



# Florida's Burden of Oral Disease Surveillance Report

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Version 1.1



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## Introduction

Oral health is vitally important to overall health and well-being. Oral health is much more than just healthy teeth. Oral health is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects, periodontal disease, tooth decay and tooth loss, and other disease and disorders that affect the oral cavity.<sup>1</sup> Good oral health also includes the ability to carry on basic human functions such as chewing, swallowing, speaking, smiling, and singing. These functions are critical in our communication with others and interaction with the world.

Research has shown a link between poor oral health and diabetes, heart and lung disease, stroke, respiratory illnesses, and adverse birth outcomes including the delivery of pre-term and low birth weight infants. Changes in the mouth often are the first signs of problems elsewhere in the body, such as infectious diseases, immune disorders, nutritional deficiencies, and cancer.

Maintaining good oral and physical health requires a multi-faceted approach including a healthy diet, proper exercise, access to health care professionals, and public health initiatives such as fluoridated community water and preventive dental services including dental sealants. Dental disease is largely preventable through effective health promotion and dental disease prevention programs. Collaborative partnerships among individuals, communities, health care providers and governing bodies are necessary to achieve optimal oral health in Florida.

This surveillance report summarizes the most current information available on the burden of oral disease in Florida. As Florida is a large and diverse state, this report also highlights groups and regions in our state that are at highest risk for oral health problems and discusses key preventive initiatives currently utilized in Florida to prevent dental diseases and provide access to dental care information across the state. The goal of this surveillance report is to quantify the oral health burden in Florida and to help guide programmatic and policy efforts to prevent and treat oral diseases to enhance the quality of life for all Floridians.

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<sup>1</sup> "Oral Health," n.d.

## Executive Summary

The Florida Department of Health's (Department) Public Health Dental Program looks towards the future with great expectation for progress in oral disease prevention and partnering with other agencies, programs, organizations, and stakeholders to address the dental disease burden in Florida. This document serves as a foundational review of surveillance data portraying the current status of oral disease across the life span of Florida's population groups.

Collaboration among public and private organizations in examining the data and developing a plan ensures the best results for improving the oral health status of Florida's population.

Most oral disease is preventable, however, disparities in the prevalence of dental disease exists for specific populations in Florida. Lack of access to preventive dental measures, such as screenings, dental sealants, and water fluoridation, and barriers to dental care creates inequities for children and older adults who carry the burden of oral disease in the state. While Florida has progressed in recent years in conducting oral health surveillance, expanding public health dental services, and increasing the percentage of population served with fluoridated water, oral health continues to be a priority for improving the overall health status of Floridians.

First time oral health surveillance projects of third grade children, Head Start children and older adults were conducted from 2013-2016 to assess the oral health status of these populations across Florida. Rates for untreated decay varied disproportionately across racial/ethnic groups with highest rates seen in non-Hispanic Black third graders followed closely by Asian children. The presence of dental sealants also revealed racial/ethnic disparities with rates for non-Hispanic Black, Hispanic, Asian and Multi-racial third grade children ranging between 7-15% lower than for non-Hispanic White children. Untreated decay rates for Head Start children revealed similar results with rates of early childhood caries highest for Hispanic children and untreated decay highest among non-Hispanic Black children. Lastly, preliminary results from the Older Adult Oral Health Screening Project reveal a poor oral health status, with high rates of untreated decay, need for periodontal care, and early dental care need.

Parent-reported data from a nationwide survey on the condition of their children's teeth concurs with Florida's oral health surveillance data results. Florida parents of non-Hispanic White children reported their children's teeth in excellent condition compared to non-Hispanic Black and Hispanic counterparts as only fair to good condition. Medicaid reports reveal that only 26% of Medicaid-eligible recipients under the age of 21 received dental services in 2014, further substantiating socioeconomic disparities for children accessing dental services.

Children with Special Health Care Needs (SHCN) experience many barriers in accessing dental services. Nearly 25% of these children reported not having a dental visit in the past year. Finding a dentist who treats SHCN children is often difficult with approximately 70% of surveyed dentists reporting they treat between one and twenty SHCN patients annually.

Decay rates in children have been linked to the consumption of sugar sweetened beverages (SSB). The prevalence of SSB consumption among middle and high school students estimates

that 23% and 22%, respectively, drink sodas one or more times per day. Prevention education is warranted for addressing this dietary concern in school-aged children.

Survey data from the Behavioral Risk Factor Surveillance System (BRFSS) reveals 50% of Florida's adults have permanent tooth loss due to decay and gum disease. Prevalence of tooth loss was highest for non-Hispanic Black adults and for persons with less than a high school education and low socio-economic status. Survey results further indicate disparities in the utilization of dental services with 66% of non-Hispanic White adults having a dental visit in the past year compared to 56% of Hispanic and non-Hispanic Black adults.

Data on oral and pharyngeal cancer for adults living in Florida show an age-adjusted incidence rate of 12.5 per 100,000 and age-adjusted death rate of 2.6 per 100,000. Cancer rates are highest among non-Hispanic White individuals and are higher for males than females. The preponderance of reported oral cancers are associated with smoking and tobacco use, excessive alcohol consumption and sun exposure. Florida offers extensive resources for cancer control through prevention and cessation programs provided by the Bureau of Tobacco Free Florida. Smoking rates continue to decline with less than 18% of adults reporting having used tobacco products in the last thirty days. Smoking rates for middle school and high school students reveal 2% and 7.5% respectively, report smoking cigarettes in the past 30 days.

Survey results of the 2013-2014 Dental Workforce Surveillance Report reveal there are currently 10,981 active dentists and 11,589 active dental hygienists in the state of Florida. Nearly 59% of dentists provide general services through solo dental offices while 34% belong to group practices that offer specialty dental services. The remaining 7% provide primarily public health and preventive dental services through the Department's local health offices in each of Florida's counties, Federally Qualified Health Centers (FQHCs), military clinics and academic facilities. Over 90% of dental hygienists work in general practice solo offices while only 5% work in public health settings and academic facilities. The Department's Public Health Dental Program is promoting cost-effective workforce models in school-based sealant programs throughout Florida health access settings. The program entitled "Sealing Sunny Smiles across Florida" implements a cost-effective workforce and service delivery model, providing dental sealants for children at highest risk for dental caries.

This document is the first comprehensive report on the burden of oral disease in Florida. The report highlights the oral health disparities that exist for specific populations and describes the resources and programming efforts essential for improving the oral health of Florida residents. The Public Health Dental Program and partnering organizations are continuing to make strides toward the betterment of Florida's oral health status while improving the overall health of the state.

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## State and National Objectives

### State

The Department works to protect, promote, and improve the health of all people in Florida through integrated state, county, and community efforts. The Department is also responsible for monitoring the state's health. The Public Health Dental Program (PHDP) within the Division of Community Health Promotion and the Bureau of Family Health Services, leads the Department's efforts to improve and maintain the oral health of all persons in Florida. The PHDP has four primary functions:

1. Provide a statewide direction for policy related to oral health issues
2. Promote and administer oral health education and preventive dental programs
3. Collect and analyze oral health data
4. Support the provision of direct dental care services through the Department's local health offices and other public and private organizations

The PHDP has met many state and national objectives to improve and maintain the oral health of all persons in Florida. Florida's State Health Improvement Plan (SHIP) includes enhancing access to preventive, restorative, and emergency oral health care.<sup>2</sup>

Collaborative strategies encompass revising and implementing Florida's State Oral Health Improvement Plan (SOHIP), promoting integration between the oral healthcare system and other health care providers, including information sharing, education for medical providers on preventive dental health services, more effective reimbursement, and incentives for improving access to oral health services and revision of Medicaid reimbursement rules; assessing current and future practitioner needs via re-licensure surveys of dentists and dental hygienists to ascertain geographic distribution of practitioners and types of practices; and promoting innovative oral health care delivery practice models.

A summary of SHIP objectives and their current status, as of December 2015 is provided below:

<b>Table 1. Florida State Health Improvement Plan (SHIP) 2012-2015, Oral Health Objectives</b>							
<b>Objective</b>	<b>Definition</b>	<b>Numerator</b>	<b>Denominator</b>	<b>Data Source</b>	<b>Baseline</b>	<b>Current Data</b>	<b>Status</b>
AC4.2.1	By Dec. 31, 2015, increase the percentage of adults who report having visited a dental clinic in the past year from 59.8% to 61.8%.	Adults who report having visited a dental clinic in the past year	All adults	BRFSS	59.8% (2012)	61.9% (2014)	Completed
AC4.2.2	By Dec. 31, 2015, reduce the percentage of adults who report having permanent teeth removed because of tooth decay or gum	Adults that have had any permanent teeth extracted	All adults	BRFSS	49.8% (2012)	50.4% (2014)	In progress

<sup>2</sup> "Florida State Health Improvement Plan 2012-2015," 2012

Table 1. Florida State Health Improvement Plan (SHIP) 2012-2015, Oral Health Objectives							
Objective	Definition	Numerator	Denominator	Data Source	Baseline	Current Data	Status
	disease from 49.8% to 47.0%,						
AC4.2.4	By Dec. 31, 2015, increase the percentage of Medicaid children receiving dental services from 23.4% in 2010 to 25.9%.	Total Medicaid eligibles receiving any dental services	Total Medicaid individuals eligible for EPSDT for 90 continuous days	CMS-416 REPORT (EPDST)	23.5% (2010)	29.4% (2014)	Completed
AC4.3.2	By Dec. 31, 2015, increase the percentage of Medicaid eligible six to nine year old children who have received a sealant on one molar tooth from 7.0% in 2010 to 9.5%.	Total Medicaid eligibles aged 6 - 9 years receiving a sealant on a permanent molar tooth	All Medicaid eligibles for EPDST for 90 continuous days aged 6 – 9 years	CMS-416 REPORT (EPDST)	7% (2010)	11.4% (2014)	Completed
AC4.4.1	By Dec. 31, 2015, increase the number of CHDs FQHCs, or other local entities participating in school health or other types of community-based sealant programs from 11 in 2010 to 35.	N/A	N/A	PHDP and the Oral Health Florida Coalition (Sealant Action Team)	11 (2010)	35 (2014)	Completed
AC4.4.4	By Dec. 31, 2015, increase the percentage of the Florida population served by community water systems with optimally fluoridated water from 78.7% in 2008 to 78.9%.	No. of individuals receiving fluoridated water from community water systems	No. of individuals receiving water from community water systems	PHDP	78.7% (2008)	81.3% (2014)	Completed

## National

The national push for oral health awareness was highlighted in *Oral Health in America: A Report of the Surgeon General*. This report alerted Americans to the importance of oral health in their daily lives.<sup>3</sup> Issued in May 2000, the report detailed how oral health is promoted, how oral diseases and conditions are prevented and managed, and what needs and opportunities exist to enhance oral health. The report's message highlighted that oral health is essential to general health and well-being and can be achieved. However, several barriers hinder the ability of some Americans to attain optimal oral health. The Surgeon General's report concluded with a

<sup>3</sup> "Oral Health in America," 2000

framework for action, calling for a national oral health plan to improve quality of life and eliminate oral health disparities.

Individual states develop an oral health plan based on a set of measurable and achievable objectives focusing on key indicators of oral disease burden, oral health promotion, and oral disease prevention. National oral health indicators developed as part of *Healthy People 2020*, a continuation of *Healthy People 2010*, provides a comprehensive, nationwide health promotion and disease prevention agenda. Most core public health functions, such as assessment and policy development, occur at the state level, thus state level oral health plans with unique indicators are necessary.

### Healthy People 2020

The overarching goal of the *Healthy People 2020* oral health objectives is to prevent and control oral and craniofacial diseases, conditions, and injuries, and improve access to preventive services and dental care.<sup>4</sup> The seventeen measurable national oral health objectives, as outlined by *Healthy People 2020*, address a number of areas for public health improvement, including the need to:

- Increase awareness of the importance of oral health to overall health and well-being.
- Increase acceptance and adoption of effective preventive interventions.
- Reduce disparities in access to effective preventive and dental treatment services.

The target, desired direction, and current status of the *Healthy People 2020* oral health objectives for the nation and Florida are summarized in Table 2.

<b>Table 2. Healthy People 2020 Oral Health Objectives, National and Florida Status</b>				
<b>Healthy People 2020 Objective</b>	<b>Target (%)</b>	<b>Desired Direction</b>	<b>National (%)</b>	<b>Florida (%)</b>
<b>Oral Health of Children and Adolescents</b>				
<i>OH-1: Dental caries experience</i>				
1.1: Children aged 3-5 years	30.0	↓	27.9 <sup>A</sup>	Not Available
1.2: Children aged 6-9 years	49.0	↓	57.7 <sup>A</sup>	43.1 <sup>M</sup>
1.3: Children aged 13-15 years	48.3	↓	53.4 <sup>A</sup>	Not Available
<i>OH-2: Untreated dental decay</i>				
2.1: Children aged 3-5 years	21.4	↓	11.7 <sup>A</sup>	20.8 <sup>N</sup>
2.2: Children aged 6-9 years	25.9	↓	21.5 <sup>A</sup>	23.4 <sup>M</sup>
2.3: Children aged 13-15 years	15.3	↓	11.4 <sup>A</sup>	Not Available
<b>Oral Health of Adults</b>				
<i>OH-3: Untreated dental decay</i>				
3.1: Adults aged 35-44 years	25.0	↓	24.9 <sup>A</sup>	Not Available
3.2: Adults aged 65-74 years	15.4	↓	14.8 <sup>A</sup>	Not Available
3.3: Adults aged 75 years and older	34.1	↓	37.9 <sup>B</sup>	Not Available
<i>OH-4: Permanent tooth loss</i>				
4.1: Adults aged 45-64 years with one or more permanent tooth extracted	68.8	↓	30.2 <sup>A</sup>	59.8 <sup>O</sup>
4.2: Adults aged 65-74 years who have lost all their natural teeth	21.6	↓	13.1 <sup>A</sup>	10.5 <sup>O</sup>

<sup>4</sup> "Healthy People 2020", 2015

<b>Table 2. Healthy People 2020 Oral Health Objectives, National and Florida Status</b>				
<b>Healthy People 2020 Objective</b>	<b>Target (%)</b>	<b>Desired Direction</b>	<b>National (%)</b>	<b>Florida (%)</b>
<i>OH-5: Periodontal (gum) disease among adults aged 45-74 years</i>	11.5	↓	47.1 <sup>C</sup>	Not Available
<i>OH-6: Oral and pharyngeal cancers detected at earliest stage</i>	35.8	↑	31.2 <sup>D</sup>	Not Available
<b>Access to Preventive Services</b>				
<i>OH-7: Children, adolescents, and adults who used the oral health care system in the past year</i>	49.0	↑	42.1 <sup>E</sup>	Not Available
<i>OH-8: Low-income children and adolescents who received any preventive dental service in the past years</i>	33.2	↑	34.6 <sup>E</sup>	Not Available
<i>OH-9: School-based health centers with an oral health component</i>				
9.1: School-based health centers with dental sealants	26.5	↑	24.1 <sup>F</sup>	Not Available
9.2: School-based health centers with dental care	11.1	↑	10.1 <sup>F</sup>	Not Available
9.3: School-based health centers with topical fluoride	32.1	↑	29.2 <sup>F</sup>	Not Available
<i>OH-10: Local health departments and Federally Qualified Health Centers (FQHCs) with oral health program</i>				
10.1: FQHCs that have an oral health care program	83.0	↑	76.5 <sup>G</sup>	Not Available
10.2: Local health departments that have an oral health care program	28.4	↑	25.8 <sup>H</sup>	73.1 <sup>P</sup>
<i>OH-11: Patients who receive oral health services at FQHCs annually</i>	33.3	↑	20.5 <sup>G</sup>	20.4 <sup>Q</sup>
<b>Oral Health Interventions</b>				
<i>OH-12: Dental sealants on molar teeth</i>				
12.1: Children aged 3-5 years	1.5	↑	4.3 <sup>A</sup>	Not Available
12.2: Children aged 6-9 years	28.1	↑	37.6 <sup>A</sup>	36.9 <sup>M</sup>
12.3: Children aged 13-15 years	21.9	↑	22.2 <sup>A</sup>	Not Available
<i>OH-13: U.S. Population served by community water system with optimally fluoridated water</i>	79.6	↑	72.4 <sup>I</sup>	77.0 <sup>R</sup>
<i>OH-14: Adults receiving preventive dental interventions in dental offices</i>				
14.1: Adults receiving tobacco use/smoking cessation counseling	Not Available	↑	Not Available	Not Available
14.2: Adults receiving oral or pharyngeal cancer screening	Not Available	↑	Not Available	Not Available
14.3: Adults tested or referred for glycemic control	Not Available	↑	Not Available	Not Available
<b>Monitoring, Surveillance Systems</b>				
<i>OH-15: State-level system for recording and referral of orofacial clefts</i>				
15.1: States that have a system for recording orofacial clefts	Not Available	↑	Not Available	Yes <sup>P</sup>
15.2: States that have a referral system for orofacial clefts	Not Available	↑	Not Available	Yes <sup>P</sup>
<i>OH-16: Number of states with oral and craniofacial health surveillance system</i>	51	↑	32 <sup>J</sup>	Yes <sup>P</sup>

<b>Table 2. Healthy People 2020 Oral Health Objectives, National and Florida Status</b>				
<b>Healthy People 2020 Objective</b>	<b>Target (%)</b>	<b>Desired Direction</b>	<b>National (%)</b>	<b>Florida (%)</b>
<b>Public Health Infrastructure</b>				
<i>OH-17: Health agencies with a dental public health program directed by dental professional with public health training</i>				
17.1: Local health agencies that serve 250,000 or more persons with a dental public health programs directed by dental professional with public health training	25.7	↑	23.4 <sup>K</sup>	63.6 <sup>P</sup>
17.2: Indian Health Services Areas and Tribal health programs that serve 30,000 or more persons with a dental public health programs directed by dental professional with public health training	12	↑	11 <sup>L</sup>	Not Available

Target, Desired Direction and National Estimate Accessed at: <http://www.healthypeople.gov/2020/topics-objectives/topic/oral-health>

<sup>A</sup> National Health and Nutrition Examination Survey (NHANES), CDC/NCHS, 2011-2012

<sup>B</sup> National Health and Nutrition Examination Survey (NHANES), CDC/NCHS, 1999-2004

<sup>C</sup> National Health and Nutrition Examination Survey (NHANES), CDC/NCHS, 2009-2012

<sup>D</sup> National Program of Cancer Registries (NPCR), CDC/NCCDPPH; Surveillance, Epidemiology, and End Results Program (SEER), NIH/NCI, 2009

<sup>E</sup> Medical Expenditure Panel Survey (MEPS), AHRQ, 2012

<sup>F</sup> School-Based Health Care Census (SBHCC), National Assembly on School-Based Health Care (NASBHC), 2007-2008

<sup>G</sup> Uniform Data System (UDS), HRSA/BPHC, 2012

<sup>H</sup> Annual Synopses of State and Territorial Dental Public Health Programs (ASTDD Synopses), Association of State and Territorial Dental Directors (ASTDD), 2008

<sup>I</sup> Water Fluoridation Reporting System (WFRS), CDC/NCCDPPH, 2008

<sup>J</sup> Annual Synopses of State and Territorial Dental Public Health Programs (ASTDD Synopses), Association of State and Territorial Dental Directors (ASTDD), 2009

<sup>K</sup> Annual Synopses of State and Territorial Dental Public Health Programs (ASTDD Synopses), Association of State and Territorial Dental Directors (ASTDD), 2008

<sup>L</sup> Indian Health Service, Division of Oral Health, 2010

<sup>M</sup> Florida Department of Health, Third Grade Oral Health Screening Project 2013-2014

<sup>N</sup> Florida Department of Health, Head Start Oral Health Screening Project 2014-2015

<sup>O</sup> Florida Department of Health, Behavioral Risk Factor Surveillance System, 2014

<sup>P</sup> Annual Synopses of State and Territorial Dental Public Health Programs (ASTDD Synopses) Association of State and Territorial Dental Directors (ASTDD), 2015

<sup>Q</sup> HRSA 2014 Florida Program Grantee Data

<sup>R</sup> Florida Department of Health, Public Health Dental Program

## The Burden of Oral Disease

Oral disease is prevalent in all Florida populations and affects Floridians across the lifespan, from infants to older adults. This section details the oral health status of children and adults in Florida, describes vulnerable populations who may be at increased risk of adverse oral health outcomes, and describes the impact that poor oral health can have on the society at large.

### The Prevalence of Disease and Unmet Needs

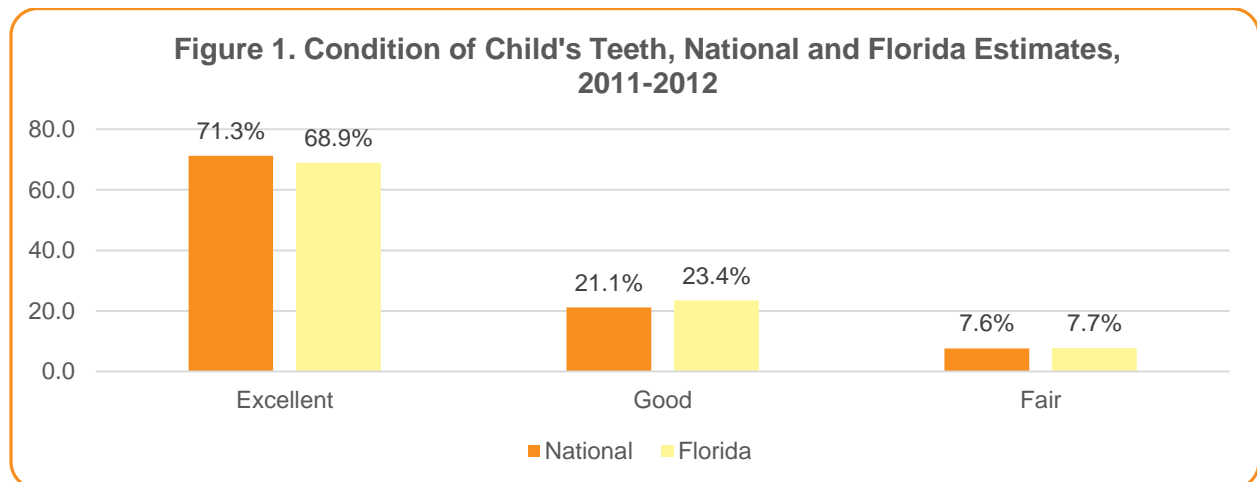
Understanding the prevalence of disease and unmet needs across Florida are crucial to planning programs and health improvement strategies specific to each population. A summary of each population's oral health status is provided below.

#### Children

##### Oral Health Status

Tooth decay is the most prevalent chronic condition affecting children in the United States. Nationally, 1 in 5 children, aged 5 to 11 years, and approximately 1 in 7 adolescents, aged 12 to 19 years, have at least one untreated decayed tooth.<sup>5</sup> Tooth decay, also known as dental caries, is a disease in which acids produced by bacteria on the teeth lead to loss of minerals from the enamel and dentin, the protective layers of teeth. If dental caries are remain untreated, they can result in the loss of tooth structure, inadequate tooth function, unsightly appearance, pain, infection, and tooth loss. Research shows that children with poor oral health are nearly three times more likely than their healthy counterparts to miss school as a result of dental pain and that an absence due to oral pain is associated with poorer school performance.<sup>6</sup>

According to the National Survey of Children's Health, a national survey where parents respond about their child's health, the majority of children in Florida (68.9%) have teeth that are in excellent or very good condition.<sup>7</sup> This prevalence is similar to the national average (Figure 1).



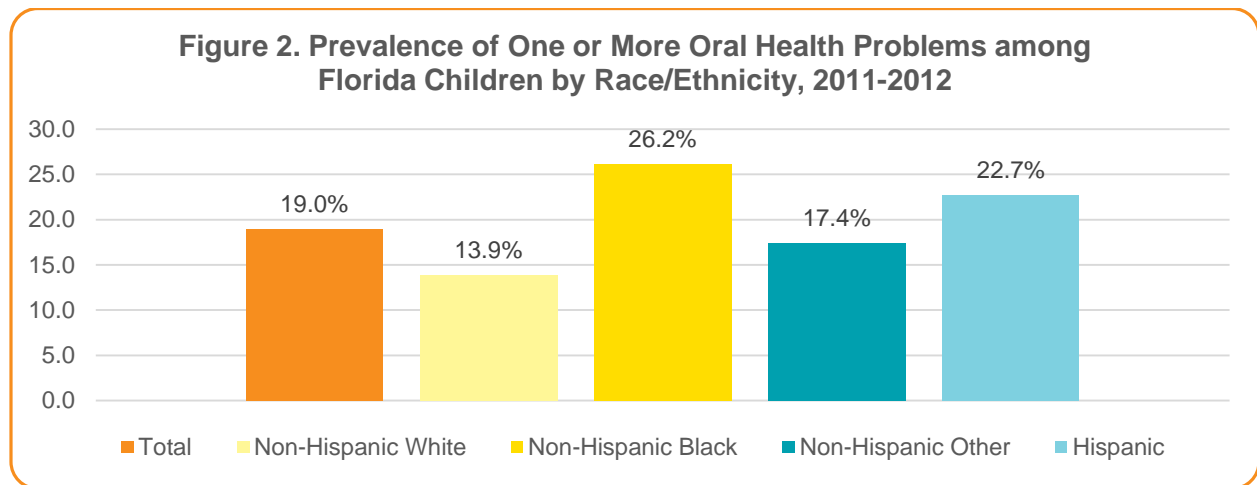
<sup>5</sup> Dye, Xianfen, & Beltran-Aguilar, 2012

<sup>6</sup> Jackson, Vann, Kotch, Patel, & Lee, 2011

<sup>7</sup> National Survey of Children's Health, 2011-2012

Condition of children’s teeth varies greatly by race/ethnicity among children in Florida. Non-Hispanic White children had a higher prevalence of parent-reporting their teeth as excellent (80.9%) compared to their non-Hispanic Black (61.8%) and Hispanic counterparts (52.8%).<sup>8</sup> Additionally, there is great variance in the condition of children’s teeth by income level, with only 44.4% of parents living below 100% of the Federal Poverty Line (FPL) rating their child’s teeth as excellent.<sup>8</sup>

Experiencing one or more oral health problems in the past 12 months also varies by race/ethnicity in Florida. Having one or more parent-reported oral health problem in the past 12 months was highest among non-Hispanic Black and Hispanic children (Figure 2).<sup>8</sup>



### *Prevalence of Disease and Unmet Needs*

The prevalence of dental decay is measured by assessing caries experience (presence of tooth decay or filled teeth), untreated decay (active unfilled cavities) and urgent need for dental care. To better understand the oral health status and dental care needs of Florida’s children, and to monitor future trends, the PHDP conducted active surveillance, in collaboration with the Florida Dental Hygiene Association, on dental decay for three ages of populations: Early Head Start (children 0 to less than 3 years), Head Start (children 3-5 years), and third grade students (children 8-9 years). The surveys were designed based on the tools and methodologies developed by the Association of State and Territorial Dental Directors (ASTDD), utilizing the basic screening survey, an inexpensive framework for assessing the oral health status of various populations.<sup>9</sup>

### *Early Head Start and Head Start Oral Health Screening Project*

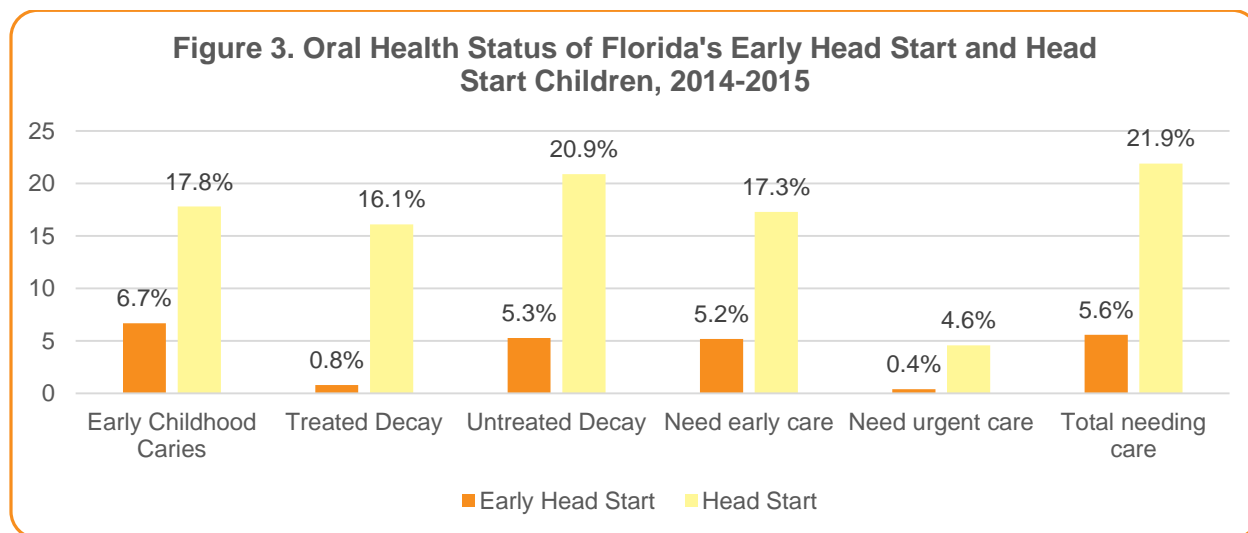
A representative sample of students, from 26 Head Start (HS) and 22 Early Head Start (EHS) centers across Florida, were selected for screening, using the stratified probability proportional to size sample (PPS) design. According to this 2014-2015 survey, approximately 6% of EHS

<sup>8</sup> National Survey of Children’s Health, 2011-2012

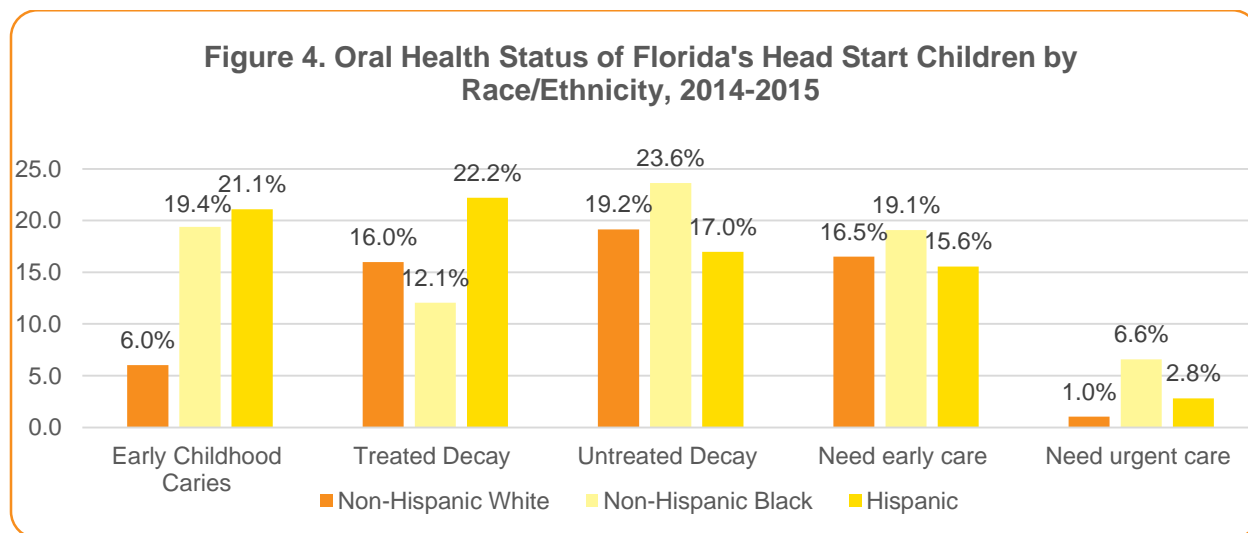
<sup>9</sup> “ASTDD Basic Screening Surveys”



children have early childhood caries and about 5.3% have untreated decay. In comparison, 17.8% of HS children have early childhood caries and 21% have untreated decay (Figure 3).<sup>10</sup>



Oral health status differs by race/ethnicity for both EHS and HS populations. In the EHS population, untreated decay rates are high among Hispanic children and need for treatment is equally high among both Hispanic and non-Hispanic Black children. (Data not shown). Among the HS population, early childhood caries is highest among Hispanic children (21.1%) whereas untreated decay rates (23.6%) and need for treatment (19.1%) is highest among non-Hispanic Black children (Figure 4).<sup>10</sup> Overall rates are low among non-Hispanic White children for both the populations.



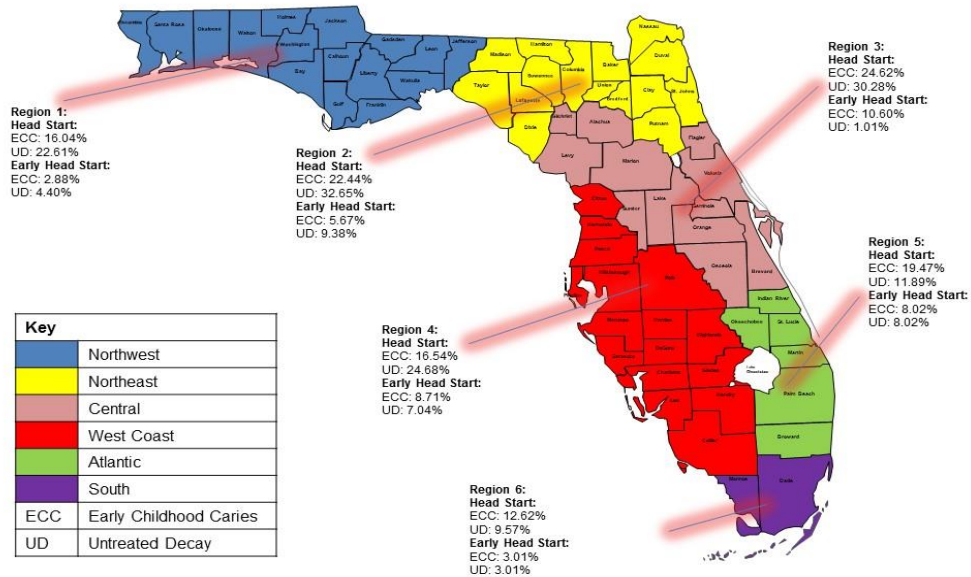
In Florida, high rates for ECC were recorded in the Central region for both HS and EHS populations (Map 1).<sup>11</sup> Untreated decay rates are higher in the Northeast region for both

<sup>10</sup> The Oral Health Status of Florida's Early Head Start and Head Start Children 2014-2015

<sup>11</sup> The Oral Health Status of Florida's Early Head Start and Head Start Children 2014-2015

populations. Treatment need rates are high in Northeast region for HS population, and high in the West Coast Region for the EHS population.<sup>11</sup>

**Map 1. Florida's Head Start Oral Health Surveillance Results by Region, 2014-2015**



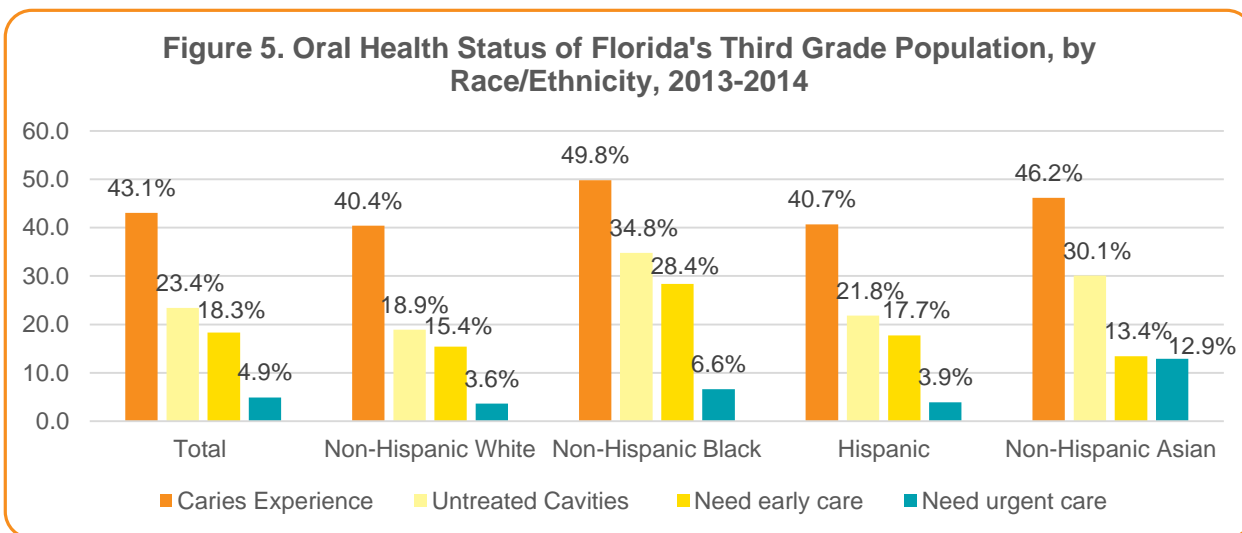
### Third Grade Oral Health Screening Project

A representative sample of third grade students from 41 schools across Florida was selected for screening, using the stratified probability proportional to size sample (PPS) design. A list of Florida public schools was sorted by region and then by school Free/Reduced Lunch Percentage (FRLP) within each region to achieve geographic and socio-economic status (SES) stratification, similar to that of the state. Participation in the Free/Reduced Lunch program was used to determine the student's family income status.

According to this 2013-14 survey, 43.1% of third graders had caries experience, and 23.4% of third graders had untreated decay (Figure 5).<sup>12</sup> Overall, disease rates are lowest among non-Hispanic White children and highest among non-Hispanic Black children.<sup>11</sup> Almost half (49.8%) of non-Hispanic Black children are experiencing decay and approximately 34.8% have at least one untreated decay (Figure 5).<sup>12</sup> The total population in Figure 5 includes population of other

<sup>12</sup> *The Oral Health Status of Florida's Third Grade Children 2013-2014*

racess, not represented individually due to small numbers. Other populations include: American Indians, Hawaiian/Pacific Islanders, Multiracial and unknown race.

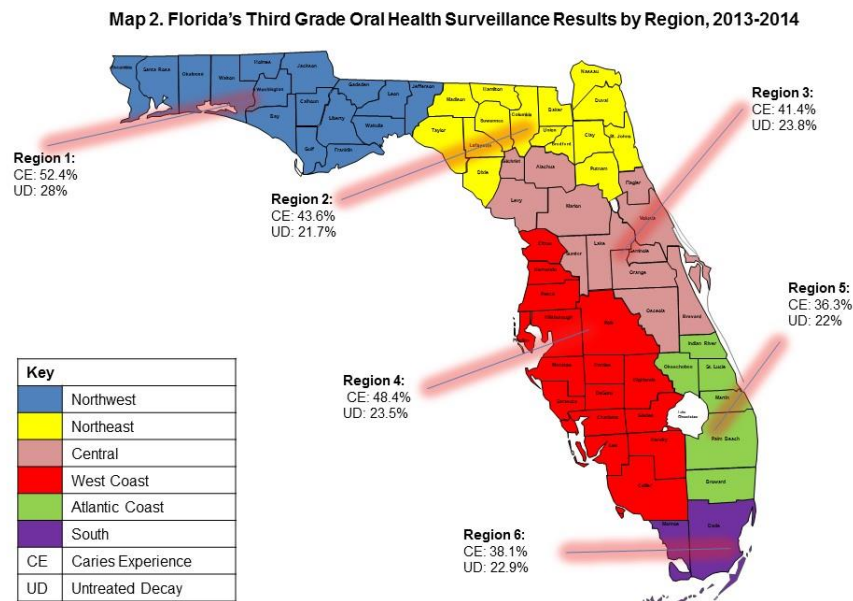


In Florida, children from all socioeconomic backgrounds have dental caries experience. However, the rates of caries experience, untreated decay, and treatment urgency are highest among children who attend schools with high FRLP rates (Table 3).<sup>13</sup>

<b>Table 3. Oral Health Status of Florida's Third Grade Children Stratified by Free/ Reduced Lunch Program (FRLP) Status of School, 2013-2014<sup>13</sup></b>				
<b>Variable</b>	<b>&lt;25% FRLP</b>	<b>25-49-% FRLP</b>	<b>50-74% FRLP</b>	<b>&gt;75% FRLP</b>
Caries Experience	23.0% (19.2-26.9)	36.6% (31.5-41.6)	44.9% (39.5-50.4)	52.4% (43.6-61.2)
Untreated Cavities	9.0% (5.3-12.8)	15.3% (11.5-19.1)	23.4% (20.0-26.8)	33.5% (26.8-40.2)
Need early care	7.0% (2.9-11.1)	12.5% (8.4-16.7)	18.4% (15.4-21.4)	25.7% (18.2-33.1)
Need urgent care	1.2% (0.1-2.4)	2.2% (0.3-4.0)	4.8% (3.1-6.6)	8.1% (3.4-12.7)

<sup>13</sup> The Oral Health Status of Florida's Third Grade Children 2013-2014

Rates of both treated and untreated caries, treatment urgency, and sealants were highest in Northwest region for the Third Grade population (Map 2).<sup>14</sup>



The Third Grade Oral Health Screening Project will be completed again beginning in fall 2016. The parental consent form has been updated to capture information about the child's school attendance, performance, and visits to the emergency department due to oral health problems.

### Orofacial Clefts

Cleft lip and cleft palate are birth defects occurring when the lip or mouth of the infant does not form properly during early pregnancy.<sup>15</sup> These defects, known as orofacial clefts, may occur independently or in tandem. Infants born with orofacial clefts often have difficulty feeding, speaking and hearing issues, and problems with their teeth.<sup>16</sup> As they age, children with orofacial clefts may need special dental or orthodontic care or speech therapy.<sup>15</sup>

Orofacial clefts are one of the most prevalent birth defects. However, there is no national database for birth defects, and some states do not have a birth defects registry. National estimates reported as based on data compilation for 29 states, including Florida.<sup>17</sup>

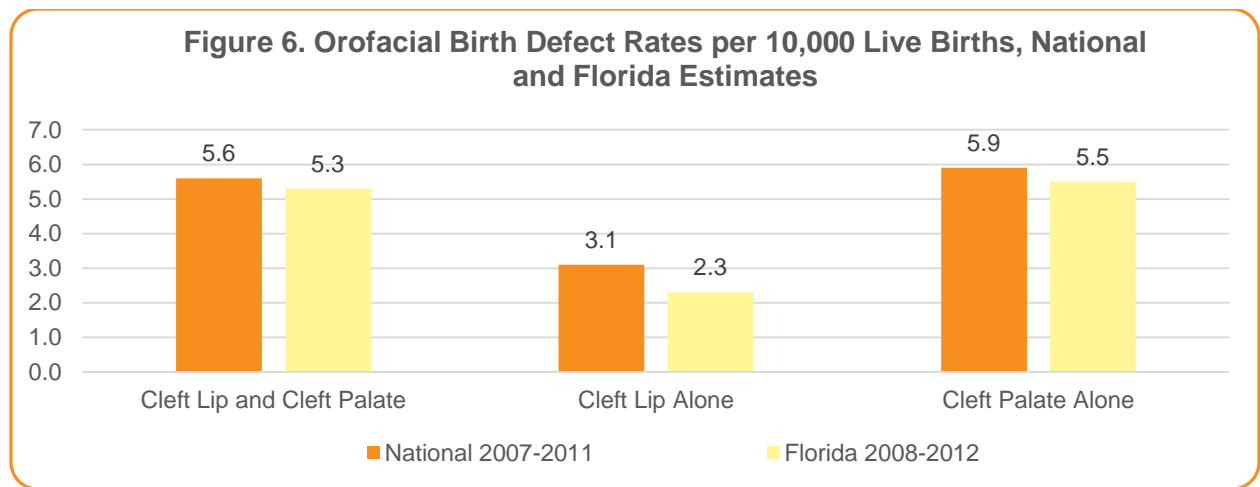
<sup>14</sup> *The Oral Health Status of Florida's Third Grade Children 2013-2014*

<sup>15</sup> "Facts about Cleft Lip and Cleft Palate," 2014

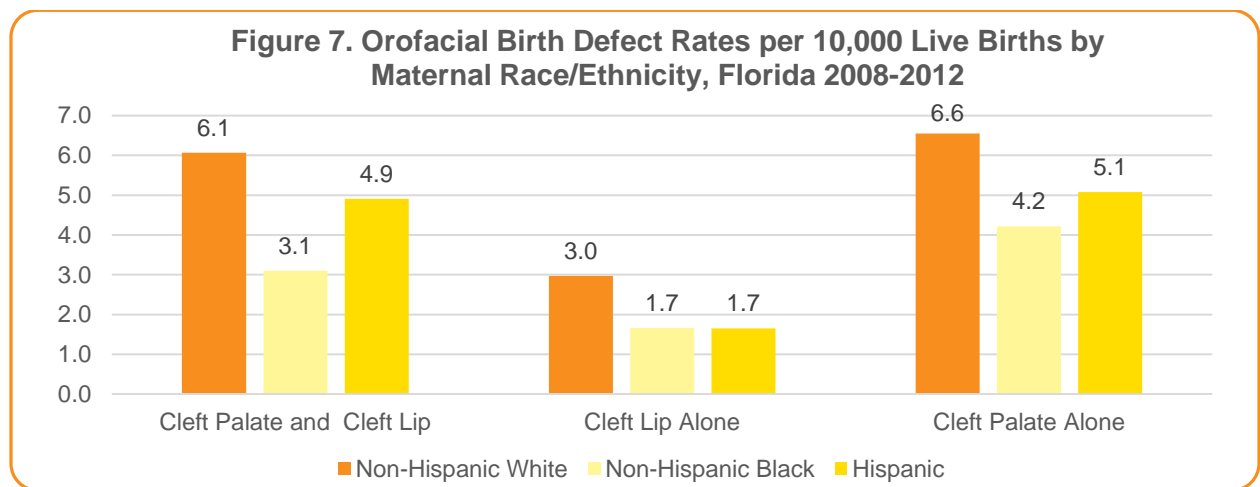
<sup>16</sup> Parker et al., 2010

<sup>17</sup> Mai, C., et al., 2014

Nationally each year, an estimated 2,650 infants are born with cleft palate and 4,440 infants are born with cleft lip with or without cleft palate.<sup>18</sup> In Florida during 2008-2012, the most prevalent orofacial cleft was cleft palate occurring in 5.5 per 10,000 live births (Figure 6).<sup>19</sup>



For the most recent five years that data are available in Florida, prevalence rates of orofacial clefts differed by maternal race/ethnicity, with non-Hispanic White mothers having the highest prevalence rate (Figure 7).<sup>19</sup> Maternal racial and ethnic groups represented here are based on mothers self-report on the birth certificate.



Statewide, population-based passive surveillance of birth defects in Florida is conducted annually by the Florida Birth Defects Registry.<sup>19</sup> Sources of data for surveillance include hospital discharge, birth certificates, and infant death certificates. Hospitals perform referrals for children identified with orofacial clefts and these referrals are tracked by Children’s Medical Services (CMS), Florida’s program for children and youth with special health care needs.

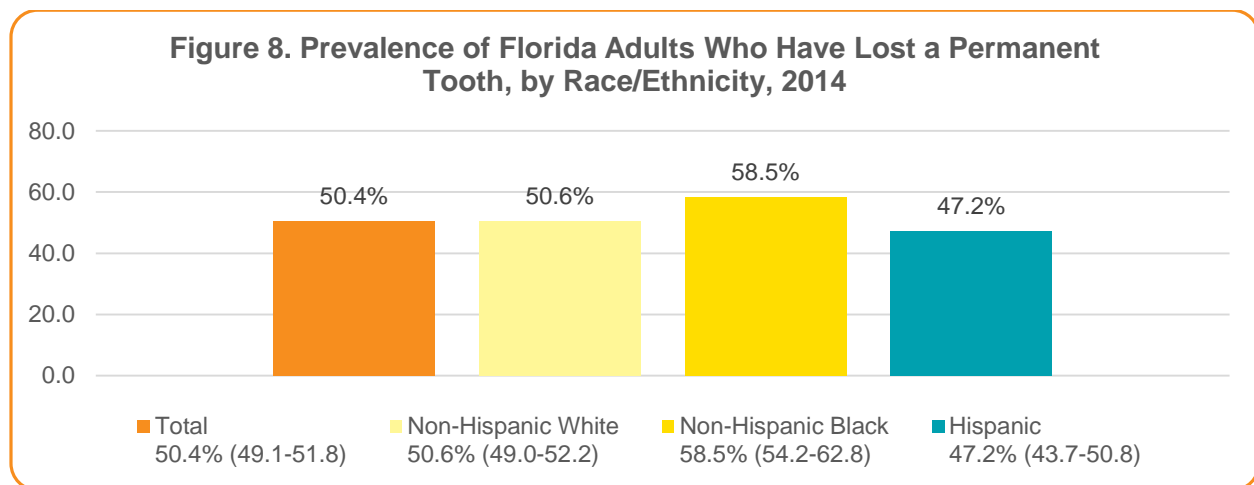
<sup>18</sup> Parker et al., 2010

<sup>19</sup> Florida Birth Defects Registry, 2015

## Adults

### Prevalence of Disease and Unmet Needs

Nationally, approximately 27.4% of adults aged 20-44 years have untreated dental caries.<sup>20</sup> Overall, 50.5% of adults in Florida have had a permanent tooth removed because of tooth decay or gum disease.<sup>21</sup> This prevalence was highest among non-Hispanic Black adults, (Figure 8) those with less than a high school education and those with an income less than \$25,000.<sup>21</sup> This prevalence did not vary by gender.



However, this prevalence did vary by race/ethnicity in Florida, and prevalence of tooth loss is much higher among non-Hispanic Black (41.4%) and Hispanic (38.0%) adults than non-Hispanic White adults (22.1%).<sup>21</sup>

### Oral Cancer

Oral cancer can occur in any part of the mouth or throat, including the lips, tongue, cheek, floor, hard and soft palate, and sinuses. Over 45,000 Americans will be diagnosed with oral or pharyngeal cancer this year, of which only 57% will be alive in five years.<sup>22</sup> This type of cancer has a historically high death rate due to late stage diagnosis.<sup>22</sup> Approximately 30.9% of oral and pharyngeal cancers are detected in their earliest stage nationally.<sup>23</sup> In 2012, the age-adjusted incidence of oral cancer was 12.5 per 100,000 and the age-adjusted death rate was 2.6 per 100,000 persons in Florida.<sup>24</sup> Incidence of oral cancer was highest among non-Hispanic White persons (13.1 per 100,000) when compared to non-Hispanic Black (7.6 per 100,000) and Hispanic persons (9.0 per 100,000). The incidence of oral cancer is much higher among males (19.4 per 100,000) than females (6.4 per 100,000).<sup>25</sup> The gender disparity persists for mortality data as well. Risk factors for oral cancer include: smoking, smokeless tobacco use, excessive consumption of alcohol, excessive sun exposure, and human papillomavirus.<sup>26</sup>

<sup>20</sup> "Health, United States," 2014

<sup>21</sup> CDC BRFSS Prevalence and Trends Data, 2015

<sup>22</sup> "Oral Cancer Facts," 2015

<sup>23</sup> "Healthy People 2020 Oral Health Objectives," 2015

<sup>24</sup> "CDC State Cancer Facts," 2015

<sup>25</sup> "CDC State Cancer Facts," 2015

<sup>26</sup> "Oral Cancer Facts," 2015

## Florida's Vulnerable Populations

While overall oral health status has improved in recent years, this success has not been evenly distributed across populations. There are segments of our population that may be at increased risk for poor oral health outcomes, largely due to access to care. These populations include pregnant women, those with special health care needs, older adults, and those living in poverty.

### Pregnant Women

Regular dental care is important for overall health and should be maintained during pregnancy. The physiologic changes that occur during pregnancy may result in noticeable changes including gingivitis, benign oral gingival lesions, tooth mobility, tooth erosion, dental caries and periodontitis.<sup>27</sup> It is important to educate pregnant women about these changes and to encourage good oral health habits. Additionally, research has shown an association between periodontal infection and preterm birth. Pregnancy can be an opportune time to provide oral health education since women are motivated to adopt healthy behaviors and nationally many women obtain dental care coverage during pregnancy through the Medicaid insurance program.

The Florida Medicaid program provides insurance to pregnant women with incomes up to 185% of the federal poverty level, and to adults with dependent children with incomes up to 34% of the federal poverty level.<sup>28</sup> Florida's Medicaid dental coverage is not specific to pregnancy and thus pregnant women have the same limited coverage as adults with dependent children. The Medicaid program covers medically-necessary emergency dental products to alleviate pain or infection. Other preventive, restorative, and surgical dental services vary by dental subcontractor plan across the state.

The Florida Pregnancy Risk Assessment Monitoring System (PRAMS) is a population-based survey of new mothers. Participants are asked to recall behaviors and experiences that occurred before, during, and after pregnancy. According to the 2012-2013 PRAMS survey, approximately 37% of new mothers had their teeth cleaned during their most recent pregnancy, 23% of new mothers needed to see a dentist for a problem, and approximately 14% went to the dentist/dental clinic for a dental problem.<sup>29</sup> Results for preventive oral health indicators were low and varied by race/ethnicity and insurance type. (Table 4).

Table 4. Oral Health Outcomes During Pregnancy, Florida PRAMS 2012-2013	
Characteristics	Prevalence (95% CI)
A dental or other health care workers talked with me about how to care for my teeth and gums.	
Total	41.9% (39.5, 44.3)
Race/Ethnicity	
Non-Hispanic White	44.6% (41.2, 48.2)
Non-Hispanic Black	45.8% (39.9, 51.9)
Hispanic	36.6% (32.5, 40.8)
Non-Hispanic Other	40.2% (28.5, 53.1)
Prenatal Insurance Type	
Private/Commercial	50.1% (46.4, 53.8)
Medicaid	40.9% (35.5, 46.5)

<sup>27</sup> "Oral Health Care During Pregnancy and Through the Lifespan," 2013

<sup>28</sup> "Family-Related Medicaid Programs Fact Sheet," 2015

<sup>29</sup> Holicky, 2016. Florida Department of Health, PRAMS 2012-2013

Table 4. Oral Health Outcomes During Pregnancy, Florida PRAMS 2012-2013	
Characteristics	Prevalence (95% CI)
<b>I had my teeth cleaned by a dentist or dental hygienist.</b>	
Total	36.5% (34.2, 38.9)
Race/Ethnicity	
Non-Hispanic White	39.9% (36.4, 43.4)
Non-Hispanic Black	35.9% (30.3, 41.8)
Hispanic	31.5% (27.6, 35.6)
Non-Hispanic Other	42.5% (30.5, 55.5)
Prenatal Insurance Type	
Private/Commercial	51.4% (47.7, 55.1)
Medicaid	28.8% (24.0, 34.2)
<b>I had insurance to cover dental care during my pregnancy.</b>	
Total	51.5% (49.0, 54.0)
Race/Ethnicity	
Non-Hispanic White	57.1% (53.5, 60.7)
Non-Hispanic Black	57.1% (51.0, 63.1)
Hispanic	40.3 % (36.2, 44.6)
Non-Hispanic Other	55.6 % (42.8, 67.8)
Prenatal Insurance Type	
Private/Commercial	73.2% (69.8, 76.4)
Medicaid	51.9% (46.3, 57.4)

A study exploring dental care misconceptions and barriers in pregnancy of non-Hispanic Black women in Florida identified several barriers to obtaining dental care during pregnancy including lack of insurance, misconceptions about the safety and appropriateness of dental care during pregnancy, and sporadic anticipatory guidance during prenatal care.<sup>30</sup> An analysis using the 2012-2013 Florida PRAMS data revealed that the strongest risk factors for not receiving preventive dental care during pregnancy were lack of receipt of preconception teeth cleaning and lack of prenatal education.<sup>31</sup> Preventive, diagnostic, and restorative dental treatment is safe throughout pregnancy and is effective in maintaining oral health.<sup>32</sup> Both prenatal and oral health care providers need to educate women that preventing and treating dental caries is essential to a healthy pregnancy and attending dental visits is safe and effective. Providers themselves should also be educated on pregnancy-appropriate dental care.

### Special Health Care Needs

There are over 11 million children and adolescents in the United States that have a special health care need.<sup>33</sup> By definition, children and adolescents with special health care needs (SHCN) are those “who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional conditions and who also require health and related services beyond that required by children generally.”<sup>34</sup> Children and adolescents with SHCN are diverse in their

<sup>30</sup> Detman, L. (2010).

<sup>31</sup> Holicky, A., Hernandez L., and Phillips-Bell, G. (2015).

<sup>32</sup> “Oral Health Care During Pregnancy: A National Consensus Statement,” 2012

<sup>33</sup> “The National Survey of Children with Special Health Care Needs Chart book 2009-2010,” 2013

<sup>34</sup> McPherson, M., et al., 1998



needs and abilities and can experience additional factors that contribute to oral health problems, including:

1. Medications that contain sugar, special diets, and the need to eat frequently<sup>35</sup>
2. Limited movement or motor function that challenge one's ability to practice behaviors necessary to maintain optimal oral health<sup>36</sup>
3. Environmental factors such as cost of care, insurance status, and difficulty finding providers with experience treating children and youth with SCHN

According to the 2009-2010 National Survey of Children with Special Health Care Needs, approximately 23.7% of Florida SHCN children and adolescents did not have a preventive dental visit in the past 12 months compared with 14.1% of SCHN children and adolescents nationally.<sup>37</sup> Additionally, SHCN children and adolescents living in poverty in Florida were more likely to have not received a preventive dental visit.

Both children and adults with special health care needs require dental services by general dentists who receive additional specialized training and have experience working with this population. On the 2013-2014 Dentist Workforce Survey, dentists were asked to report the number of patients they saw with special health care needs within the last 12 months: 30.5% of dentists report providing services to between 1-5 special health care needs patients, 22.6% provided services to between 6-10 special health care needs patients, and 18.6% provided services to between 11-20 special health care needs patients.<sup>38</sup>

### Older Adults

Oral diseases and conditions are common among older Americans who may not have had access to community water fluoridation and routine preventive dental care as children.<sup>39</sup> Older Americans experiencing poor oral health tend to be economically disadvantaged, lack insurance, and are members of racial and ethnic minorities.<sup>39</sup> Many older Americans do not have dental insurance as they lose these benefits when they retire and leave the work force.<sup>39</sup>

Periodontal (gum) disease, tooth decay, and tooth loss are all common oral health problems among older adults. In 2014, 73.1% of adults aged 65 years and older in Florida reported having any permanent teeth extracted, and approximately 13.2% had lost all of their natural teeth.<sup>40</sup> Complete tooth loss was highest among non-Hispanic Black individuals (18.4%) (Figure 9)

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<sup>35</sup> Moursi, A., et al., 2010

<sup>36</sup> Thikkurissy, S., et al., 2009

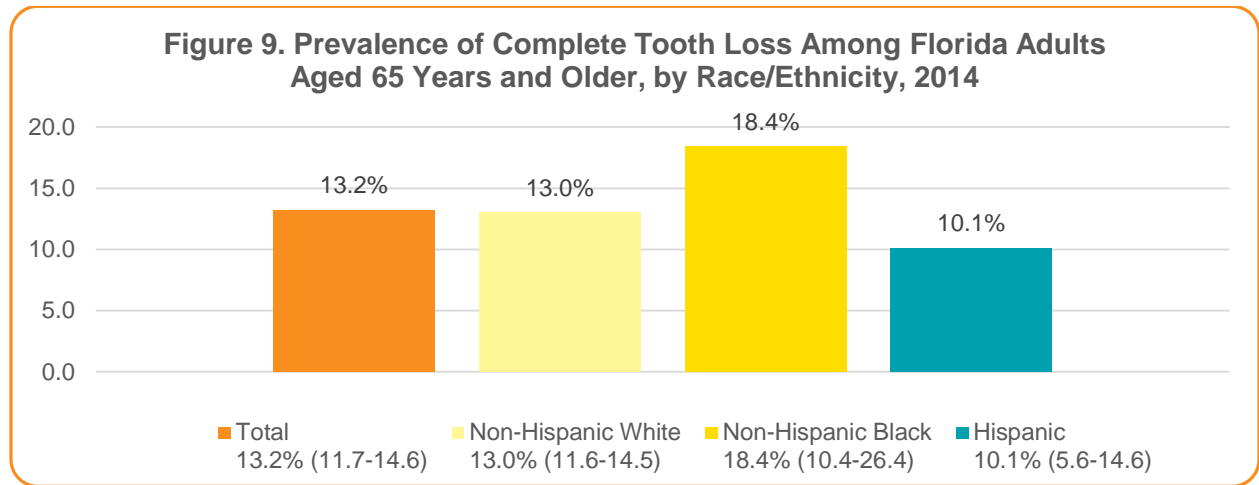
<sup>37</sup> National Survey of Children's Health, 2011-2012

<sup>38</sup> "Florida Department of Health 2013-2014 Dentist Workforce Report"

<sup>39</sup> "Oral Health for Older Americans," 2013

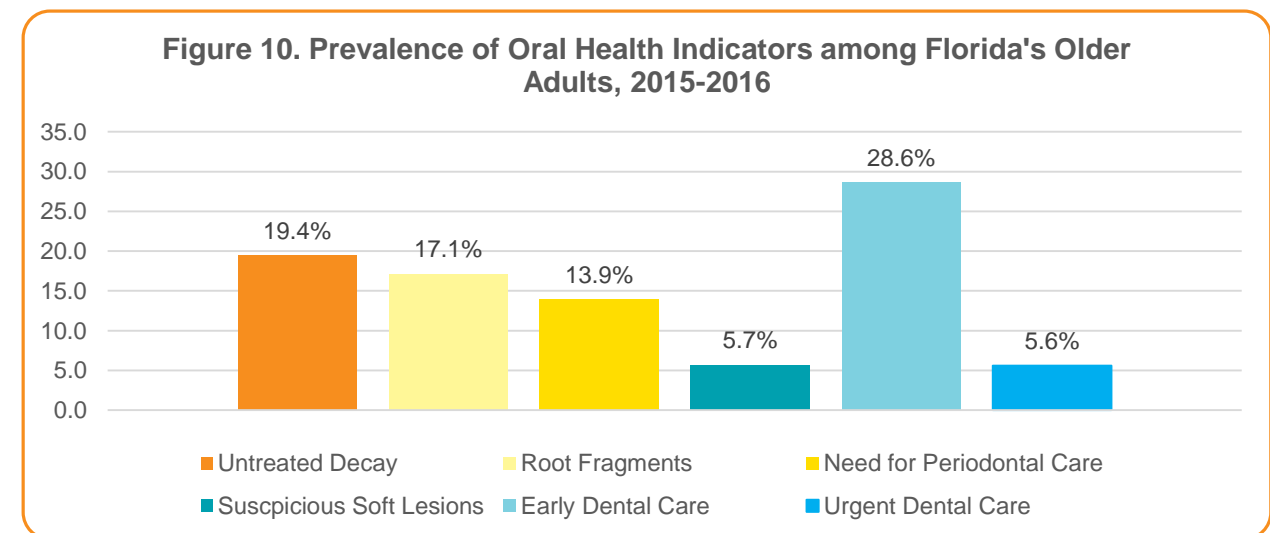
<sup>40</sup> "BRFSS," 2014

those with a less than high school education (30.0%), and an annual income less than \$25,000.<sup>40</sup>



To better understand the oral health status and dental needs of Florida’s older adult population, the PHDP partnered with the University of Florida and the Florida Dental Hygiene Association to conduct the *2015-2016 Older Adult Oral Health Screening Project*. The goal of this project is to assess the current oral health status of older adults, identifying gaps in access to care and unmet dental needs, and provide additional information for future prevention programs.

A representative sample of older adults, aged 60 years and older, attending 35 congregate meal sites across Florida was selected for screening, using the stratified probability proportional to size sample (PPS) design. Preliminary results from the 2015-2016 survey indicate that 19.4% of older adults have untreated decay, 13.9% have a need for periodontal care, and 28.6% have early dental care need (need to see a dentist in the next several weeks) (Figure 10).<sup>41</sup> Regional estimates were calculated using the same geographic designations as the Third Grade Oral Health Screening Project and will be available fall 2016 from the PHDP.

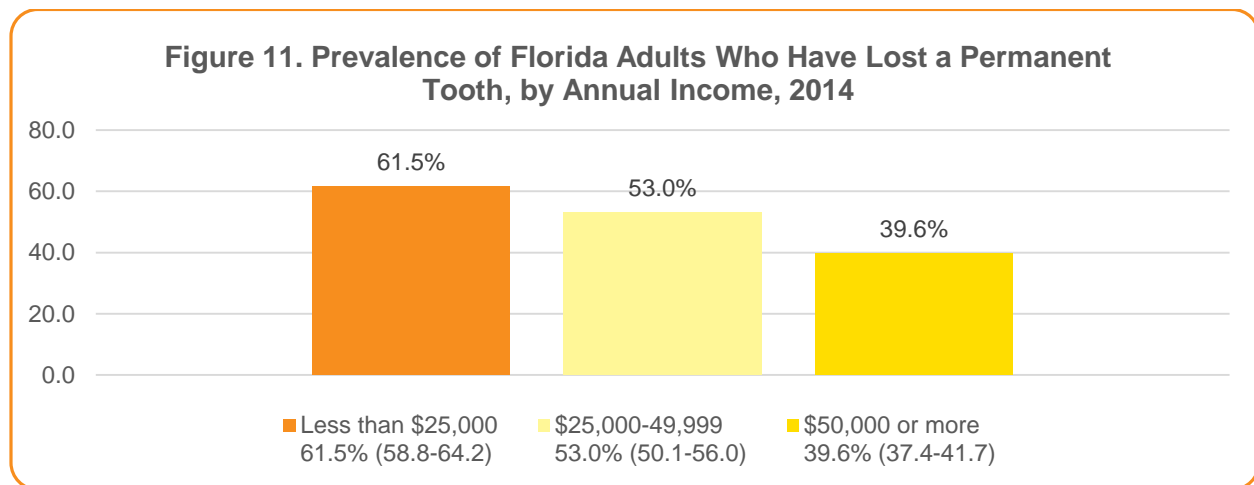


<sup>41</sup> The Florida Department of Health, Public Health Dental Program. *The Oral Health Status of Florida’s Older Adults, 2015-2016*.

## Poverty

Poverty status is an influential indicator of oral health in the United States. A report by the National Center of Health Statistics revealed that several disparities exist for Americans living below 100% of the federal poverty line, when compared to those living above 100% of the FPL, including children aged 3-9 years old had statistically significant higher prevalence of untreated dental caries, children 6-9 years had significantly lower prevalence of dental sealants, adults 25-64 years had significantly lower complete tooth retention, and adults 65-74 years had significantly higher prevalence of edentulism (complete tooth loss).<sup>42</sup>

This trend is evident in Florida as well. Those with lower income experienced the highest prevalence of having had a permanent tooth removed due to tooth decay or gum disease (Figure 11).<sup>43</sup>



The prevalence of parents in Florida reporting the condition of their children's teeth as excellent or good also increased as household income increased.<sup>44</sup> Additionally, the prevalence of having one or more oral health problems was highest among children with a household income below 100% of the FPL.<sup>44</sup>

Parents of dependent children qualify for Florida Medicaid and accompanying dental services if their income is at or below 34% of the federal poverty and dental benefits vary widely by subcontractor plan.<sup>45</sup> However, adults without children are not eligible for the Medicaid insurance program in Florida. Thus, there is still a large need for safety net dental providers to serve the uninsured and underinsured population in Florida. Both CHDs and FQHCs are currently serving as safety net dental providers across the state of Florida. Approximately, one in five patients (20.4%) served at HRSA grantee funded sites, are being seen for dental services.<sup>46</sup> The most common dental services provided include oral exams, cleaning, fluoride treatments, and restorative services.<sup>46</sup>

<sup>42</sup> Dye, B., 2012

<sup>43</sup> Florida Behavioral Risk Factor Surveillance System 2014

<sup>44</sup> National Survey of Children's Health, 2011-2012

<sup>45</sup> "Medicaid Income Eligibility Limits for Adults as a Percent of the Federal Poverty Level," 2015

<sup>46</sup> HRSA 2014 Health Center Data



Perhaps due to social embarrassment or functional problems, people with oral conditions may avoid conversation, smiling, or other nonverbal expressions that show their mouth and teeth.

Poor oral health can also have a profound impact on a child's school performance. More than 51 million school hours are lost each year to dental-related illness.<sup>48</sup> Additionally, children from poor families are 12 times more likely to experience restricted-activity days due to oral disease when compared to children from high-income families.<sup>49</sup> Untreated dental disease can lead to problems in speaking and the associated pain can make learning difficult.

### Economic Impact of Oral Disease

Total expenditures for dental services in the United States in 2013 were \$110.0 billion, approximately 4.0% of the total spent on health care that year.<sup>50</sup> A large proportion of dental care is paid out-of-pocket by patients. Nationally in 2013, 42% of dental spending was paid out-of-pocket, 47% was paid by private insurance, and 11% was paid by federal or state government sources.<sup>50</sup> During 2009, (the most recent year state-level health expenditure data is available), Florida spent \$5,286 million on dental services, approximately 4.0% of Florida's total health care expenditures.<sup>51</sup>

Emergency room spending can be a costly outcome of inadequate preventive dental care. Oftentimes, emergency rooms function as safety net providers for uninsured and underinsured patients seeking temporary relief for dental problems. An analysis of Florida emergency room visits from 2008 to 2010 revealed a dramatic increase in visits (n=10,000) and charges (\$21 million) over the three year period.<sup>52</sup> More than half of the increase in charges were to Medicaid and Medicaid Managed Care.<sup>52</sup> During this same period, visits charged to child-specific publicly funded payers (i.e. KidCare) doubled and charges tripled. This increase may reflect a lack of community providers accepting Medicaid insurance for preventive dental care for children. The trend in utilization of emergency room services for dental care is not slowing down. In 2014, there were 163,906 dental-related emergency rooms visits resulting in total charges over \$230 million for all age groups.<sup>52</sup>

Oral and craniofacial diseases and their treatment also place a burden on society in the form of lost days of work. Each year, employed adults lose over 164 million hours of work due to dental disease and dental visits.<sup>53</sup> In addition, oral and pharyngeal cancer attribute to 155.9 thousand person-years lost nationally.<sup>54</sup> This equates to an average of 17.5 years of life lost per person dying of oral and pharyngeal cancer.

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<sup>48</sup> "Oral Health in America: A Report of the Surgeon General," 2000

<sup>49</sup> "Oral Health in America: A Report of the Surgeon General," 2000

<sup>50</sup> "National Health Expenditures 2013 Highlights," n.d.

<sup>51</sup> "National Health Expenditure Data," 2011

<sup>52</sup> "Oral Health Emergency Room Spending in Florida," n.d.

<sup>53</sup> "Oral Health in America: A Report of the Surgeon General," 2000

<sup>54</sup> "Person-Years of Life Lost Due to Cancer"

## Risk and Protective Factors

The most common oral diseases and conditions can be prevented. Safe and effective measures are available to reduce the incidence of oral disease, reduce disparities, and increase quality of life. This section outlines commonly used prevention strategies as well as healthful behaviors that can be engaged in to improve oral health.

### Community Water Fluoridation

Community water fluoridation has been demonstrated to be the most cost-effective method for preventing dental caries. Community water fluoridation is the adjustment of fluoride in drinking water to a level optimal for the prevention of tooth decay.<sup>55</sup> Fluoride is a naturally occurring mineral that is released from rocks into air, water, and soil.<sup>55</sup> Usually, fluoride levels in water are not sufficient to prevent tooth decay and therefore the mineral is added in small amounts by municipalities. The positive effects of fluoridation benefits all citizens regardless of age or socioeconomic status. Many studies have been conducted on the benefits of water fluoridation. The constant contact of low concentrations of fluoride on teeth which occurs when people drink fluoridated water is shown through studies and reviews to significantly reduce dental decay.<sup>56</sup> The U.S. Public Health Service recommends a fluoride concentration level at 0.7 mg/L in drinking water for the prevention of dental decay.<sup>57</sup>

In addition to the prevention of tooth decay, water fluoridation saves money and the return on investment increases with the size of the community.<sup>55</sup> An economic analysis concluded that for communities larger than 20,000 people, every \$1 invested in fluoridation yielded approximately \$38 in savings from averted dental treatment costs.<sup>58</sup> The City of Gainesville became the first Florida community to add fluoride to its drinking water in 1949. Since then, many Florida communities have followed and in 2015, an estimated 77 percent of the population served by a community water system had access to fluoridated water.<sup>59</sup> However, this percentage varies greatly by county in Florida (Map 4).

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<sup>55</sup> "Fluoridation Basics," 2015

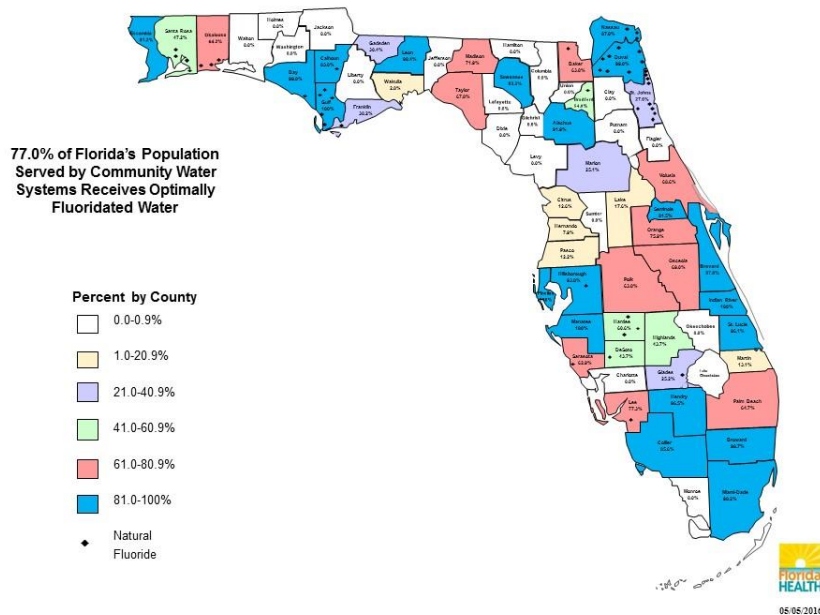
<sup>56</sup> "Preventing Dental Caries: Community Water Fluoridation," 2015

<sup>57</sup> "U.S. Public Health Service Recommendation for Fluoride Concentration in Drinking Water for the Prevention of Dental Caries," 2015

<sup>58</sup> "Cost Savings of Community Water Fluoridation," 2013

<sup>59</sup> "Fluoridation Information," 2016

Map 4. Percent of Florida's Population Receiving Optimally Fluoridated Water by County, 2015



While the state has made significant gains and most Floridians have access to fluoridated water, there are still many communities and some counties in Florida without the protective public health measure.<sup>60</sup>

Florida's State Board of Health officially endorsed water fluoridation for the first time in 1949. Since then, leadership at the Florida Department of Health have continued to supported water fluoridation and describe it as the most economical and effective means to control the major public health problem of dental decay. The role of the department is to assist communities throughout Florida to promote, implement, and maintain water fluoridation for their water systems. The department provides funding and technical assistance through the Public Health Dental program to help communities wanting water fluoridation. The department helps to inform and educate state and local agencies as well as stakeholders on issues surrounding water fluoridation. The department also monitors which communities have water fluoridation and the level of fluoride added to their drinking water.

### Dental Sealants

Dental sealants are thin plastic coatings that are applied to the grooves on the chewing surfaces on the back teeth to protect them from decay.<sup>61</sup> Permanent molars are the most likely to benefit from sealants.<sup>61</sup> Sealants can last for several years and should be applied soon after the teeth have erupted, usually around 6 years old for the first molars and around 12 years old for the second molars. The Centers for Disease Control and Prevention, the Association of State & Territorial Dental Directors, and the American Dental Association have recognized dental

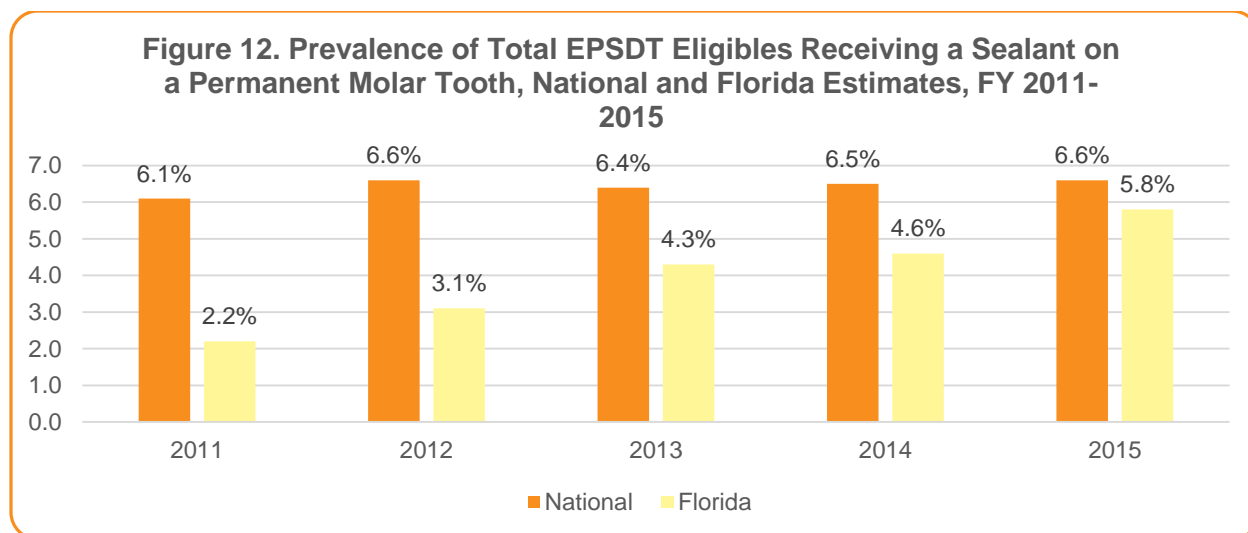
<sup>60</sup> "My Water's Fluoride," n.d.

<sup>61</sup> "Dental Sealants," 2013

sealants as a safe and effective preventive measure to ensure that permanent molars are protected against tooth decay longer than unsealed teeth.<sup>62</sup>

The CMS416 Report is an annual report released by the Centers for Medicare and Medicaid Services regarding the Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) service program. The EPSDT program provides Medicaid-ensured children under 21 with comprehensive and preventive health care services specifically preventive, dental, mental health, and developmental, and specialty services. Individuals identified as “Eligibles” are the total unduplicated number of individuals, under the age of 21 years, continuously enrolled for 90 days in Medicaid or a Children’s Health Insurance Program (CHIP) Medicaid expansion program and determined to be eligible for EPSDT services. Data are for federal fiscal year (FY) which begins October 1<sup>st</sup> and continues until September 30<sup>th</sup> of the following year.

Among Florida children on Medicaid, 5.81% of total eligibles received a sealant on a permanent molar tooth in 2015. While less than the national average for 2015, this percent has been steadily increasing in Florida over the past five years (Figure 12).<sup>63</sup>



Increasing the number of children who receive dental sealants on one or more of their primary molar teeth is a Healthy People 2020 objective. The target for 3 to 5 year olds is 1.5%, for 6 to 9 year olds is 28.1%, and for 13-15 year olds is 21.9%.<sup>64</sup> Sealant prevalence varies by age group largely due to changes in number of permanent teeth.

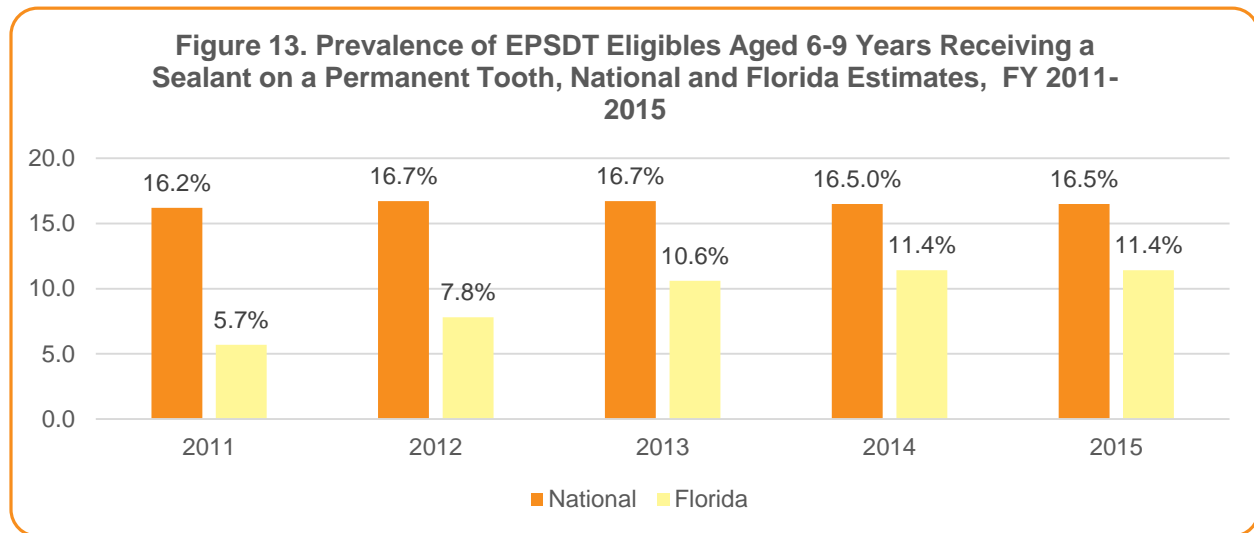
<sup>62</sup> “Sealants”

<sup>63</sup> Early and Periodic Screening, Diagnostic and Treatment CMS 416 Data-National and State, 2016

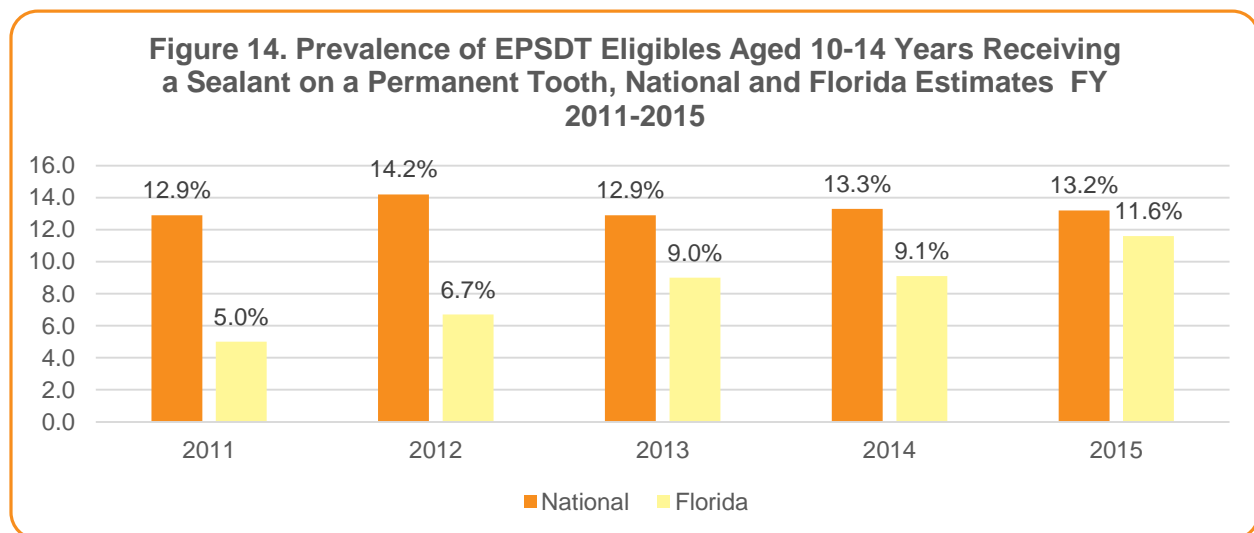
<sup>64</sup> “Healthy People 2020, Oral Health Objectives,” 2015



The percentage of Florida Medicaid eligibles aged 6-9 years old receiving a sealant on a permanent tooth was 11.4% in 2015 (Figure 13).<sup>65</sup>



The percentage of Florida Medicaid eligibles aged 10-14 years old receiving a sealant on a permanent tooth was 11.6% in 2015 (Figure 14).<sup>65</sup> The percentage has been increasing over the past five years in Florida among both age groups of interest.

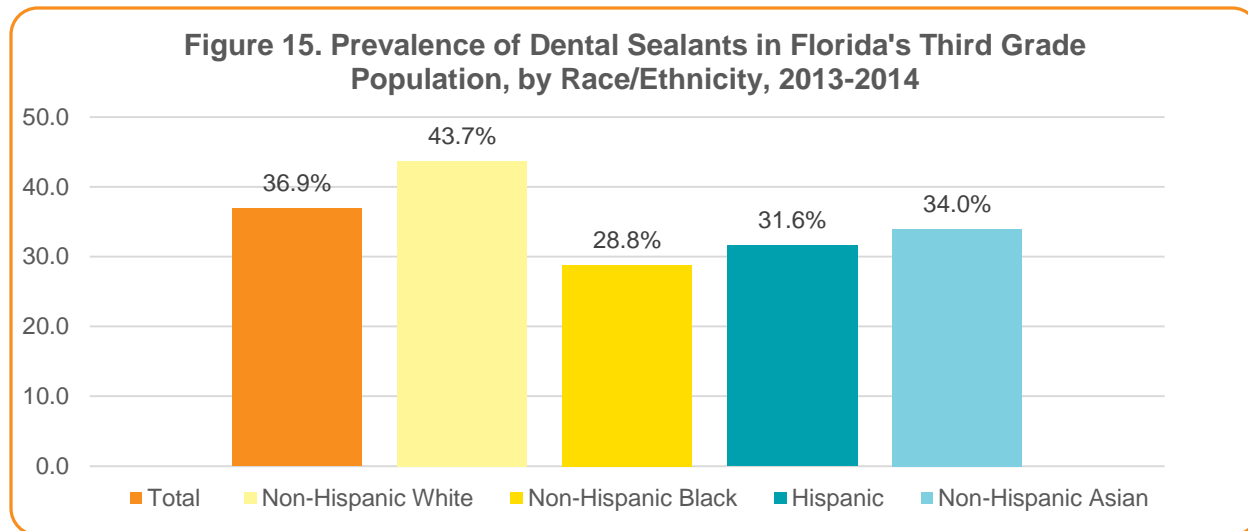


Statewide prevalence of dental sealants was also measured in the 2013-2014 Third Grade Oral Health Screening Project. Approximately 36.9% of Florida's third graders had at least one dental sealant (Figure 15).<sup>66</sup> This rate varied by race/ethnicity, with non-Hispanic White children having

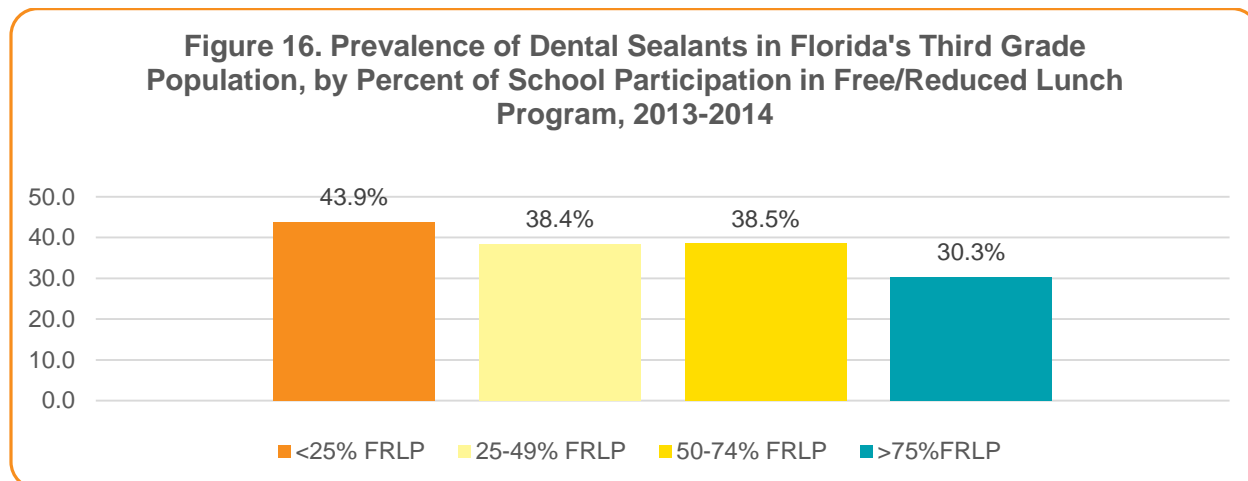
<sup>65</sup> Early and Periodic Screening, Diagnostic and Treatment CMS 416 Data-National and State, 2016

<sup>66</sup> *The Oral Health Status of Florida's Third Grade Children 2013-2014*

the highest prevalence of sealants, and non-Hispanic Black children having the lowest prevalence.<sup>66</sup>



Rates of at least one dental sealant among the Third Grade population also varied by income level, with only 30.3% of third grade students from schools with 75.0% or more of their student population participating in free/reduced lunch program having dental sealants (Figure 16).<sup>67</sup> The prevalence of dental sealants was highest in the northwest region of the state, and lowest in the south region.



School-based and school-linked dental sealant programs have been shown to reduce tooth decay by up to 60% and to reduce barriers in access to preventive dental services. The Community Preventive Services Task Force, an independent, nonfederal, unpaid panel of public health and prevention experts, recognizes that school sealant programs can increase the

<sup>67</sup> *The Oral Health Status of Florida's Third Grade Children 2013-2014*

detection of caries in children who do not regularly visit a dentist and improve access to care by referral of children who require follow-up dental treatment.<sup>68</sup>

The Florida Department of Health has implemented a new initiative “Sealing Sunny Smiles Across Florida.” This initiative is part of a comprehensive state-wide Oral Health Program to promote evidenced-based prevention strategies in order to achieve optimal oral health for all Floridians. This initiative began in 2014 with a school-based pilot program of five Florida counties to increase the number of children receiving preventive dental services across the state. This pilot evaluated the following:

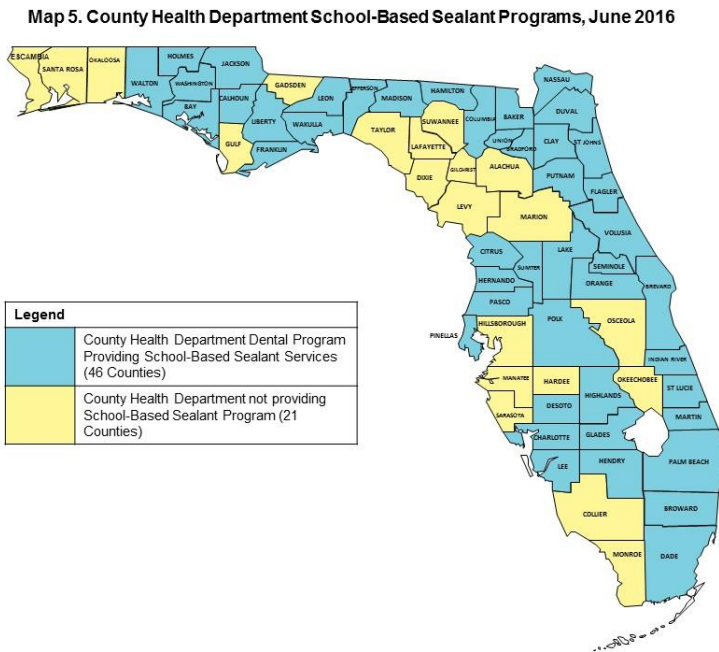
1. The feasibility of a hygienist workforce model for delivery of a school-based preventive dental services program.
2. Program efficiencies in an area high in manpower shortages and transportation barriers.
3. Program effectiveness in addressing unmet dental needs and connecting children with a dental home.
4. Sustainability of school-based dental services programs in Florida.

The regional pilot provided 3,197 oral health screenings, 6,867 sealants on 2,101 children’s permanent molars, 3,165 fluoride varnish applications, and 2,958 oral health instructions. Linking school-based dental services through the use of a regional hygienist approach to reach areas of high unmet dental need proved to be successful. The hygienist workforce model is sustainable due to reduced staffing costs and Medicaid reimbursements. Overall, children, parents, and stakeholders benefited from the services which included reduction of classroom interruptions, missed work time, and cost of services due to untreated dental needs. Applying these concepts and other successful workforce models to additional underserved areas and areas with high unmet needs are the next steps of the “Sealing Sunny Smiles Across Florida” initiative.

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<sup>68</sup> Gooch, B., 2009

Florida's school-based sealant programs vary by location type and count. As of July 1, 2016, there were 46 County Health Department Dental Programs providing school-based sealant programs (Map 5).



### Preventive Visits

Maintaining good oral health takes repeated efforts on the part of the individual, caregivers, and health care providers. Daily oral hygiene routines and healthy lifestyle behaviors play an important role in preventing oral diseases. Regular preventive dental care can reduce the development of disease and facilitate early diagnosis and treatment. Preventive dental care includes teeth cleaning, assessment of cavities and gum disease, application of sealants or fluoride treatment, and sometimes x-rays.

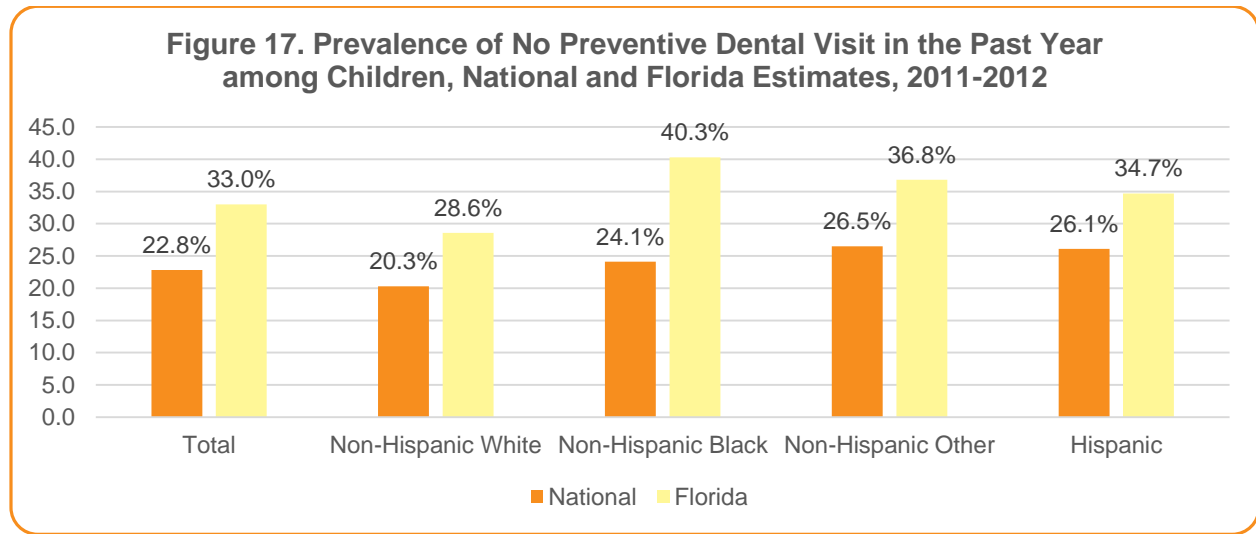
The American Academy of Pediatric Dentists recommends that children should see a dentist when the first tooth appears or no later than his/her first birthday.<sup>69</sup> In general, children and adults should visit the dentist every six months to prevent cavities and other dental problems.

Children aged 1-17 years in Florida had a significantly lower prevalence of one or more preventive dental visits in the past year compared to the national average.<sup>70</sup> Overall, one in five children nationally did not have a dental visit in the past year compared with one in three children in Florida (Figure 17).<sup>70</sup> Preventive dental visits differed significantly by race/ethnicity among Florida children, with non-Hispanic Black and non-Hispanic Other children having the

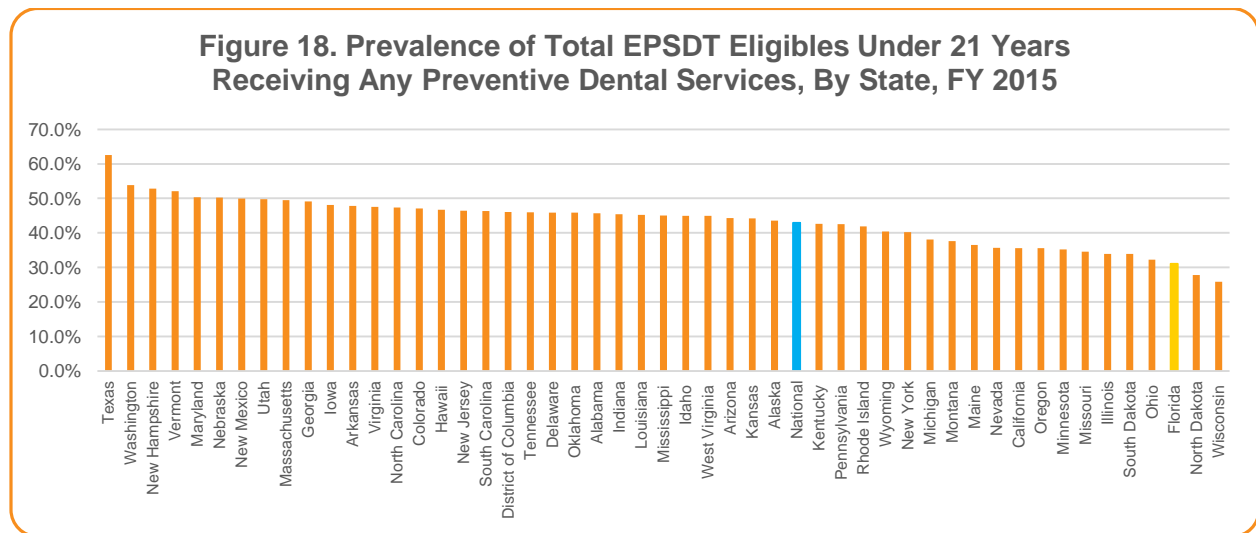
<sup>69</sup> "Frequently Asked Questions, American Academy of Pediatric Dentists," n.d.

<sup>70</sup> National Survey of Children's Health, 2011-2012

highest prevalence of no preventive dental visit. Additionally, Florida children living in poverty were significantly less likely to have a preventive dental visit in the past year.

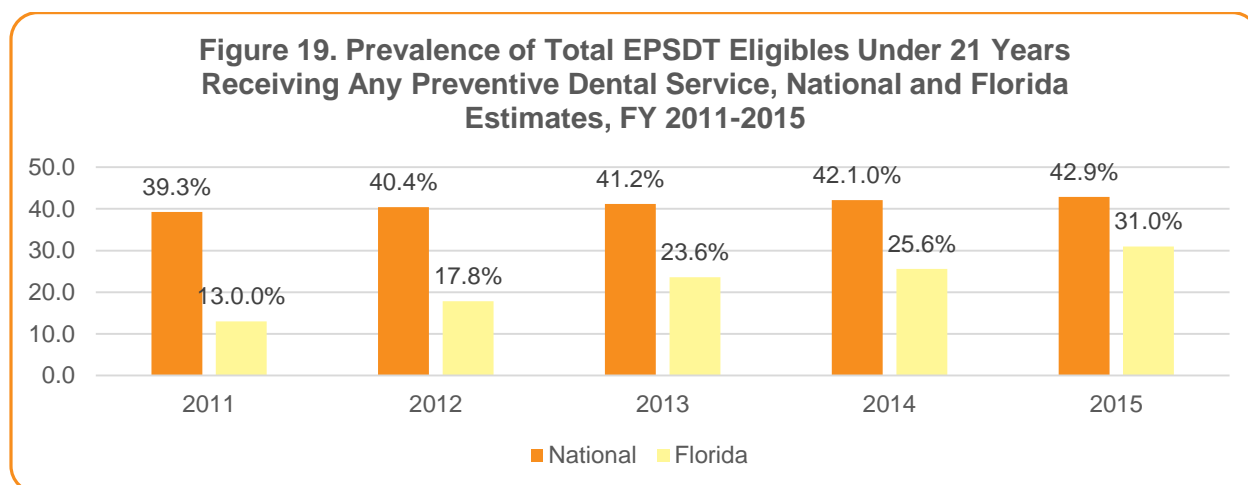


The Centers for Medicare and Medicaid Services also measures the prevalence of preventive dental services among their clients. In 2015, Florida is ranked 48 out of 50 states for the percentage of total Medicaid eligibles under age 21 years receiving any preventive dental service in 2015 (Figure 18). The National average is 43.0% while the prevalence in Florida is 31.0%.<sup>71</sup>



<sup>71</sup> Early and Periodic Screening, Diagnostic and Treatment CMS 416 Data-National and State, 2016

However, this prevalence has steadily increased in Florida from 13.0% in 2011 to 31.0% in 2015 (Figure 19) and this increase has moved Florida out of last place nationally.<sup>71</sup>



Regular preventive dental care is important across the lifespan and can reduce the development of disease and facilitate early diagnosis and treatment of dental problems. In 2010, 60.9% of Floridians reported having their teeth cleaned in the past year.<sup>72</sup> This is lower than the 2015 national estimate of 68.5%.<sup>73</sup> Teeth cleaning among Florida adults varied by race/ethnicity, income and education (Table 5).<sup>74</sup> The lowest rates were among non-Hispanic Black adults (49.6%), those with annual income less than \$25,000 (35.7%) and those less than high school education (28.3%).

<b>Table 5. Prevalence of Florida Adults Aged 18 Years and Older With a Teeth Cleaning, BRFSS 2010</b>	
<b>Characteristic</b>	<b>Prevalence (95% CI)</b>
<b>Total</b>	60.9% (59.6-62.1)
<b>Gender</b>	
Male	59.5% (57.5-61.5)
Female	62.2% (60.7-63.7)
<b>Race/Ethnicity</b>	
Non-Hispanic White	64.2% (63.0-65.4)
Non-Hispanic Black	49.6% (45.1-54.2)
Hispanic	57.0% (52.4-61.5)
<b>Age</b>	
18-44	57.3% (54.9-59.7)
45-64	62.0% (60.1-63.9)
65 and older	64.3% (62.6-65.9)
<b>Income</b>	
Less than \$25,000	35.7% (33.2-38.2)

<sup>72</sup> Florida Department of Health, Behavioral Risk Factor Surveillance System 2010

<sup>73</sup> "Percentage of Adults Who Report Having Had Their Teeth Clean Within the Past Year," 2015

<sup>74</sup> Florida Department of Health, Behavioral Risk Factor Surveillance System 2010

Table 5. Prevalence of Florida Adults Aged 18 Years and Older With a Teeth Cleaning, BRFSS 2010	
Characteristic	Prevalence (95% CI)
\$25,000-49,999	58.2% (55.6-60.8)
\$50,000 or more	76.7% (75.0-78.5)
Education	
Less than High School	28.3% (23.8-32.8)
High School or G.E.D.	49.4% (47.0-51.8)
More than High School	69.3% (67.8-70.7)

### Screening for Oral Cancer

In 2015, there will be approximately, 45,750 new cases of oral cancer diagnosed in the United States.<sup>75</sup> The 5-year survival rate for oral pharyngeal cancers is only about 50 percent and early detection is critical to increasing the survival rates.<sup>76</sup> The two most common approaches to oral cancer detection are a physical exam and cytology (examination of cells).<sup>76</sup> The physical exam usually includes a visual inspection of the head and neck, an examination of the mouth including the tongue, the entire oral and pharyngeal mucosal tissues, the lips, and palpation of the lymph nodes. However, there is no standard or routine screening test for oral cancer.<sup>77</sup>

Oral cancer is more common in adults aged 60 years and older, however research has identified increasing trends in oral cancer, particularly tongue cancer, in adults younger than 40 years.<sup>75</sup> Known risk factors for oral cancer include use of tobacco (cigarettes and smokeless), alcohol, and marijuana as well as genetic and biologic factors such as existence of human papilloma virus (HPV).<sup>77</sup> The addition of HPV as a risk factor for oral cancer has made it difficult to easily define high risk individuals, as HPV is the most prevalent sexually transmitted infection in the United States.

Recognizing the need for dental and medical providers to examine adults for oral and pharyngeal cancer, *Healthy People 2020* Objective 14-2 is to increase the proportion of adults who report having received an oral and pharyngeal cancer screening from a dentist or dental hygienist in the past year. Nationally, only 18% of adults aged 40 years and older reported receiving an examination for oral and pharyngeal cancer.<sup>78</sup> These data were not available for the state of Florida.

### Tobacco Use and Control

Tobacco use has a devastating effect on the health and well-being of the public, and protecting the people of Florida from the dangers of tobacco is a Department priority. Nearly half a million Americans die prematurely from tobacco use each year and another 16 million Americans suffer from at least one serious disease caused by smoking.<sup>79</sup> Tobacco use is linked to several chronic diseases such as cancer and heart disease. It also is a primary cause of many adverse oral

<sup>75</sup> "Oral Cancer Facts," 2015

<sup>76</sup> "Oral Cancer," 2013

<sup>77</sup> "Cancer Types," 2015

<sup>78</sup> "Healthy People 2020 Oral Health Objectives," 2015

<sup>79</sup> "Smoking and Overall Health," n.d.

conditions such as oral cancer, periodontal disease, and congenital defects in children whose mothers smoked during pregnancy.<sup>80</sup>

During 2014, approximately 17.7% of adults in Florida were current smokers. This is similar to the 2014 national average of 17.4% of adults (Table 6).<sup>81</sup> The highest prevalence of smoking was reported among multi-racial adults, adults aged 25-34 years, adults with an annual income of less than \$15,000 and adults with a less than high school education.

<b>Table 6. Prevalence of Adults Aged 18 Years and Older who are Current Smokers, National and Florida Estimates, BRFSS 2014</b>		
	<b>National Prevalence (95% CI)</b>	<b>Florida Prevalence (95% CI)</b>
<b>Total</b>	17.4% (17.1-17.6)	17.7% (16.5-18.8)
<b>Gender</b>		
Male	19.6% (19.3-20.0)	20.0% (18.1-21.9)
Female	15.2% (15.0-15.5)	15.5% (14.1-16.9)
<b>Race/Ethnicity</b>		
Non-Hispanic White	18.1% (17.9-18.4)	18.9% (17.5-20.3)
Non-Hispanic Black	19.8% (19.0-20.6)	15.1% (11.8-18.4)
Hispanic	13.8% (13.2-14.5)	15.3% (12.5-18.1)
Other	13.0% (11.9-14.0)	20.1% (12.5-27.7)
Multi-Race	25.0% (23.1-26.8)	20.8% (12.3-29.2)
<b>Age (years)</b>		
18-24	16.5% (15.7-17.2)	16.9% (12.8-20.9)
25-34	22.9% (22.2-23.6)	26.3% (22.3-30.4)
35-44	19.2% (18.6-19.9)	19.2% (15.8-22.5)
45-54	20.2% (19.6-20.7)	20.1% (17.3-22.8)
55-64	17.5% (17.0-18.0)	21.2% (18.6-23.7)
65 and older	8.8% (8.5-9.1)	7.4% (6.4-8.5)
<b>Income</b>		
Less than \$15,000	28.0% (27.1-28.3)	26.4% (22.4-30.5)
\$15,000-24,999	24.5% (23.8-25.2)	22.5% (19.3-25.6)
\$25,000-34,999	20.5% (19.7-21.3)	19.5% (15.8-23.2)
\$35,000-49,999	17.9% (17.2-18.5)	18.2% (14.8-21.5)
More than \$50,000	11.5% (11.2-11.8)	12.7% (11.1-14.4)
<b>Education</b>		
Less than High School	27.6% (26.7-28.5)	31.1% (26.4-35.7)
High School or G.E.D.	22.0% (21.6-22.5)	22.5% (20.2-24.8)
Some Post-High School	17.0% (16.6-17.5)	14.4% (12.7-16.2)
College Graduate	7.2% (6.9-7.4)	8.1% (6.9-9.3)

The Florida Youth Tobacco Survey (FYTS), first administered in 1998, tracks indicators of tobacco use and exposure to secondhand smoke among Florida public middle and high school students. This statewide survey is administered each spring and features a two-stage cluster probability design. Schools are randomly selected, and then classes within the selected school

<sup>80</sup> Peterson, P., 2003

<sup>81</sup> Florida Department of Health, Behavioral Risk Factor Surveillance System 2014



are randomly chosen to complete the survey. All students in the selected classes complete the survey.

During 2015, the most recent data year available, 2.0% of middle school students and 6.9% of high school students reported smoking a cigarette at least once during the past 30 days (Table 7).<sup>82</sup> This behavior has declined over the past four years. However, an area of particular concern among this age group is the increase in electronic cigarette (e-cigarette) use. Since 2012, this behavior has increased 255.6% among middle school students and 351.4% among high school students in Florida.<sup>83</sup> E-cigarettes are battery-operate products designed to deliver nicotine, flavor, and other chemicals to the user through the production of an aerosol, or vapor, which is inhaled.<sup>84</sup> As e-cigarettes are a new phenomenon, they have not been fully studied nor their risks properly assessed.

<b>Table 7. Prevalence of Florida Students (Grades 6-12) That Used Tobacco at Least Once in the Past 30 Days, by Tobacco Product, Florida Youth Tobacco Survey</b>								
<b>Tobacco Product</b>	<b>Middle School Students</b>				<b>High School Students</b>			
	2012	2013	2014	2015	2012	2013	2014	2015
<b>Cigarettes</b>	3.3%	2.0%	2.3%	2.0%	10.1%	8.6%	7.5%	6.9%
<b>Cigar</b>	3.9%	3.1%	2.9%	2.8%	11.4%	9.3%	9.1%	8.5%
<b>Smokeless Tobacco</b>	2.3%	2.4%	2.1%	1.8%	5.6%	5.0%	5.4%	4.9%
<b>Hookah</b>	NA	NA	3.5%	3.7%	NA	NA	11.6%	9.7%
<b>E-Cigarette</b>	1.8%	1.8%	4.0%	6.4%	3.5%	5.4%	10.8%	15.8%

Comprehensive tobacco control can have a large impact on oral health status, and the dental office provides an excellent venue for providing tobacco education and intervention services. The goal of comprehensive tobacco control programs is to reduce disease, disability, and death related to tobacco use by<sup>85</sup>:

- Preventing the initiation of tobacco use among young people.
- Promoting quitting among young people and adults.
- Eliminating nonsmokers' exposure to secondhand tobacco smoke.
- Identifying and eliminating the disparities related to tobacco use and its effects among different population groups.

Schools are also active partners for tobacco control and prevention activities. Recent efforts include prevention curricula in middle and high schools, promotion of smoke-free premises and school events. State level prevention activities include involving students in community-based work by Students Working Against Tobacco better known as S.W.A.T.

### Oral Health Education

Oral health education for the community is a process that informs, motivates, and helps people to adopt and maintain beneficial health practices and lifestyles; advocates environmental

<sup>82</sup> Florida Department of Health Florida Youth Tobacco Survey, 2015

<sup>83</sup> Florida Department of Health Florida Youth Tobacco Survey, 2011-2015

<sup>84</sup> "Electronic Cigarettes," 2015

<sup>85</sup> "Best Practices for Comprehensive Tobacco Control Programs," 2014

changes as needed to facilitate this goal; and conducts professional training and research to the same end.<sup>86</sup> Although health information or knowledge alone does not necessarily lead to desirable health behaviors, knowledge may help empower people and communities to take action to protect their health.

Increasing oral health literacy through education and oral health promotion takes place at many agencies, stakeholders, and programs in Florida, namely the Agency for Health Care Administration (AHCA) through the State Oral Health Action Plan (SOHAP), Oral Health Florida through various action teams, the Florida Dental Association, the Florida Dental Hygiene Association, the Department's local health offices, FQHCs, Dental/Hygiene Schools, and Volunteer Health Network School-Based Sealant, Prevention, and Outreach programs.

### Human Papillomavirus (HPV)

The human papillomavirus or HPV is a group of more than 150 related viruses that are known to cause genital warts and certain types of cancers.<sup>87</sup> HPV is the most common sexually transmitted infection and nearly all sexually active men and women have HPV at some point in their lives. HPV is the leading cause of oropharyngeal cancer that affects the back of the mouth and throat.<sup>87</sup> The HPV16 virus is most responsible for oropharyngeal cancer.<sup>88</sup> The fastest growing segment of the oral and oropharyngeal cancer population are otherwise healthy, non-smoking adults aged 25-50 years. Non-Hispanic White, non-smoking males aged 35 to 55 years are most at risk.<sup>89</sup> Today, HPV infection is a commonly accepted risk factor for oropharyngeal cancer.

HPV vaccines can protect against HPV infection and subsequent cancers. The CDC recommends that all children aged 11 or 12 years should get the three-dose HPV series. Young women may be vaccinated until 26 years and young men until 21 years.<sup>89</sup> The National Immunization Survey Teen estimates that 39.4% of female and 21.4% of male adolescents aged 13-17 years have received one or more doses of the HPV vaccine in Florida.<sup>90</sup>

The rate of HPV-associated oropharyngeal cancer differs by gender nationally and was four times higher among males (6.2 per 100,000) than females (1.4 per 100,000) between 2004 and 2008.<sup>91</sup> Florida is among the states with the highest rate range of HPV-associated oropharyngeal cancer; 7.1-8.5 per 100,000 men and 1.6-1.9 per 100,000 women.<sup>91</sup>

### Sugar-Sweetened Beverages Consumption

The consumption of sugar-sweetened beverages (SSB), such as soda and sports drinks, has been linked to several adverse health outcomes such as obesity, diabetes, cardiovascular disease and dental caries.<sup>92</sup> A steady diet of SSB can damage teeth because the cavity-causing bacteria in the mouth feed on sugar and produce acids that attack and weaken tooth enamel for

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<sup>86</sup> Kressin, N., et al., 2003

<sup>87</sup> "Human Papillomavirus (HPV)," 2015

<sup>88</sup> "HPV/Oral Cancer Facts," 2015

<sup>89</sup> "Human Papillomavirus (HPV)," 2015

<sup>90</sup> "National and State Vaccination Coverage Among Adolescents Aged 13-17 Years-United States 2012," 2013

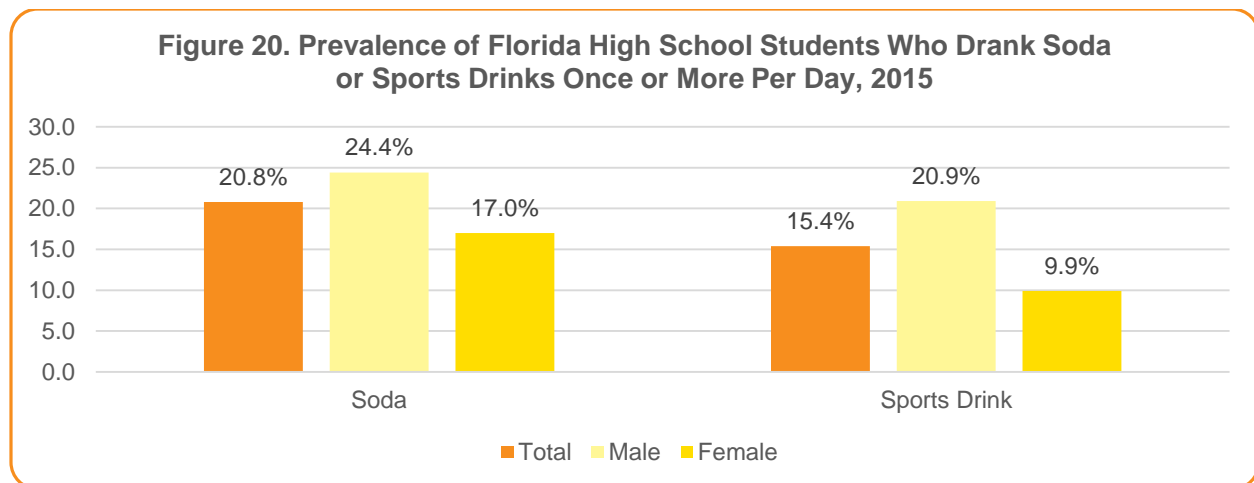
<sup>91</sup> "HPV-Associated Oropharyngeal Cancer Rates by State," 2014

<sup>92</sup> "The CDC Guide to Strategies for Reducing the Consumption of Sugar-Sweetened Beverages," 2010

up to 20 minutes after eating or drinking.<sup>93</sup> The ADA recommends limiting sugary beverages and food snacking between meals, and that eating a sugary food or drink should be consumed with a meal. Drinking fluoridated water and practicing good dental hygiene can reduce the risk of tooth decay.

It is estimated that 80% of youth and 63% of adults consume SSB on any given day.<sup>94</sup> In Florida, the prevalence of SSB consumption is captured through the Middle School Health Behavior Survey (MSHBS) which surveys public middle school students, and the Youth Risk Behavior Survey (YRBS) which surveys public high school students. In 2013, approximately 23.3% of Florida middle school students drank a can, bottle, or glass of soda one or more times per day.<sup>95</sup> This behavior did not vary by student gender or race/ethnicity.

In 2015, approximately 20.8% of high school students drank soda one or more times daily and 15.4% of high school students drank a sports drink one or more times daily. Male students had a significantly higher prevalence of drinking either type of SSB when compared to female students (Figure 20).<sup>96</sup>



<sup>93</sup> "Nutrition," 2014

<sup>94</sup> Bleich, S.N., et al., 2009

<sup>95</sup> "Dietary Behaviors and Weight Management," 2015

<sup>96</sup> "2015 Florida YRBS Database," 2016

## Provision of Dental Services

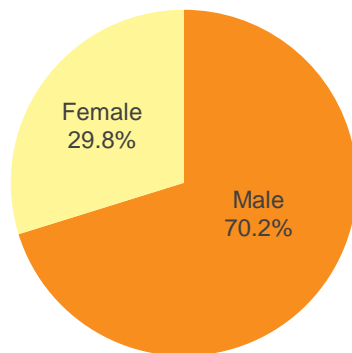
### Dental Workforce Capacity and Diversity

#### Dentists

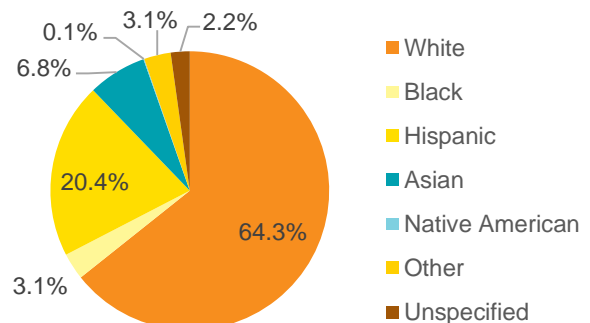
The Florida Department of Health has administered three workforce surveys of dentists and dentist hygienists since 2009. These surveys are voluntary, occur in conjunction with biennial renewal of dental licensures, and are designed to obtain a profile of the dental workforce practicing in Florida. Florida has a large and diverse population which makes access to oral health care a challenge. Thus a highly trained, diverse, and well geographically located dental workforce are key components in the effective delivery of oral health services to the population of Florida.<sup>97</sup>

During 2013-2014, there were 11,562 dentists who responded to the survey, 8,868 dentists with active licenses, and 8,817 dentists with an active license who possess a “clear” status, meaning that they are clear to practice his/her profession in the state of Florida. The majority of dentists with active licenses were male (70.2%) (Figure 21), non-Hispanic White (64.3%) (Figure 22) and between 50-59 years of age (26.5%) (Figure 23).

**Figure 21. Gender of Dentists with Active License Practicing in Florida, 2013-2014**



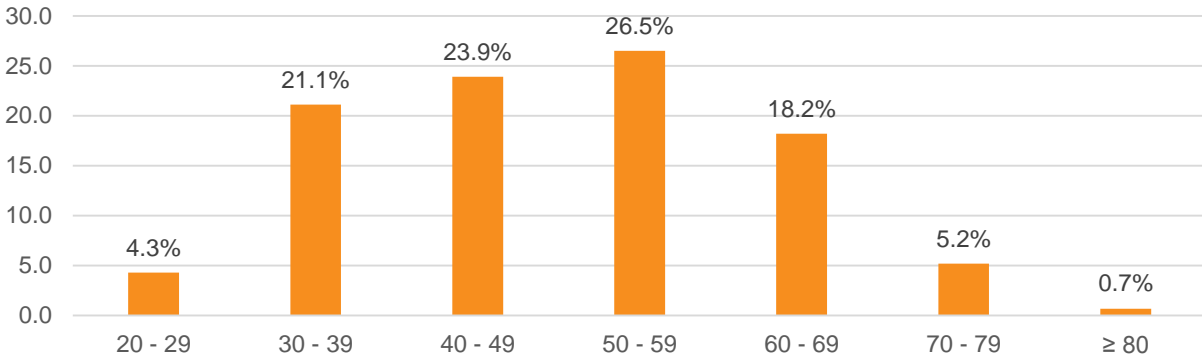
**Figure 22. Race/Ethnicity of Dentists with Active License Practicing in Florida, 2013-2014**



The next two most represented races in Florida’s dentist workforce are Hispanic (20.4%), and Asian (6.8%). It is important to highlight that only 25.4% of practicing dentists in Florida are under the age of 40. This is in contrast to 50.6% of practicing dentists who are aged 50 years and older.

<sup>97</sup> 2013-2014 Workforce Survey of Dentists Report, Florida Department of Health, September 2014

**Figure 23. Ages of Dentists with Active License Practicing in Florida, 2013-2014**

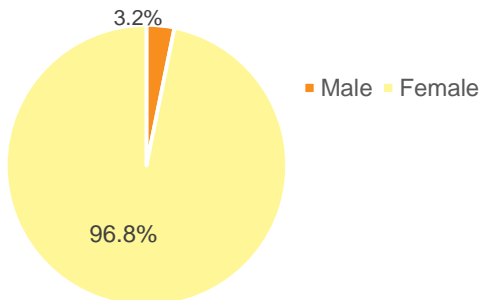


Over half of Florida’s actively licensed dentists are practicing in-state and in an office practice where they work solo (58.9%). Group practice setting with single specialty (19.6%) and group practice with multiple specialties (13.9%) were the second and third most common practice types reported. The remaining dentists primarily work in the following practice settings: CHDs, academic institutions, FQHCs, community health centers, Indian health service, or military facility clinics. Eighteen percent of the state’s clear licensed actively practicing dentists acknowledged they were Medicaid providers and of these 85% answered they were currently accepting new Medicaid patients.<sup>98</sup>

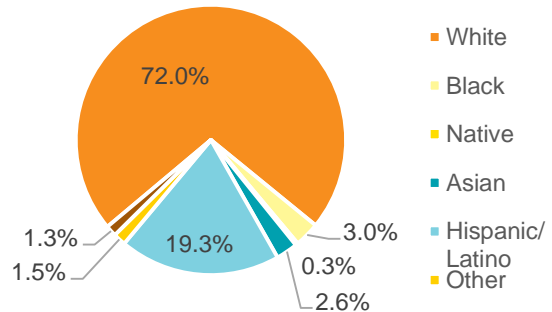
### Dental Hygienists

During 2013-14, there were 14,901 dental hygienists who applied for dental hygiene licenses in Florida, of these 11,697 applicants responded to the survey. A total of 8,677 dental hygienists indicated they practice in the State of Florida. The majority of dental hygienist who practice in this State were female (96.8%) (Figure 24), White (72.0%) (Figure 25) and between 40-49 years of age (31.5%) (Figure 26).

**Figure 24. Gender of Dental Hygienists with Active License Practicing in Florida, 2013-2014**

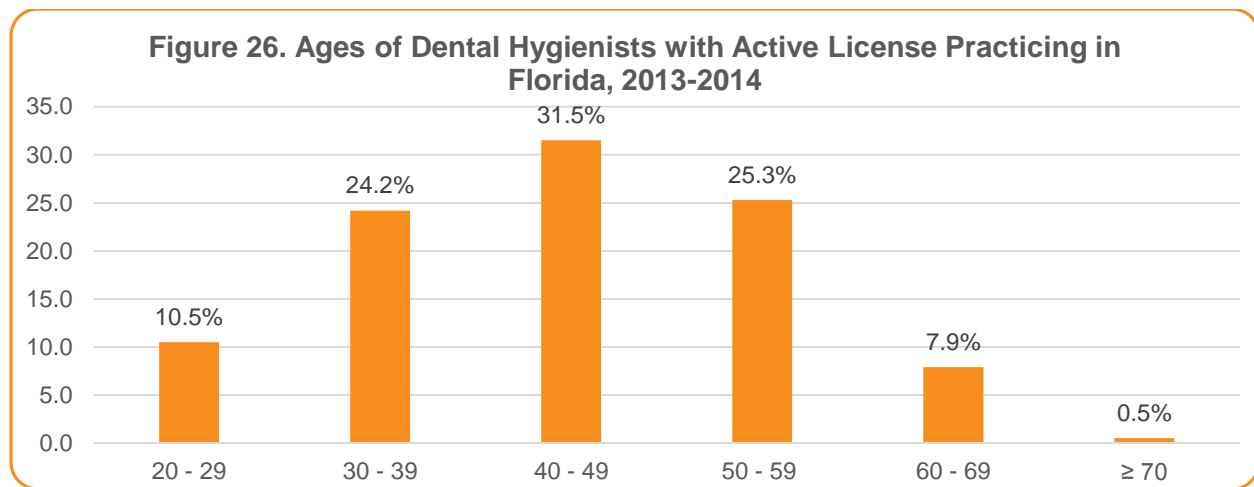


**Figure 25. Race/Ethnicity of Dental Hygienists with Active License Practicing in Florida, 2013-2014**



<sup>98</sup> 2013-2014 Workforce Survey of Dentists Report, Florida Department of Health, September 2014

The next two most represented race/ethnic groups in Florida’s dental hygienist workforce are Hispanic (19.3%), and Black (3.0%). Twenty-eight percent of dental hygienist can speak a language other than English, the majority speaking Spanish (75.9%).<sup>99</sup>



Most dental hygienists were trained at a program located in Florida (72.4%), 18.6% were trained out of state, and the remaining 9.0% were trained in a foreign country.<sup>95</sup> Less than a third of hygienists (32.5%) have practiced more than 20 years. A majority (59.7%) of dental hygienists practice under 35 hours per week. Of those working less than 35 hours, the two main reasons were personal preference (39.7%) and their position was part time (26.0%). Most hygienists (86.9%) are seeking additional hours of employment, with about half (49.6%) looking for 9 or more hours of work. The most common difficulty in finding additional work is “Cannot obtain full time employment” (16.5%). Most dental hygienists (82.6%) have no plans to reduce the hours of their current practice in Florida.<sup>100</sup>

The vast majority of dental hygienists (91.6%) worked in a general practice setting. Only 27% of dental hygienists work for more than one employer or practice setting. The three most prevalent practice types for dental hygienists are solo practice (64.8%), the next being group practice-single specialty (17.2%) and then, group practice-multi-specialty (12.1%). The remaining practice types are divided among the Department’s local health offices, community health centers, FQHCs, correctional facilities, state government settings, military facilities, VA clinics, academic institutions, and Indian Health Service.

## Utilization of Dental Care

### Children

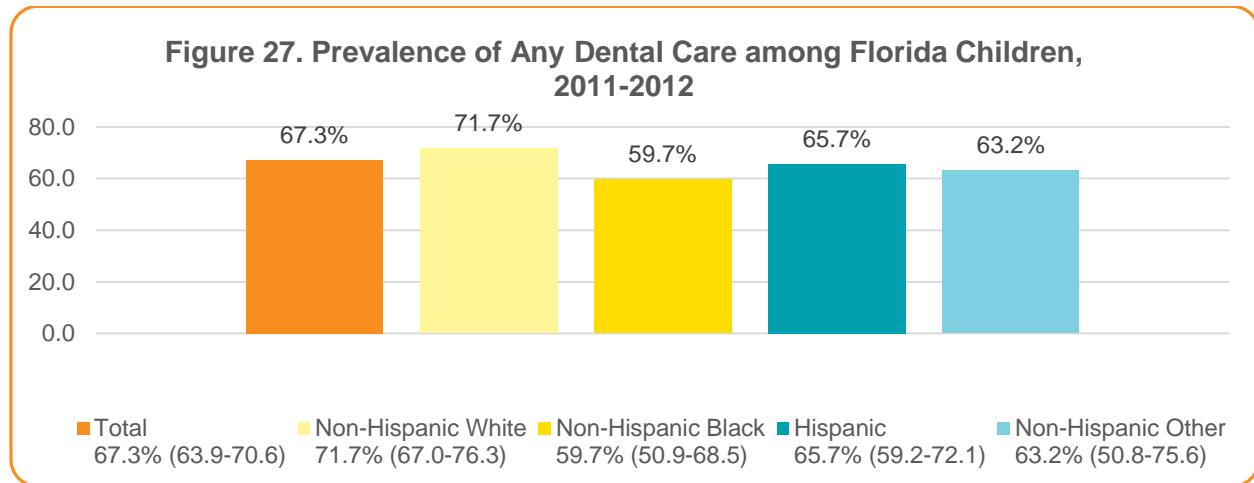
According to the National Survey of Children’s Health, 67.3% of children in Florida received any type of dental care in the past year, compared to 77.5% of children nationally.<sup>101</sup> This

<sup>99</sup> 2013-2014 Workforce Survey of Dental Hygienists Report, Florida Department of Health

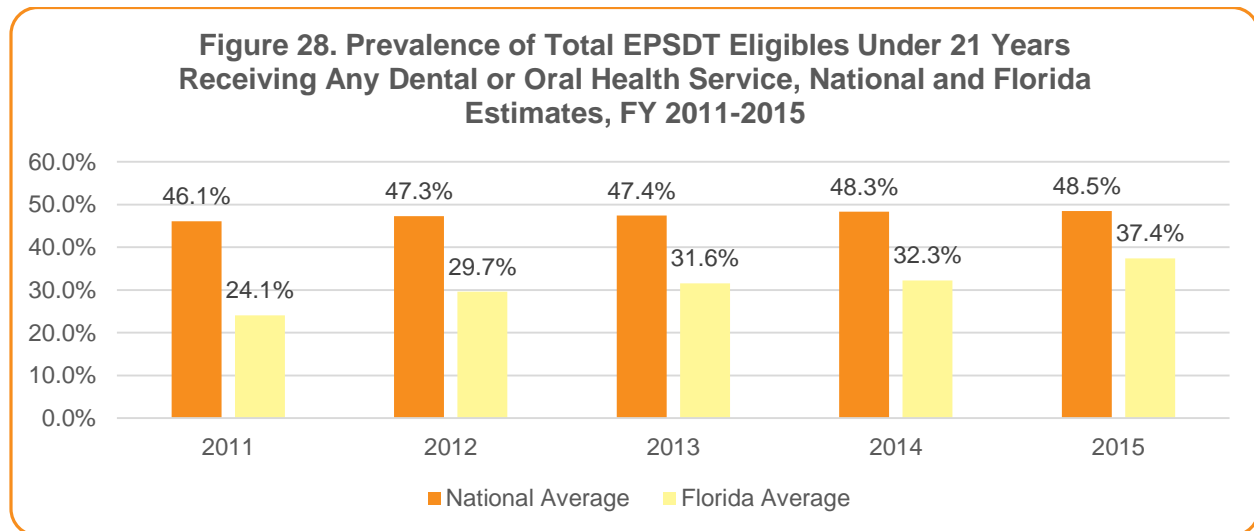
<sup>100</sup> 2013-2014 Workforce Survey of Dental Hygienists Report, Florida Department of Health

<sup>101</sup> National Survey of Children’s Health 2011-2012

prevalence varied by race/ethnicity in Florida, with lowest rates of receiving any dental care among non-Hispanic Black children (59.7%) (Figure 27).<sup>102</sup>



Rates of receiving any dental care were also lowest among low-income children and those who were uninsured. Among the child Medicaid population, Florida rates of receiving a dental or oral health service are also lower than the nation. In 2015, approximately 48.5 % of EPSDT eligibles nationally received any dental or oral health service, compared to only 37.4% in Florida (Figure 28). However these rates, particularly those in Florida, have steadily increased over the past four years.<sup>103</sup>



## Adults

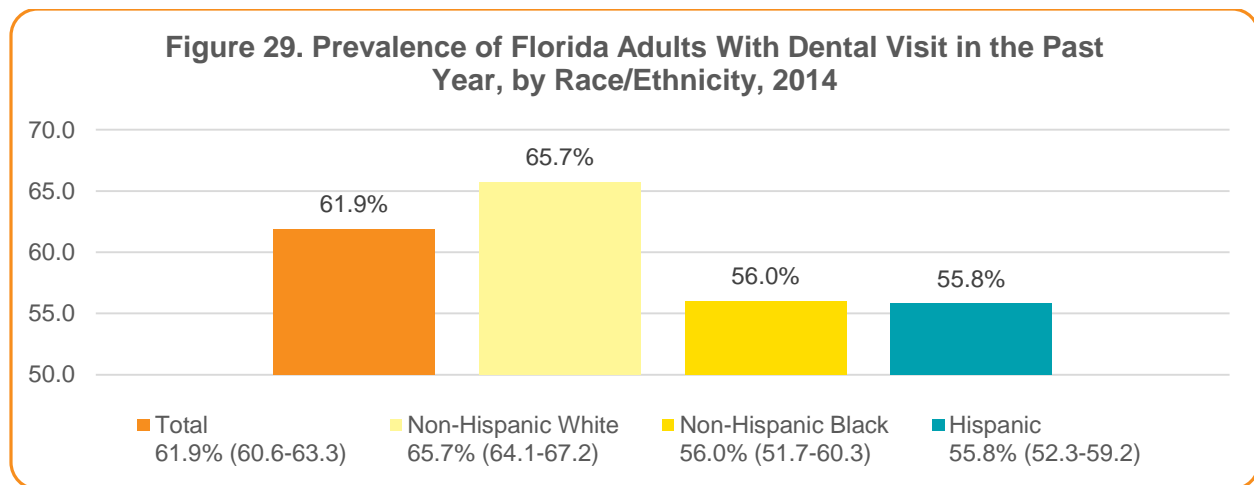
According to the 2014 BRFSS survey, 61.9% of adults saw a dentist in the past year. This is slightly lower than the 2014 national average of 65.3%.<sup>104</sup> Differences in prevalence of dental

<sup>102</sup> National Survey of Children's Health 2011-2012

<sup>103</sup> Early and Periodic Screening, Diagnostic and Treatment CMS 416 Data-National and State, 2016

<sup>104</sup> Florida Behavioral Risk Factor Surveillance System 2014

visit were seen by race/ethnicity. Non-Hispanic White adults reported the highest prevalence of a dental visit in the past year, with 65.7%, compared with 56.0% of non-Hispanic Black and 55.8% of Hispanic adults (Figure 29).<sup>104</sup>



No difference in prevalence of dental visit was seen by gender in Florida. Adults aged 65 years and older reported a significantly higher prevalence of being seen by a dentist, when compared to younger age groups. As annual income increased, so did the prevalence of seeing a dentist in the past year; 39.3% of Floridians with an annual income of less than \$15,000 saw a dentist compared to 78.5% of Floridians with an annual income of \$50,00 or more (Table 8).<sup>105</sup>

<b>Table 8. Prevalence of Adults Aged 18 Year and Older With a Visit to the Dentist in the Past Year, BRFSS</b>		
	<b>National-2012<sup>106</sup> Median %</b>	<b>Florida-2014<sup>105</sup> Prevalence (95% C.I.)</b>
<b>Total</b>	67.2%	61.9% (60.6-63.3)
<b>Gender</b>		
Male	63.5%	60.9% (58.7-63.0)
Female	70.4%	63.0% (61.2-64.7)
<b>Race/Ethnicity</b>		
Non-Hispanic White	69.6%	65.7% (64.1-67.2)
Non-Hispanic Black	56.2%	56.0% (51.7-60.3)
Hispanic	58.1%	55.8% (52.3-59.2)
Other	63.3%	63.7% (56.3-71.1)
Multi-Race	58.0%	59.5% (48.8-70.2)
<b>Age</b>		
18-24	68.3%	64.5% (59.6-69.5)
25-34	60.7%	54.5% (50.3-58.8)
35-44	66.2%	60.4% (56.4-64.5)
45-54	68.4%	60.4% (57.2-63.5)
55-64	70.2%	64.0% (61.2-66.7)
65 and older	64.9%	66.2% (64.3-68.2)
<b>Income</b>		
Less than \$15,000	45.9%	39.3% (35.1-43.6)

<sup>105</sup> Florida Behavioral Risk Factor Surveillance System 2014

<sup>106</sup> CDC BRFSS Prevalence and Trends Data, 2015

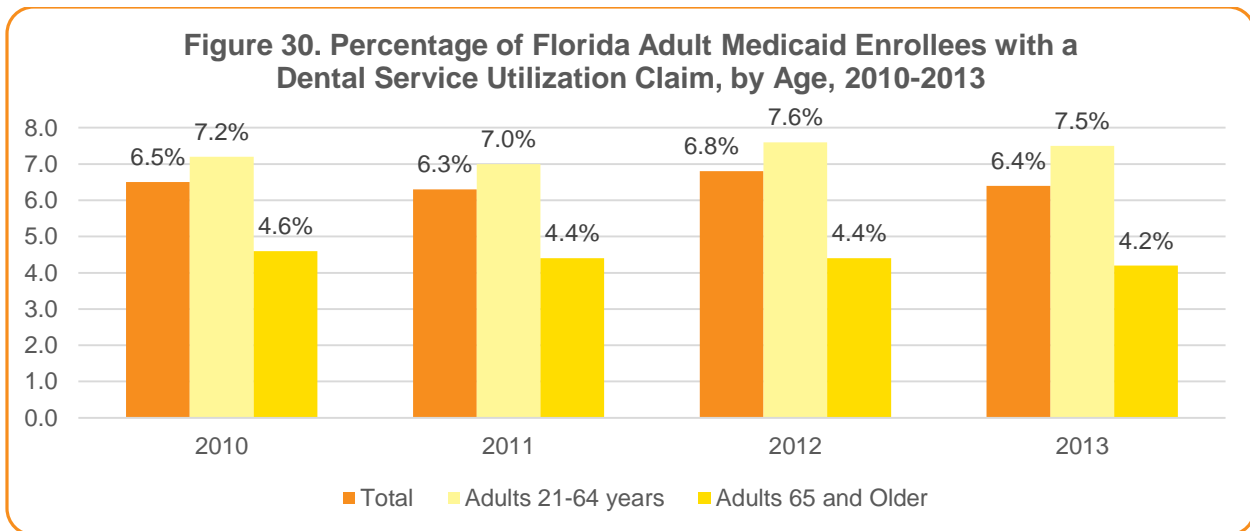


**Table 8. Prevalence of Adults Aged 18 Year and Older With a Visit to the Dentist in the Past Year, BRFSS**

	National-2012 <sup>106</sup> Median %	Florida-2014 <sup>105</sup> Prevalence (95% C.I.)
\$15,000-24,999	49.0%	44.2% (40.8-47.7)
\$25,000-34,999	58.0%	57.7% (53.4-61.9)
\$35,000-49,999	67.7%	65.3% (61.4-69.2)
More than \$50,000	80.3%	78.5% (76.7-80.4)
<b>Education</b>		
Less than High School	44.5%	42.5% (37.7-47.3)
High School or G.E.D.	62.0%	54.3% (51.7-56.9)
Some Post-High School	68.8%	67.0% (64.7-69.2)
College Graduate	80.4%	77.0% (75.2-78.8)

The Florida Agency for Health Care Administration (AHCA) is the agency responsible for the administration of the Florida Medicaid Program. As of November 2015, parents of dependent children qualify for Florida Medicaid if their income is at or below 34% of the federal poverty level.<sup>107</sup> Currently, adults without children are not eligible for Florida Medicaid. Dental benefits for those adults who are enrolled in Medicaid are limited and coverage of preventative, restorative, and surgical dental services vary by Medical Managed Care Dental Subcontractor Plan.

During 2013, approximately 6.4% of adults enrolled in Medicaid had a dental service claim. This percentage has remained constant over the past four years and is higher among younger adults aged 21-64 years compared to adults 65 years and older (Figure 30).<sup>108</sup>



During 2010-2013, the percentage of individuals having a dental claim was slightly higher among female Medicaid enrollees (6.7%) when compared to male Medicaid enrollees (6.1%)

<sup>107</sup> "Medicaid Income Eligibility Limits for Adults as a Percent of the Federal Poverty Level," 2015

<sup>108</sup> Florida AHCA Medicaid Claims, 2010-2013

and highest among non-Hispanic Black Medicaid enrollees (7.5%) when compared to non-Hispanic White enrollees (6.1%) and Hispanic enrollees (5.6%).<sup>108</sup>

### Dental Medicaid and State Children’s Health Insurance Programs

Over the past four years, there have been many changes to Florida Medicaid’s delivery system, including dental benefits. Safety net dental providers (FQHCs, CHDs) moved from a fee-for-service delivery system to a Statewide Prepaid Dental model (managed care environment) in 2012. During 2012-2013, most safety net dental programs participated in the Statewide Prepaid Dental Program administrated by two dental plans under a contractual agreement with Medicaid. The Prepaid Dental Program model was discontinued upon full implementation of the Statewide Medicaid Managed Care Managed Medical Assistance (MMA) program in 2014. The MMA program includes standard health plans and specialty health plans for individuals with serious mental illness, HIV/AIDS, children with certain chronic conditions, children in the child welfare system, and dual eligible recipients with diabetes, chronic obstructive pulmonary disease, congestive heart failure or cardiovascular disease. Full dental services for health plan enrollees under the age of 21 years are provided under the MMA program. Health plans must meet specific network adequacy requirements such that there are a sufficient number of dental providers to ensure adequate accessibility for their enrollees.

Florida counties are organized into 11 Florida Medicaid regions (Table 9).

<b>Table 9. Florida Medicaid Services Areas and Corresponding Counties</b>	
<b>Region</b>	<b>Florida Counties</b>
1	Escambia, Okaloosa, Santa Rosa, Walton
2	Bay, Calhoun, Franklin, Gadsden, Gulf, Holmes, Jackson, Jefferson, Leon, Liberty, Madison, Taylor, Washington, Wakulla
3	Alachua, Bradford, Citrus, Columbia, Dixie, Gilchrist, Hamilton, Hernando, Lafayette, Lake, Levy, Marion, Putnam, Sumter, Suwannee, Union
4	Baker, Clay, Duval, Flagler, Nassau, St. Johns, Volusia
5	Pasco, Pinellas
6	Hardee, Highlands, Manatee, Polk, Hillsborough
7	Brevard, Orange, Osceola, Seminole
8	Charlotte, Collier, De Soto, Glades, Hendry, Sarasota, Lee
9	Indian River, Okeechobee, St. Lucie, Martin, Palm Beach
10	Broward
11	Dade, Monroe

Most health plans subcontract dental benefits for their enrollees to dental benefit providers. Safety net dental providers and programs must negotiate contracts with dental benefit providers to be sustainable.

The Florida Medicaid administrator is AHCA. AHCA uses a Healthcare Effectiveness Data and Information Set (HEDIS) quality of care indicator called the “annual dental visit.”<sup>109</sup> The indicator measures the percentage of managed care enrollees aged 2 – 21 years who had at least one

<sup>109</sup> “Annual Dental Visits”, n.d.

dental visit with a dental practitioner during the measurement year. In 2013, the Florida estimate for this measure was 40%, which is lower compared to the national mean for that year.<sup>110</sup>

The state Children’s Health Insurance Program (CHIP) was created through the Balanced Budget Act of 1997, enacted under Title XXI of the Social Security Act and reauthorized in 2009. Title XXI Florida KidCare consists of three programs:

1. MediKids, for children ages 1 through 4 years (administered by the Agency for Health Care Administration)
2. Children’s Medical Services Plan, for children ages 1 through 18 years with special health care needs (administered by the Department of Health)
3. Healthy Kids, for children ages 5 through 18 years (administered by Florida Healthy Kids Corporation, a non-profit organization)

The Florida Healthy Kids Corporation also uses the HEDIS measures to assess the quality of care offered to its members. One of the key findings in the *Florida Healthy Kids Program Quality of Care Report, Measurement Year 2014*, indicates the HEDIS Annual Dental Visit (ADV) has continued to increase over the past three years.<sup>111</sup> The Healthy Kids ADV rate in 2012 was 58.2 percent. In 2013, the rate increase to 59.2 percent and increased again in 2014 to 60.4 percent. The number of Healthy Kids enrollees receiving any dental service, dental diagnostic services and dental preventive services has also increased over the last three years.

### Community and Migrant Health Centers and other State, County and Local Agencies

The Department’s PHDP collaborates with several organizations such as the Florida Dental Association (FDA), Florida Dental Hygienists Association (FDHA), and United Way. The PHDP collaborates with these organizations which provide advocacy for oral health in the state, increases support for grant applications, and builds partnerships for sharing common goals and achieving shared objectives for improving the oral health status of Florida’s children and families. This includes addressing mutually shared oral health objectives in the SHIP and State Oral Health Improvement Plan. The PHDP also participates in coalitions across the state such as Oral Health Florida and Florida Oral Health Alliance to increase access to care, improve data collection, advance water fluoridation, and reduce health disparities that exist in Florida.

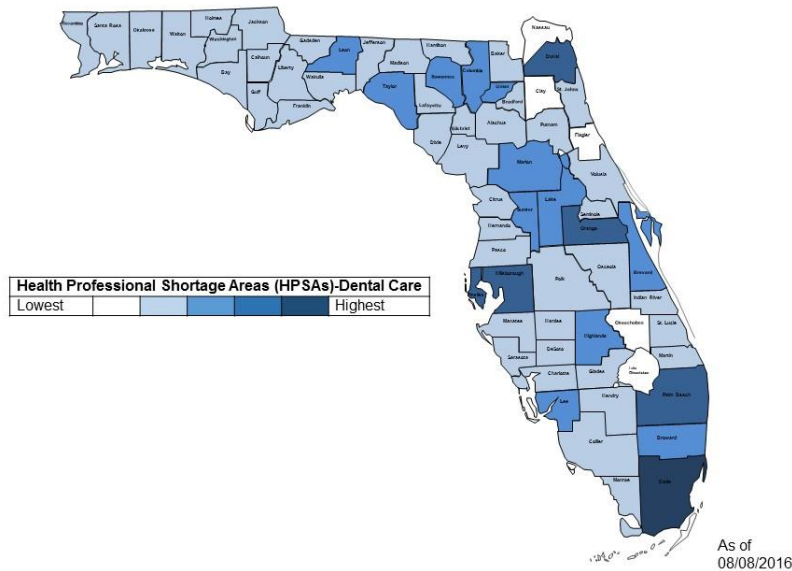
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<sup>110</sup> “Calendar Years (CY) 2013 and 2014 Florida Medicaid Managed Care Performance Measures,” 2015

<sup>111</sup> “Healthy Kids Annual Report,” 2014

Across the state of Florida, there are 222 dental health professional shortage areas (HPSAs).<sup>112</sup> When there are 5,000 or more people per dentist, an area is eligible to be designated as a dental HPSA. The concentration of dental care HPSAs varies by county in Florida (Map 6).

Map 6. Florida Health Professional Shortage Areas for Dental Care by County, 2016



Community health centers and CHDs serve as the backbone for safety net providers across the state. They are an important provider of oral health care in Florida for vulnerable and disadvantaged populations, including low-income, uninsured, and older adult populations. Without safety net providers many individuals would not have access to dental care.

Many of the community health centers and some CHDs qualify as FQHCs. FQHCs receive federal grant funding from HRSA, and they play a large part in providing safety net dental services.<sup>113</sup> Approximately one in five patients being served at Florida HRSA grantee funded sites are being seen for dental services.<sup>114</sup> There are currently 50 FQHCs in Florida and all are part of the community health center system called the Florida Association of Community Health Centers (FACHC).<sup>114</sup> These sites compliment the direct service arm of the PHDP which oversees 58 dental programs located at CHDs across the state. The PHDP is working with FACHC to share statewide dental services data for developing a state plan of action for increasing dental services in low access areas and addressing needs of disproportionate populations.

<sup>112</sup> "Data Warehouse-Shortage Areas," 2016

<sup>113</sup> "2014 Health Center Data," n.d.

<sup>114</sup> "About FACHC," n.d.

## Conclusions

Florida’s oral health status is ranked and graded nationally in two main ways: (1) through the annual PEW oral health grades and (2) through the CMS-416 report rankings. The Pew Research Center is a nonpartisan fact tank that informs the public about the issues, attitudes, and trends shaping America and the world. They conduct public opinion polling, demographic research, content analysis, and other data-driven social science research. PEW grades each state’s oral health policies and access to care based upon specific benchmarks. These benchmarks have changed over time but areas related to increased access to preventive dental services for children, school-based services in high needs schools, and policy related to the provision and billing of dental services have remained consistent throughout the past four years.<sup>115</sup>

Florida received an “F” in 2010 due to low access to care, low percentages of high need schools receiving dental services, and limitations related to the provision and billing of dental services. Florida received an “F” in 2011 as well, only improving to a D in the 2013 report. Since 2010, the Florida Department of Health and additional agencies, partners, and stakeholders focused their attention, resources, and programs to place a central importance on oral health and oral health surveillance activities. In 2014, Florida was one of twelve states that improved since the 2013 report, receiving a “C-.” Florida continues to improve in regards to a robust oral health surveillance system, oral health workforce, access to care and serving Florida’s highest need schools with preventive dental services.<sup>115</sup>

The CMS-416 is an annual report which all states submit data for multiple health indicators. There are seven dental indicators and the states that are reporting data are subsequently ranked. National rankings mainly focus on the total EPSDT eligibles receiving preventive dental services (line 12b on the report) and the total eligible received a dental sealing on a permanent molar tooth (line 12d). The below table shows the improvements Florida has made in these two areas over the past four years:

Year	Line 12b: Percent of EPSDT Eligibles Receiving Preventive Dental Services			Line 12d: Percent of EPSDT Eligibles Receiving a Sealant on a Permanent Molar Tooth		
	Florida	National	Florida’s Ranking (Out of	Florida	National	Florida’s Ranking
2011	13.0%	39.3%	50 <sup>th</sup>	2.2%	6.1%	49 <sup>th</sup>
2012	17.8%	40.4%	50 <sup>th</sup>	3.1%	6.6%	50 <sup>th</sup>
2013	23.6%	41.1%	49 <sup>th</sup>	4.3%	6.4%	47 <sup>th</sup>
2014	25.6%	42.0%	49 <sup>th</sup>	4.6%	6.5%	44 <sup>th</sup>
2015	31.0%	42.9%	48 <sup>th</sup> out of 50	5.8%	6.6%	32 <sup>nd</sup> out of 50

<sup>115</sup> “States Stalled on Dental Sealant Programs,” 2015

<sup>116</sup> Early and Periodic Screening, Diagnostic and Treatment CMS 416 Data-National and State, 2016

Florida has increased the number of children receiving any preventive dental service by 18.0% and the number of children receiving a dental sealant on a permanent molar tooth by 3.6% since 2011.<sup>117</sup>

The PHDP continues to promote cost efficient workforce models, increase access to care through School-Based Sealant Programs and innovative collaborations, increase communities receiving water fluoridation, and conduct oral health surveillance activities for various populations statewide. Through these oral health promotion initiatives and activities, the PHDP will continue to improve, promote, and protect the oral health status of all Floridians.

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<sup>117</sup> Early and Periodic Screening, Diagnostic and Treatment CMS 416 Data-National and State, 2016

## Data Source Table

Data Source	Description	Website	Oral Health Indicators	Data Year Reported
<b>Association of State and Territorial Dental Directors (ASTDD) Annual Report</b>	ASTDD develops a synopsis questionnaire annually that is sent to directors of state dental programs. This synopsis collect data that is useful in tracking states' efforts to improve oral health.	<a href="http://www.cdc.gov/oralhealthdata/overview/synopses/index.html">http://www.cdc.gov/oralhealthdata/overview/synopses/index.html</a>	Local health departments that have an oral health care program	2015
			Local health agencies that serve 250,000 or more persons with a dental public health programs directed by dental professional with public health training	
<b>Behavioral Risk Factor Surveillance System (BRFSS)</b>	State population-based telephone surveillance system administered by the Department with assistance of the CDC. This survey collects data on individual risk behaviors and preventive health practices among adults in the United States.	<a href="http://www.floridahealth.gov/statistics-and-data/survey-data/behavioral-risk-factor-surveillance-system/index.html">http://www.floridahealth.gov/statistics-and-data/survey-data/behavioral-risk-factor-surveillance-system/index.html</a>	Tooth removed	2012
			Lost all natural teeth	2012
			Dental visit in the past year	2012
			Reasons for dental visit	2011
			Teeth cleaning	2010
<b>CMS 416: Annual Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) Participation Report</b>	The annual EPSDT report (form CMS-416) provides basic information on participation in the Medicaid child health program. This report is submitted by each state to federal CMS.	<a href="http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Benefits/Early-and-Periodic-Screening-Diagnostic-and-Treatment.html">http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Benefits/Early-and-Periodic-Screening-Diagnostic-and-Treatment.html</a>	Total individuals eligible for EPSDT for 90 continuous days	2011-2015
			Total eligibles receiving preventive dental services	
			Total eligibles receiving a sealant on a permanent molar tooth	
<b>Florida Adult Tobacco Survey</b>	The Florida Adult Tobacco Survey is a state-level survey providing data on attitudes and beliefs about tobacco use, cessation behaviors, etc.	<a href="http://www.tobaccofreeflorida.com/">http://www.tobaccofreeflorida.com/</a>	Prevalence of adult smokers	2014
<b>Florida Birth Defects Registry</b>	The Florida Birth Defects Registry (FBDR) is a statewide, population-based surveillance system that has identified birth defects in children born in Florida.	<a href="http://www.fbdr.org">http://www.fbdr.org</a>	Prevalence of orofacial clefts	2008-2012
<b>Florida Middle School Health Behavior Survey</b>	The Middle School Health Behavior Survey (MSHBS) is a statewide, population-based confidential survey of Florida's public middle school students to monitor priority health-risk behaviors that contribute substantially to the leading causes of death, disability, and social problems among youth.	<a href="http://www.floridahealth.gov/statistics-and-data/survey-data/middle-school-health-behavior-survey/index.html">http://www.floridahealth.gov/statistics-and-data/survey-data/middle-school-health-behavior-survey/index.html</a>	Percentage of students drinking soda once or more times per day.	2013
<b>Florida Youth Tobacco Survey</b>	The Florida Youth Tobacco Survey (FYTS) tracks indicators of tobacco use and exposure to secondhand smoke among Florida public middle and high school students and provides data for monitoring and evaluating tobacco use among youth for the Florida Department of Health's Bureau of Tobacco Prevention and Control.	<a href="http://www.floridahealth.gov/statistics-and-data/survey-data/fl-youth-tobacco-survey/index.html">http://www.floridahealth.gov/statistics-and-data/survey-data/fl-youth-tobacco-survey/index.html</a>	Percentage of Florida students (Grades 6-12) that used tobacco at least once in the past 30 days	2011-2015
<b>Head Start, Early Head Start, Third Grade, and Older Adult Basic Screening Surveys</b>	The PHDP conducted active surveillance, in collaboration with the Florida Dental Hygiene Association, on dental decay for four ages of populations: Early Head Start (children 0 to less than 3 years age), Head Start (children 3-5 years age), third grade students, and older adults (aged 60 years and older). The surveys were designed based on	<a href="http://www.flhealth.gov/dental">www.flhealth.gov/dental</a>	Caries experience (if they have ever had decay and now have fillings)	Head Start: 2014-2015
			Untreated decay (active unfilled cavities)	Third Grade: 2013-2014
			Urgent need for dental care	Older Adults: 2015-2016

Data Source	Description	Website	Oral Health Indicators	Data Year Reported
	standardized tools and methodologies developed by the Association of State and Territorial Dental Directors (ASTDD).			
<b>Medicaid Claims</b>	Submitted claims among Florida Medicaid beneficiaries; these data was provided by the Agency for Health Care Administration (AHCA).	N/A	Percentage of Medicaid enrollees with a dental service utilization claim	2010-2013
<b>National Program of Cancer Registries</b>	National repository for data collected by local cancer registries; age-adjusted incidence and death rates are provided by gender and race/ethnicity.	<a href="https://nccd.cdc.gov/USCS/state.aspx?state=Florida">https://nccd.cdc.gov/USCS/state.aspx?state=Florida</a>	Incidence and death rate for oral and pharyngeal cancer	2012
<b>National Survey of Children's Health (NSCH)</b>	National telephone survey administered by the Data Resource Center for Child and Adolescent Health most recently in 2011-2012. Parent/guardians respond on behalf of their child.	<a href="http://childhealthdata.org/learn/NSCH">http://childhealthdata.org/learn/NSCH</a>	Conditions of child's teeth	2011-2012
			Number of oral health problems in the past 12 months	2011-2012
			One or more preventive dental visits	2011-2012
<b>National Survey of Children with Special Health Care Needs</b>	The National Survey of Children with Special Health Care Needs (NS-CSHCN) is a national survey that provides a broad range of information about the health and functional status of children with special health care needs collected by the Data Resource Center for Child and Adolescent Health.	<a href="http://childhealthdata.org/learn/NS-CSHCN">http://childhealthdata.org/learn/NS-CSHCN</a>	Receipt of preventive dental visit	2009-2010
<b>Pregnancy Risk Assessment Monitoring System (PRAMS)</b>	Random survey of new mothers (live birth within the past 2-3 months) administered by the FDOH with support of the CDC. Captures state-specific population-based data on maternal attitudes and experiences shortly before, during and after pregnancy.	<a href="http://www.floridahealth.gov/statistics-and-data/survey-data/pregnancy-risk-assessment-monitoring-system/index.html">http://www.floridahealth.gov/statistics-and-data/survey-data/pregnancy-risk-assessment-monitoring-system/index.html</a>	Dental insurance	2012-2013
			Provider talked about the importance of oral health during pregnancy	2012-2013
			Had teeth cleaned	2012-2013
			Needed to see a dentist	2012-2013
			Went to a dentist	2012-2013
<b>Water Fluoridation Reporting System (WFRS)</b>	Data management tool for registered state water fluoridation program officials to report fluoride level in public water systems. Maintained by the CDC.	<a href="http://www.cdc.gov/fluoridation/statistics/2012stats.htm">http://www.cdc.gov/fluoridation/statistics/2012stats.htm</a>	Fluoridation of Community Water Systems	2012
<b>Workforce Surveys</b>	Demographic and practice setting descriptive of licensed, practicing dentists and dental hygienists in Florida. Biennial survey administered by the Medical Quality Assurance section of the Department.	<a href="http://www.floridahealth.gov/programs-and-services/community-health/dental-health/workforce-reports/index.html">http://www.floridahealth.gov/programs-and-services/community-health/dental-health/workforce-reports/index.html</a>	Demographics and clinical characteristics of Florida-licensed dentists and dental hygienists	2013-2014
<b>Youth Risk Behavior Surveillance System (YRBSS)</b>	Statewide school-based survey of Florida's public high school students (grades 9-12), chosen by a random sample of high schools and then a random sample of classrooms. The following topics are asked on the survey: demographic information, unintentional injuries and violence, tobacco use, alcohol and drug use, sexual behaviors, dietary and physical activity.	<a href="http://www.floridahealth.gov/statistics-and-data/survey-data/youth-risk-behavior-survey/index.html">http://www.floridahealth.gov/statistics-and-data/survey-data/youth-risk-behavior-survey/index.html</a>	Sugar sweetened beverage consumption among high school students	2013



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