, or pacifier habits).
- Advice for injury prevention and a plan for dealing with dental emergencies.
- Information about proper care of the child's teeth and supporting structures.
- Information about proper diet and nutrition practices.
- Pit and fissure sealants.
- A continuing care provider who accomplishes restorative and surgical dental care when necessary in a manner consistent with the parents' and child's psychological needs.
- Interceptive orthodontic care for children with developing malocclusions.
- A place for the child and parent to establish a positive attitude about dental health.
- Referrals to dental specialists, such as endodontists, oral surgeons, orthodontists, pediatric dentists and periodontists, when care cannot be directly provided within the dental home, and
- Coordination of care with the infant/child's primary care medical provider.

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# APPENDIX A:
# Consultation Form for Pregnant Women to Receive Oral Health Care

Referred To: _____ Date: _____

Patient Name: Last _____ First _____

DOB: _____ Estimated Delivery Date: _____ Week of Gestation Today: _____

Known Allergies: _____

Precautions: ☐ None ☐ Specify (If any): _____

_____

_____

This patient may have routine dental evaluation and care, including but not limited to:

- Oral health examination
- Dental prophylaxis
- Scaling and root planing
- Extraction
- Dental x-ray with abdominal and neck lead shield
- Local anesthetic with epinephrine
- Root canal
- Restorations (amalgam or composite) filling cavities

Patient may have: (Check all that apply)

☐ Acetaminophen with codeine for pain control
☐ Alternative pain control medication: (Specify) _____
☐ Penicillin
☐ Amoxicillin
☐ Clindamycin
☐ Cephalosporins
☐ Erythromycin (Not estolate form)

Prenatal Care Provider: _____ Phone: _____

Signature: _____ Date: _____

**DO NOT HESITATE TO CALL FOR QUESTIONS**

---

**DENTIST'S REPORT**
(for the Prenatal Care Provider)

Diagnosis: _____

_____

Treatment Plan: _____

_____

Name: _____ Date: _____ Phone: _____

Signature of Dentist: _____

# APPENDIX B:
# Healthy Diet During Pregnancy

## EATING FOR TWO

### What You Need To Know

You don't have to give up all the foods you love when you're pregnant. You just need to eat smart and make sure that most of your choices are healthy ones. You only need 300 extra calories per day to support your baby's growth and development.

### What You Can Do

Follow the serving recommendations. And watch your portions – you may be eating more than you think! Avoid too much sugar and fat in your diet.

### Your Healthy Diet

In January 2005, the federal government issued new dietary guidelines for Americans. The guidelines are for people who aren't pregnant and who eat about 2,000 calories per day. New recommendations for pregnant women haven't come out yet.

Check with you health care provider to see if you need to make any changes to the guidelines below during pregnancy.

**Fruit: 2-4 servings per day.** Sample of 1 serving:

- ½ cup fresh, frozen or canned fruit
- 1 medium whole fruit (orange, apple, banana)
- ¾ cup fruit juice (avoid unpasteurized juices)

**Vegetables: 3-5 servings per day.** Sample of 1 serving:

- ½ cup raw or cooked vegetables
- 1 small baked potato
- ¾ cup vegetable juice (avoid unpasteurized juices)

**Grains: 6-11 servings per day.** Sample of 1 serving:

- 1 slice bread
- 1 cup dry cereal
- ½ cup cooked rice, pasta or cereal

**Proteins: 3-4 servings per day.** Sample of 1 serving:

- 2 ounces meat, poultry or fish (see Note 1)
- 2 tablespoons peanut butter
- ½ cup beans

**Milk Products: 3-4 servings per day.** Sample of 1 serving:

- 1 cup milk
- 1 cup yogurt
- 2 1-inch cubes cheese (see Note 2)

## The Food Pyramid

In April 2005, the federal government issued its new food pyramid. The pyramid helps people choose healthy foods and the amounts that are right for them. It takes into account how much physical activity a person does every day.

The pyramid is for people who aren't pregnant. New recommendations for pregnant women haven't come out yet.

Check with you health care provider about using the pyramid during pregnancy.

## Notes

1. Some fish are unhealthy to eat during pregnancy. Avoid swordfish, shark, king mackerel and tile fish. These fish can contain potentially risky levels of mercury. Mercury can be transferred to the growing fetus and cause serious health problems. According to the U.S. Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA), a pregnant woman can safely eat up to 12 ounces (two average meals) a week of a variety of fish and shellfish that are low in mercury. These include shrimp, canned light tuna, salmon, pollock and catfish. But you should eat no more than 6 ounces of canned albacore (white) tuna per week. Canned white tuna has more mercury than canned light tuna. For the same reason, eat no more than 6 ounces of tuna steak per week. Also avoid game fish until you check its safety with your local health department. (A game fish is any fish caught for sport, such as trout, salmon or bass.) Also avoid raw fish, especially shellfish such as oysters and clams. If you eat raw fish, you could get an infection that could hurt your baby.
2. Avoid soft cheeses such as Brie, feta, Camembert, Roquefort and Mexican-style, unless they are labeled as made with pasteurized milk.

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# APPENDIX C:
# Guidelines for Pediatric Dental Care[1]

## 1. PREVENTIVE SERVICES

### a) Use of Fluorides

Use of fluorides for the prevention and control of dental caries is documented to be both safe and highly effective. Optimizing fluoride levels in water supplies in many ways is an ideal public health measure because it is effective, relatively inexpensive, and does not require conscious daily cooperation from individuals. Daily fluoride exposure through water supplies or supplemental tablets, and monitored use of fluoride dentifrice ("pea-size" amount on brush) should be recommended for all children as a primary preventive procedure. Professional fluoride treatments should be based on caries risk. Home protocols should be advised for children considered at higher caries risk.

**Systemically Administered Fluoride Supplements** – Fluoride supplements should be considered for all children drinking fluoride deficient water (<0.6 ppm F). Before supplements are prescribed, it is essential to know the fluoride concentration of the patient's drinking water. Review and, if necessary, testing of all sources of drinking water (i.e., home, day care, and school) are essential to determining the patient's need for fluoride supplements. Once the fluoride level of the water supply has been evaluated, either through contacting public health officials or independent water analysis (especially important for families relying on well water or homes with in-house filtration systems), and other sources of dietary fluoride have been assessed, the daily dosage schedule can be recommended and reviewed with parents in the context of appropriate fluoride usage.

**Dietary Fluoride Supplementation Schedule**

| Age | Fluoride in Drinking Water | | |
|---|---|---|---|
| | Less than 0.3 ppm F | 0.3-0.6 ppm F | More than 0.6 ppm F |
| Birth to 6 mos. | 0 | 0 | 0 |
| 6 mos. to 3 yrs. | 0.25 mg | 0 | 0 |
| 3 yrs. to 6 yrs. | 0.50 mg | 0.25 mg | 0 |
| 6 yrs. to 16 yrs. | 1.00 mg | 0.50 mg | 0 |

**Professionally Applied Topical Fluoride Treatment** – Eight percent stannous fluoride solution, 1.23% acidulated phosphate fluoride (APF) solution or gel and 5% sodium fluoride varnish are clinically proven agents for professionally applied fluoride treatments. Selection of an agent for a specific treatment generally depends on provider preference, setting and available equipment, and factors related to the child (e.g., age, level of development). APF is widely used because of better stability, patient acceptance and ease of application. Fluoride varnish has physical properties that may minimize ingestion by young children and children with disabilities. Appropriate precautionary measures should be taken to prevent or minimize swallowing of professionally applied topical fluorides.

**Self- or Parentally-Applied Fluoride** – The use of fluoride containing toothpaste should be recommended as a primary preventive procedure. However, the use of fluoridated toothpaste in children who cannot expectorate consistently carries an increased risk of dental fluorosis (alteration of tooth appearance

or structure due to high levels of fluoride in the outer enamel layer of a tooth). Therefore, the risk of fluorosis must be weighed against the benefit of caries prevention in determining the use of a fluoride-containing toothpaste by a child. Parents/caregivers should be counseled on the frequency of tooth brushing and use of no more than a "pea-sized" amount of toothpaste.

Children at high risk for caries (e.g., children with orthodontic/prosthodontic appliances, with special health care needs, with reduced salivary function, who are unable to clean teeth properly, who are at dietary risk, or who have high oral levels of Streptococcus mutans. (S. mutans) or who are caries active should be considered for additional fluoride treatment. Daily home fluoride programs using fluoride mouth rinses or brush-on fluoride gels should be considered. If a high caries risk patient cannot or will not comply with home fluoride therapy, frequent professional fluoride treatments may be necessary.

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### b) Pit and Fissure Sealants

Sealants are plastic-like materials that are bonded to caries-susceptible pits and fissures on tooth surfaces that remain decay-prone even when exposed to fluoride and are used to protect these areas from caries development or progression. Ideally, sealants should be placed as soon as technically possible after teeth erupt for maximum decay prevention; however, newly or partially erupted teeth are often hard to keep dry enough to promote good bonding of the sealant to the tooth. Sealants may be applied in conjunction with small composite resin restorations in localized areas of decay to provide protection against caries while preserving tooth structure (sometimes referred to as preventive resin resotrations).

**Indications/Diagnoses:** Sealants are indicated as a preventive measure for high-risk primary molars, permanent molars and premolars with deep pits and/or fissures, and in the cingulum area of maxillary incisors with deep lingual pits and/or fissures. Sealants also are generally recommended as a preventive measure for permanent molars. Sealants can be applied to teeth with evidence of decay to arrest the progress of decay; however, all sealed teeth and especially those with evidence of early signs of decay need to be monitored regularly to ensure that the sealants are retained and performing effectively to arrest decay. Sealants also are often applied in conjunction with the placement of resin restorations in cases of one or more small areas of decay on fissured surfaces to provide protection against caries while preserving tooth structure.

*[1]Selected references are provided for various sections. Additional references and information related to various sections can be found in the AAPD Reference Manual, available on the Internet at www.aapd.org or from the American Academy of Pediatric Dentistry, Chicago, IL.*

*Source: Centers for Medicare and Medicaid Services, U.S. Department of Human and Health Services. Guide to Children's Dental Care in Medicaid. Available at: www.cms.hhs.gov/MedicaidDentalCoverage/Downloads/dentalguide.pdf*

# APPENDIX D:
# American Academy of Pediatric Dentistry Periodicity Schedule[1]

## PERIODICITY OF EXAMINATION, PREVENTIVE DENTAL SERVICES, ANTICIPATORY GUIDANCE AND ORAL TREATMENT FOR CHILDREN

### Birth to 12 Months (For Children With Special Health Care Needs or At High Risk for Caries)

1. Complete the clinical oral assessment and appropriate diagnostic tests to assess oral growth and development and/or pathology.
2. Provide oral hygiene counseling for parents, guardians, and caregivers, including the implications of the oral health of the caregiver.
3. Remove supra- and subgingival stains or deposits as indicated.
4. Assess the child's systemic and topical fluoride status (including type of infant formula used, if any, and exposure to fluoridated toothpaste), and provide counseling regarding fluoride. Prescribe systemic fluoride supplements if indicated, following assessment of total fluoride intake from drinking water, diet, and oral hygiene products.
5. Assess appropriateness of feeding practices, including bottle and breast-feeding, and provide counseling as indicated.
6. Provide dietary counseling related to oral health.
7. Provide age-appropriate injury prevention counseling for orofacial trauma.
8. Provide counseling for non-nutritive oral habits (digit, pacifiers, etc.).
9. Provide diagnosis and required treatment and/or appropriate referral for any oral diseases or injuries.
10. Provide anticipatory guidance for parent/guardian.
11. Consult with the child's physician as needed.
12. Based on evaluation and history, assess the patient's risk for oral disease.
13. Determine the interval for periodic reevaluation.

### 12 to 24 Months[2]

1. Repeat Birth-12 month procedures every six months or as indicated by individual patient's needs/susceptibility to disease.
2. Review patient's fluoride status, including any childcare arrangements, which may impact on systemic fluoride intake and provide parental counseling.
3. Provide topical fluoride treatments every six months or as indicated by the individual patient's needs.

### 2 to 6 Years

1. Repeat 12-24 month procedures every six months or as indicated by individual patient's needs/susceptibility to disease. Provide age-appropriate oral hygiene instructions.
2. Complete a radiographic assessment of pathology and/or abnormal growth and development, as indicated by individual patient's needs.
3. Scale and clean the teeth every six months or as indicated by the individual patient's needs.
4. Provide topical fluoride treatments every six months or as indicated by the individual patient's needs.
5. Provide pit and fissure sealants for primary and permanent teeth as indicated by individual patient's needs.
6. Provide counseling and services (athletic mouth guards) as needed for orofacial trauma prevention.
7. Provide assessment/treatment or referral of developing malocclusion as indicated by individual patient's needs.
8. Provide diagnosis and required treatment and/or appropriate referral for any oral diseases, habits, or injuries as indicated.
9. Assess speech and language development, and provide appropriate referral as indicated.

### 6 to 12 Years

1. Repeat 2-6 year procedures every six months or as indicated by individual patient's needs/susceptibility to disease.
2. Provide substance abuse counseling (smoking, smokeless tobacco, etc.).

### 12 to 18 Years

1. Repeat 6-12 year procedures every six months or as indicated by individual patient's needs/susceptibility to disease.
2. At an age determined by patient, parent, and dentist, refer the patient to a general dentist for continuing oral care. Infant Oral Health Care

*[1]American Academy of Pediatric Dentistry, Reference Manual 2000-01 Pediatr Dent 2000;22.*

*[2]All children should have established a dental home during this period.*

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# APPENDIX E: Resources

## WEB SITES

**Healthy People 2010: Section 21, Oral Health**
**http://www.healthypeople.gov/Document/HTML/Volume2/21Oral.htm**
This site provides background information on oral health as well as the actual Oral Health 2010 objectives.

**NIDCR National Oral Health Information Clearing House**
**http://www.nidcr.nih.gov**
Clicking on the "Health Information" icon at the top brings up an indexed list of oral health topics.

**CDC Oral Health Resources**
**http://www.cdc.gov/oralhealth/**
This site is set up to permit searches and to browse by topic.

**Oral Health America**
**http://www.oralhealthamerica.org**
Oral Health America is a fully independent non-profit for public benefit that follows a path of broad-based public advocacy through targeted programs and communications efforts to improve oral health for all Americans. Of particular use at this site are the "Report Cards" that include topics such as the oral health of older Americans.

**Maternal and Child Health Library: Knowledge Path –**
**Oral Health and Children and Adolescents**
**http://www.mchlibrary.info/KnowledgePaths/kp_oralhealth.html**
This knowledge path offers a comprehensive collection of links and resources, although it may not be easy to identify the most useful resources.

**Children's Dental Health Project**
**http://www.cdhp.org**
This site contains a wealth of resources about children's oral health, particularly issues involving access to care, financing programs, and health disparities. Of particular note is the Interfaces project that explores the relationship between medicine and dentistry in meeting the oral health needs of young children.

**American Academy of Pediatric Dentistry http://www.aapd.org**
**American Dental Association http://www.ada.org**
American Academy of Pediatrics has developed a comprehensive Web site on infant and child oral health. It is scheduled to go live November 1, 2004. Contact Wendy Nelson in the AAP Division of Community Pediatrics at 1-800-433-9016 x7789.

## ADDITIONAL RESOURCES

**http://www.mchoralhealth.org/**
Search the entire National Maternal and Child Oral Health Resource Center collection of print and electronic materials. Examples of the types of materials that can be found include fact sheets, curricula, manuals, standards/guidelines, conference proceedings, reports, and surveys.

**A Health Professional's Guide to Pediatric Oral Health Management**
A series of seven self-contained modules designed to assist health professionals (for example, physicians, physician assistants, nurses and dietitians) in managing the oral health of infants and young children.

**Open Wide: Oral Health Training for Health Professionals**
A series of four self-contained modules designed to help health and early childhood professionals working in community settings (for example, Head Start and WIC staff) promote oral health for infants and young children.

**Bright Futures in Practice: Oral Health**
**National Center for Education in Maternal and Child Health**
This guide is designed to help health professionals implement specific oral health guidelines during infancy, early childhood, middle childhood, and adolescence

## SCREENING/RISK ASSESSMENT

**Clinical Caries Risk Assessment**
**Kids Get Care**
This assessment tool is designed to help clinicians assess children's oral health and habits. It is intended for use in both community and clinical settings, and it includes guidance for parents and other caregivers on preventive oral health practices.

**http://www.aapd.org/media/policies.asp**
The American Academy of Pediatric Dentistry's Reference Manual is divided into 5 sections: (1) definitions; (2) oral health policies; (3) clinical guidelines; (4) endorsements; and (5) resources. Oral health policies are statements relating to AAPD positions on various public health issues. Clinical guidelines are practice recommendations designed to assist the dental provider in making decisions concerning direct patient care. Adherence to the guidelines increases the probability of a favorable practice outcome and decreases the likelihood of an unfavorable practice outcome.

The American Academy of Pediatrics in partnership with the federal Maternal and Child Health Bureau (MCHB), have implemented the Pediatrics Collaborative Care (PedsCare) Program, Oral

Health Initiative. The purpose of the program is to promote improved child oral health by offering pediatricians the tools and support they need to provide community-based, collaborative care. The goal of the first stage of the initiative is to provide training on oral health care.

**Oral Health Risk Assessment Training for Pediatricians and Other Child Health Professionals**
This training is designed to support pediatricians and child health providers as they implement oral health risk assessments during well-child visits.

The training provides participants with an understanding of:

- The role of the child health care professional in assessing children's oral health
- The pathogenesis of caries
- Conducting an oral health risk assessment (including oral screening exam)
- Providing appropriate oral health education to families
- Developing a management plan with referrals to a dental home

# APPENDIX F:
# Guidelines for Prescribing Dental Radiographs

Guidelines for prescribing dental radiographs (x-rays) have been developed by an expert panel from the dental profession under the auspices of the Food and Drug Administration (FDA). The panel was convened by the FDA to reach a consensus on standardizing dental radiographic procedures because dental radiographs rank second in frequency of use and in total cost to the public. The panel was also concerned about saving the patient from unwarranted exposure to radiation. The guidelines serve as recommendations that dentists can use to determine when they should take a radiograph. They help determine the type of radiograph needed, how frequently and under what conditions radiographs should be taken. Under these guidelines, a dentist will take an X-ray based on clinical observation and the patient's health history. Dental radiographs serve only as adjuncts to a comprehensive oral examination and evaluation and by themselves or in conjunction with photographs do not provide adequate information to determine a properly developed treatment plan. Radiographs taken only for administrative purposes expose the child to unnecessary radiation, and therefore are inappropriate, unethical, and violate ADA and FDA policies.

The guidelines are based on patient selection criteria, which are descriptions of clinical conditions derived from patient signs, symptoms and history that identify patients who are likely to benefit from a particular radiographic examination. The guidelines are illustrated in a chart designed to serve as a convenient reference and are offered as a supplement to professional expertise (see Table below). The recommendations in this chart are subject to clinical judgment and may not apply to every patient. They are to be used by dentists only after reviewing the patient's health history and completing a clinical examination. The recommendations do not need to be altered because of pregnancy.

**Guidelines for Prescribing Dental Radiographs**

| Patient Category | Child | | Adolescent | Adult | |
|---|---|---|---|---|---|
| | Primary Dentition (prior to eruption of first permanent tooth) | Transitional Dentition (following eruption of first permanent tooth) | Permanent Dentition (prior to eruption of third molars) | Dentulous | Edentulous |
| New patient* All new patients to assess dental diseases and growth and development | Posterior bite-wing examination if proximal surfaces of primary teeth cannot be visualized or probed | Individualized radiographic examination consisting of periapical/occlusal views and posterior bite-wings or panoramic examination and posterior bite-wings | Individualized radiographic examination consistin of posterior bite-wings and selected pariapicals. A full mouth intraoral radiographic examination is appropriate when the patient presents with clinical evidence of generalized dental disease or a history of extensive dental treatment | | Full mouth intraoral radiographic examination or panoramic examination |
| Recall patient* Clinical caries or high-risk factors for caries† | Posterior bite-wing examination at 6-month intervals or until no carious lesions are evident. | | Posterior bite-wing examination at 6- to 12-month intervals or until no carious lesions are evident | Posterior bite-wing examination at 12- to 18-month intervals | Not applicable |
| No clinical caries and no high-risk factors for caries† | Posterior bite-wing examination at 12- to 24-month intervals if proximal surfaces of primary teeth cannot be visualized or probed | Posterior bite-wing examination at 12- to 24-month intervals | Posterior bite-wing examination at 18- to 36-month intervals | Posterior bite-wing examination at 24- to 36-month intervals | Not applicable |
| Periodontal disease or a history of periodontal treatment | Individualized radiographic examination consisting of selected periapical and/or bite-wing radiographs for areas where periodontal disease (other than nonspecific gingivitis) can be demonstrated clinically | | Individualized radiographic examination consisting of selected periapical and/or bite-wing radiographs for areas where periodontal disease (other than nonspecific gingivitis) can be demonstrated clinically | | Not applicable |
| Growth and development assessment | Usually not indicated | Individualized radiographic examination consisting of a periapical/occlusal panoramic examination | Periapical or panoramic examination to assess developing or third molars | Usually not indicated | Usually not indicated |

***Clinical situations for which radiographs may be indicated include:**

**A. Positive Historical Findings**

1. Previous periodontal or endodontic therapy
2. History of pain or trauma
3. Familial history of dental anomalies
4. Postoperative evaluation of healing
5. Presence of implants

**B. Positive Clinical Signs/Symptoms**

1. Clinical evidence of periodontal disease
2. Large or deep restorations
3. Deep carious lesions
4. Malposed or clinically impacted teeth
5. Swelling
6. Evidence of facial trauma
7. Mobility of teeth
8. Fistula or sinus tract infection
9. Clinically suspected sinus pathology
10. Growth abnormalities.
11. Oral involvement in known or suspected systemic disease
12. Positive neurologic findings in the head and neck
13. Evidence of foreign objects
14. Pain and/or dysfunction of the temporo
15. Facial asymmetry
16. Abutment teeth for fixed or removable partial prosthesis
17. Unexplained bleeding
18. Unexplained sensitivity of teeth
19. Unusual eruption, spacing or migration of teeth
20. Unusual tooth morphology, calcification or color
21. Missing teeth with unknown reason

**†Patients at high risk for caries may demonstrate any of the following:**

1. High level of caries experience
2. History of recurrent caries
3. Existing restoration of poor quality
4. Poor oral hygiene
5. Inadequate fluoride exposure
6. Prolonged nursing (bottle or breast)
7. Diet with high sucrose frequency
8. Poor family dental health
9. Developmental enamel defects
10. Developmental disability
11. Xerostomia
12. Genetic abnormality of teeth
13. Many multisurface restorations
14. Chemo/radiation therapy

*The recommendations contained in this table were developed by an expert dental panel comprised of representatives from the Academy of General Dentistry, American Academy of Dental Radiology, American Academy of Oral Medicine, American Academy of Pediatric Dentistry, American Academy of Periodontology, and the American Dental Association under the sponsorship of the Food and Drug Administration (FDA). The chart is being reproduced and distributed to the dental community by Eastman Kodak Company in cooperation with the FDA.*

*Source: American Dental Association, U.S. Food & Drug Administration. The Selection of Patients for Dental Radiograph Examinations. Available at: www.ada.org*

## MODULE 3: PREVENTION OF TOOTH DECAY

### 3.3 Feeding and Eating Practices

- Do not put the infant or child to sleep with a bottle or sippy cup or allow frequent and prolonged bottle feedings or use of a sippy cup containing beverages high in sugar (for example, fruit drinks, soda, or fruit juice), milk, or formula during the day or at night.
- Do not use a bottle to calm an infant or to put an infant to bed. Instead of a bottle try:
  - Giving the infant a favorite blanket or toy.
  - Offering the infant a clean pacifier.
  - Holding, patting, or rocking the infant.
  - Reading to the infant.
  - Softly talking or singing to the infant.
- If an infant is accustomed to being put to bed with a bottle, offer a bottle filled with plain water. If the infant does not adapt initially to the plain water, it may be necessary to fill the bottle with a mixture of juice and water, reducing the amount of juice slightly each night until only water is used.
- Hold the infant or child while feeding. Never prop a bottle (that is, use pillows or any other objects to hold a bottle in the infant's mouth).
- Never add cereal to a bottle. This causes sugary fluids to pool around the teeth and can also cause choking if the infant is unable to swallow the extra food. Instead, always feed infants and children solid foods with a spoon or fork, or, if the infant or child is coordinated enough, encourage self-feeding.
- Introduce a small cup when the infant can sit up without support.
- As the infant begins to eat more solid foods and drink from a cup, the infant can be weaned from the bottle. Begin to wean the infant gradually, at about 9 to 10 months. By 12 to 14 months, most infants can drink from a cup.
- Do not dip pacifiers in sweetened foods like sugar or honey.
- Serve age-appropriate healthy snacks such as fruit, vegetables, grain products (especially whole grain), and dairy products instead of foods high in sugar such as candy, cookies, or cake. (See Module 4, section 4.6.)
- Offer snacks at regular times between meals only. If a child snacks frequently, brush the child's teeth three times a day.

- Make sure the child drinks plenty of water throughout the day, especially between meals and snacks.
- Don't offer food in return for good behavior. This teaches children that foods are rewards and can lead to the development of unhealthy habits.

*Source: Open Wide: Oral Health Training for Health Professionals, National Center for Education in Maternal and Clinical Health and Georgetown University. Used with permission.*

# APPENDIX H:
# Selected Evidence Reviews and Guidelines

### Oral Health in America: A Report of the Surgeon General

*"As a remote gram-negative infection, periodontal disease may have the potential to affect pregnancy outcome."*

### American Academy of Periodontology Statement Regarding Periodontal Management of the Pregnant Patient. J Periodontal, March 2004.

*"Preventive oral care services should be provided as early in pregnancy as possible. However, women should be encouraged to achieve a high level of oral hygiene prior to becoming pregnant and throughout their pregnancies. If examination indicates a need for periodontal scaling and root planning or more involved periodontal treatment, these procedures are usually scheduled early in the second trimester. The presence of acute infection, abscess, or other potentially disseminating sources of sepsis may warrant prompt intervention, irrespective of the stage of pregnancy."*

### American Academy of Pediatrics Policy Statement Oral Health Risk Assessment Timing and Establishment of the Dental Home

*"Pediatricians and pediatric health care professionals should develop the knowledge base to perform oral health risk assessments on all patients beginning at six months of age. Patients who have been determined to be at risk of development of dental caries or who fall into recognized risk groups should be directed to establish a dental home six months after the first tooth erupts or by one year of age (whichever comes first). The ideal deterrence to early childhood caries is the establishment of the dental home when indicated by the unique needs of the child. Although not always feasible because of manpower and participation issues, best practice dictates that whenever feasible, all patients should have a comprehensive dental examination by a dentist in the early toddler years."*

### Guide To Children's Dental Care In Medicaid – CMS, DHHS Emphasis on Early Initiation of Oral Health Care

*"Science has provided a clear understanding that tooth decay is an infectious, transmissible, destructive disease caused by acid-forming bacteria acquired by toddlers from their mothers shortly after their first teeth erupt (generally around six months of age). In its early stages, the effects of dental caries are largely reversible through existing interventions (e.g., fluorides) that promote replacement of lost minerals from the outer layer of the tooth (enamel). These findings, combined with epidemiological data on the occurrence of tooth decay in infants and young children, suggest that true primary prevention must begin in the first to second year of life. This evidence also suggests that particular attention should be paid to the oral health of expectant and new mothers."*

### Infant Oral Health Care

*"Infant oral health care begins ideally with prenatal oral health counseling for parents, a service that should be provided by knowledgeable health care providers such as obstetricians, family physicians, pediatricians and nurse practitioners, as well as dental providers. Actual infant oral health care visits*

*focusing on relevant history taking, clinical examination of oral structures, risk assessment, counseling, anticipatory guidance and necessary follow-up interventions should begin early, ideally before dental diseases are established. This early involvement is viewed as the foundation on which a lifetime of positive oral health and dental care experiences can be built, thus minimizing costs associated with treatment of dental diseases."*

### First Dental Visit

*"Despite growing recognition of the above [importance of oral health care in infants], a discrepancy exists between dental and public health organizations' versus the American Academy of Pediatrics' recommended age for a first dental visit. American Academy of Pediatric Dentistry (AAPD) policy, as reflected in its* ***"Periodicity of Examination, Preventive Dental Services, and Oral Treatment for Children,"*** *recommends that children be seen by a dentist following the eruption of the first tooth, but not later than 12 months of age. The AAPD recommendation is embraced by the Bright Futures consortium of 28 child health organizations and is consistent with the policies of the dental and public health groups including the American Dental Association, American Dental Hygienists Association and the American Public Health Association. In contrast, the American Academy of Pediatrics (AAP) recommends that every child should begin to receive oral health risk assessments by six months of age from a pediatrician or a qualified pediatric health care professional, and that infants identified as having significant risk of caries or being in a high-risk group should be entered into an aggressive anticipatory guidance and intervention program provided by a dentist between six and twelve months of age. NOTE: Under the Medicaid program, states are required to develop their own dental periodicity schedules after appropriate consultations with dental groups involved in child health care or states may adopt a nationally recognized dental periodicity schedule."*

## DENTAL X-RAYS

### American Dental Association and U.S. Department of Health and Human Services (Revised: 2004)

*"Once a decision to obtain radiographs is made, it is the dentist's responsibility to follow the ALARA Principle (As Low as Reasonably Achievable) to minimize the patient's exposure to radiation. Examples of good radiologic practice include:*

- *Use of the fastest image receptor compatible with the diagnostic task*
- *Collimation of the beam to the size of the receptor whenever feasible*
- *Proper film exposure and processing techniques*
- *Use of leaded aprons and thyroid collars*

*The amount of scattered radiation striking the patient's abdomen during a properly conducted radiographic examination is negligible. However, there is some evidence that radiation exposure to the thyroid during pregnancy is associated with low birth weight. Protective thyroid collars substantially reduce radiation exposure to the thyroid during dental radiographic procedures. Because every precaution should be taken to minimize radiation exposure, protective thyroid collars and aprons should be used whenever possible. This practice is strongly recommended for children, women of childbearing age and pregnant women."*

## U.S. Preventive Services Task Force Summary of Recommendations

*"The USPSTF recommends that primary care clinicians prescribe oral fluoride supplementation at currently recommended doses to preschool children older than six months of age whose primary water source is deficient in fluoride.*

*The USPSTF found fair evidence that, in preschool children with low fluoride exposure, prescription of oral fluoride supplements by primary care clinicians leads to reduced dental caries. The USPSTF concluded that the benefits of caries prevention using oral fluoride supplementation outweigh the potential harms of dental fluorosis, which in the United States are primarily observed as a mild cosmetic discoloration of the teeth.*

*The USPSTF concludes that the evidence is insufficient to recommend for or against routine risk assessment of preschool children by primary care clinicians for the prevention of dental disease.*

*The USPSTF found no validated risk-assessment tools or algorithms for assessing dental disease risk by primary care clinicians and little evidence that primary care clinicians are able to systematically assess risk for dental disease among preschool-aged children. The USPSTF further found little evidence that either counseling of parents or referring high-risk children to dental care providers results in fewer caries or reduced dental disease. Thus, the USPSTF concluded there is insufficient evidence to determine the balance between the benefits and harms of routine risk assessment to prevent dental disease among preschool children."*

## Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States. MMWR August 17, 2001/50(RR14): 1-14.

**Table 4. Quality of evidence, strength of recommendation, and target population of recommendation for each fluoride modality to prevent and control dental caries**

| Modality[1] | Quality of evidence (grade) | Strength of recommendation (code) | Target population[2] |
|---|---|---|---|
| Community water fluoridation | II-1 | A | All areas |
| School water fluoridation | II-3 | C | Rural, nonfluoridated areas |
| Fluoride toothpaste | I | A | All persons |
| Fluoride mouthrinse | I | A | High risk[3] |
| Fluoride supplements | | | |
| Pregnant women | I | E | None |
| Children aged <6 years | II-3 | C | High risk |
| Children aged 6 to 16 years | I | A | High risk |
| Persons aged >16 years | [4] | C | High risk |
| Fluoride gel | I | A | High risk |
| Fluoride varnish | I | A | High risk |

[1]*Modalities are assumed to be used as directed in terms of dosage and age of user.*

[2]*Quality of evidence for targeting some modalities to persons at high risk is grade III (i.e., representing the opinion of respected authorities) and is based on considerations of cost-effectiveness that were not included in the studies establishing efficacy or effectiveness.*

[3]*Populations believed to be at increased risk for dental caries are those with low socioeconomic status or low levels of parental education, those who do not seek regular dental care, and those without dental insurance or access to dental services. Individual factors that possibly increase risk include active dental caries; a history of high caries experience in older siblings or caregivers; root surfaces exposed by gingival recession; high levels of infection with cariogenic bacteria; impaired ability to maintain oral hygiene; malformed enamel or dentin; reduced salivary flow because of medications, radiation treatment, or disease; low salivary buffering capacity (i.e., decreased ability of saliva to neutralize acids); and the wearing of space maintainers, orthodontic appliances, or dental prostheses. Risk can increase if any of these factors are combined with dietary practices conducive to dental caries (i.e., frequent consumption of refined carbohydrates). Risk decreases with adequate exposure to fluoride.*

[4]*No published studies confirm the effectiveness of fluoride supplements in controlling dental caries among persons aged >16 years.*

## ADA Statement On Dental Amalgam (Revised January 8, 2002)

Dental amalgam (silver filling) is considered a safe, affordable and durable material that has been used to restore the teeth of more than 100 million Americans. It contains a mixture of metals such as silver, copper and tin, in addition to mercury, which chemically binds these components into a hard, stable and safe substance. Dental amalgam has been studied and reviewed extensively, and has established a record of safety and effectiveness.

Issued in late 1997, the FDI World Dental Federation and the World Health Organization consensus statement on dental amalgam stated, *"No controlled studies have been published demonstrating systemic adverse effects from amalgam restorations." The document also states that, aside from rare instances of local side effects of allergic reactions, "the small amount of mercury released from amalgam restorations, especially during placement and removal, has not been shown to cause any adverse health effects."*

The ADA's Council on Scientific Affairs' 1998 report on its review of the recent scientific literature on amalgam states: *"The Council concludes that, based on available scientific information, amalgam continues to be a safe and effective restorative material."* The Council's report also states, *"There currently appears to be no justification for discontinuing the use of dental amalgam."*

In an article published in the February 1999 issue of the Journal of the American Dental Association, researchers report finding *"no significant association of Alzheimer's Disease with the number, surface area or history of having dental amalgam restorations,"* and *"no statistically significant differences in brain mercury levels between subjects with Alzheimer's Disease and control subjects."*

The U.S. Public Health Service issued a report in 1993 stating there is no health reason not to use amalgam, except in the extremely rare case of the patient who is allergic to a component of amalgam. This supports the findings of the Food and Drug Administration (FDA), the National Institutes of Health Technology Assessment Conference and the National Institute of Dental and Craniofacial Research, that dental amalgam is a safe and effective restorative material. In addition, in 1991, Consumer Reports noted, *"Given their solid track record . . . amalgam fillings are still your best bet."*

In 1991, the FDA's Dental Products Panel found no valid data to demonstrate clinical harm to patients from amalgams or that having them removed would prevent adverse health effects or reverse the course of existing diseases. The FDA's most recent reaffirmation of amalgam's safety was published on December 31, 2002.

The reaffirmation reads, *"FDA and other organizations of the U.S. Public Health Service (USPHS) continue to investigate the safety of amalgams used in dental restorations (fillings). However, no valid scientific evidence has ever shown that amalgams cause harm to patients."*

It continues, *"Also, USPHS scientists analyzed about 175 peer-reviewed studies submitted in support of three citizen petitions received by FDA after the 1993 report. They concluded that data in these studies did not support claims that individuals with dental amalgam restorations will experience problems, including neurologic, renal or developmental effects, except for rare allergic or hypersensitivity reactions."*

The U.S. Public Health Service found in 1993 *"no persuasive reason to believe that avoiding amalgams or having them removed will have a beneficial effect on health."* In fact, it is inadvisable to have amalgams removed unnecessarily because it can cause structural damage to healthy teeth.

The ADA supports ongoing research in the development of new materials that it hopes will someday prove to be as safe and effective as dental amalgam. However, the ADA continues to believe that amalgam is a valuable, viable and safe choice for dental patients and concurs with the findings of the U.S. Public Health Service that amalgam has *"continuing value in maintaining oral health."*

## American Dental Association Statement On "Ante Partum Dental Radiography and Infant Low Birth Weight" (JAMA, April 28, 2004)

Recently published research associating pregnant women's exposure to dental X-rays with low-weight births reinforces the importance of the American Dental Association's long-standing recommendation that, in addition to abdominal shielding (e.g., protective aprons), dentists should use thyroid collars on all patients whenever practical to minimize radiation exposure. ADA recommendations for using leaded aprons and collars were first published in 1989 and reinforced in updated guidelines in 2001 (PDF).*

The American Dental Association recommends that pregnant women postpone elective dental x-rays until after delivery; however, there are times when an x-ray may be required during pregnancy to help dentists diagnose and treat oral disease.

Maintaining good oral health during pregnancy can be critical to the overall health of both expectant mothers and their babies. As such, pregnant women should continue to see a dentist regularly for oral exams and professional teeth cleanings. Left untreated, some maternal oral problems can potentially threaten the health of unborn children. For example, studies have shown that pregnant women with severe gum disease may be at increased risk for pre-term delivery. Preliminary follow up studies have shown professional oral health care administered during pregnancy to this at-risk group actually improved pregnancy outcomes.

Women should inform their dentists if they are pregnant, might be pregnant or plan to become pregnant. Should dental x-rays be required during pregnancy, the American Dental Association recommends that a protective thyroid collar and apron be used, unless specific clinical conditions indicate otherwise.

The not-for-profit ADA is the nation's largest dental association, representing more than 149,000 members. The premier source of oral health information, the ADA has advocated for the public's health and promoted the art and science of dentistry since 1859. The ADA's state-of-the-art research facilities develop and test dental products and materials that have advanced the practice of dentistry and made the patient experience more positive. The ADA Seal of Acceptance long has been a valuable and respected guide to consumer and professional products.

**(Council on Dental Materials, Instruments, and Equipment. Recommendations in radiographic practices: an update, 1988. Journal of the American Dental Association 1989; 118:115-7; Council on Scientific Affairs. An update on radiographic practices: information and recommendations. Journal of the American Dental Association, 2001; 132: 234-8).*