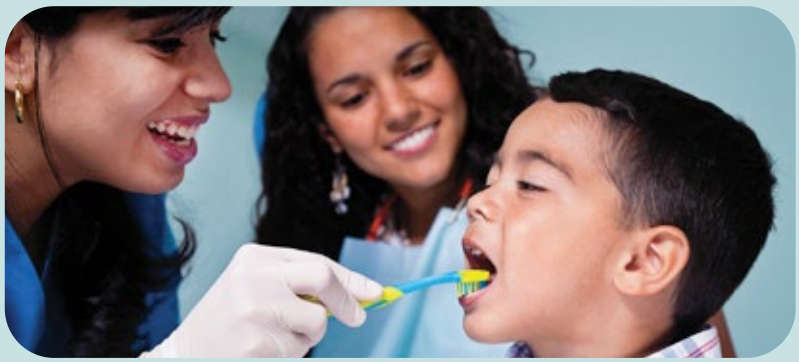




COUNTY OF SANTA CLARA
ORAL HEALTH
NEEDS ASSESSMENT
2018



County of Santa Clara Public Health Department

DECEMBER 2018

Dear County Residents,

We are proud to present the **County of Santa Clara Oral Needs Assessment 2018,** a comprehensive report describing the oral health status of residents in the County of Santa Clara.

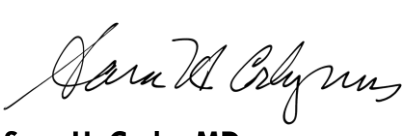
Oral Health is essential to overall health and well-being of all residents regardless of race, ethnicity, age or gender. It is critical to address what California's Little Hoover Commission has called the current "silent epidemic" of tooth decay and disease. We know that residents of Santa Clara County experience major disparities in oral health, primarily based on income, race and ethnicity, and educational attainment. Thousands of residents continue to lack access to basic oral health care due to a variety of social, economic, and geographic factors. We know that the rate of tooth decay among county residents can be significantly reduced with good preventive care early in life.

The information provided by this assessment will serve as a valuable tool. It will allow stakeholders to raise awareness about and address unique challenges affecting the health and well-being of our most vulnerable residents. This assessment also informs the development and allocation of resources for services, as well as policies to address the social and racial inequities that prevent residents from obtaining optimal oral health.

The trends and issues outlined in this report have provided a foundation to develop the most effective strategies to improve oral health in the County of Santa Clara. The information learned through this assessment helped us to develop and publish an oral health strategic plan to achieve optimal health for all.

Our county has a long-standing history of dedicated people working towards improving oral health. In partnership with the many organizations and institutions across the county who are involved in addressing oral health, it is our vision that *every* resident of our county has access to and utilizes high-quality and culturally-appropriate oral health preventive care and services.

We wish to thank all who have participated in this process and look forward to the ongoing participation of the many individuals and organizations to successfully implement the *County of Santa Clara Oral Health Strategic Plan, 2019-2022.*



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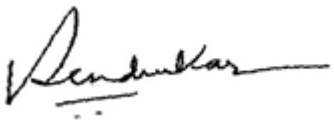

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Santa Clara County PUBLIC HEALTH

COH
Collaborative for Oral Health

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EXECUTIVE SUMMARY

Oral health is essential to overall health and well-being for all individuals, at every stage of life. The impact of oral disease does not stop at the mouth and teeth, but has been linked to several chronic diseases, including diabetes, heart disease, and stroke, to name a few.[1–3] The development and well-being of children are directly related to their oral health as well,[4] with dental caries being the most common chronic disease in children[5] and oral health issues being the number one cause of school absenteeism.[6,7] Poor oral health also has negative impacts on quality of life and employment for adults. [8–10]

Poor oral health has a significant toll on children, adults, families, and communities, with the dental situation in California described as "a silent epidemic" of tooth decay and disease.[11] Yet thousands of County of Santa Clara residents continue to lack access to basic oral health care, due likely to a variety of social, economic, and geographic factors.[12,13] Gaps in oral health status and service utilization are often associated with social and contextual determinants of health, such as education, income, race/ethnicity, age, and foreign-born status, among other factors.[14,15]

To support the development of a Local Oral Health Plan in the County of Santa Clara, the Public Health Department conducted a comprehensive needs assessment to develop a deeper and shared understanding of the oral health status, trends, needs, gaps, resources, and best practices in the county. The "Assessing Oral Health Needs: ASTDD Seven-Step Model"[16] was used to guide the needs assessment. Primary and secondary data, including both quantitative and qualitative data, were collected to establish baseline oral health indicators. Data was collected via an Adult Oral Health Intercept Survey, Dental Provider Survey, Dental Clinic Tool, Key Informant Interviews with leaders in the field, and Focus Groups with members of pre-identified priority populations. The needs assessment provides the foundation and baseline to develop effective oral health improvement strategies and to measure progress over time.

As detailed in this report, the data show that the average County of Santa Clara resident has better oral health status and utilization of dental care than the average Californian and American. This includes a number of Healthy People 2020 (HP 2020) indicators such as untreated dental decay in young children, permanent tooth extraction among adults ages 45-64, and older adults who have lost all of their teeth. Yet these overall figures mask significant disparities based on income, race/ethnicity, and educational attainment. Additionally, several specific populations face unique challenges to maintaining good oral health. The county and its partners are well poised to leverage its resources to close the gaps that have been identified and improve oral health for all residents.

Key strengths

- County of Santa Clara residents generally have better oral health outcomes, such as rates of tooth decay and loss, compared to California and the United States
- Strong collaborations between diverse sectors are already in place across the county, especially for addressing the oral health care needs of children
- Dental screenings are provided to tens of thousands of children across the county through multiple programs, contributing to the early detection of tooth decay
- There is momentum and interest in shifting oral health work upstream by focusing on prevention and early intervention on both a community and individual level

Areas for improvement

- There is a need for increased capacity to provide services to children, Medi-Cal recipients, and hard to reach populations
- Disparities by race/ethnicity and socioeconomic status exist, with Latinx and lower income residents, and those with lower educational attainment consistently experiencing poorer oral health outcomes and lower utilization rates compared to other groups
- There is a need to effectively harness and grow existing efforts to increase preventive care, especially for underserved populations

Demographic characteristics of the County of Santa Clara

The County of Santa Clara is home to almost 2 million residents and is racially and ethnically diverse, with 2% identifying as African American, 34% as Asian, 26% as Latinx, and 33% as White.[17] Thirty-eight (38) percent of the population is foreign-born. [18] Overall, County of Santa Clara residents have high levels of educational attainment and income, but there are disparities between racial and ethnic groups. While 49% of county residents have a bachelors degree or higher, a higher percentage of Asian and White residents have attained this education level compared to African American and Latinx residents.[19] Additionally, the median household income for the county is relatively high, but African American and Latinx residents have much lower median household incomes compared to Asian and White residents, leading to African American and Latinx children experiencing poverty at higher rates than their Asian and White counterparts.[20] Socioeconomic disparities between demographic groups parallel many of the disparities in oral health status and utilization of dental care in the county.

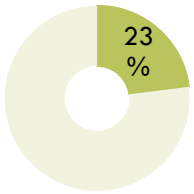
Insurance coverage

While over half of adults in the County of Santa Clara have dental insurance, disparities in coverage exist. Larger percentages of residents with higher household incomes and educational attainment have dental insurance compared to those with lower incomes and educational attainment.

Figure E-1. Adults (18+) and older adults (65+) with dental insurance

Source: County of Santa Clara Public Health Department, 2013-14 Behavioral Risk Factor Survey[21]

Figure E-2. County of Santa Clara residents with Medi-Cal insurance



Source: DHCS Medi-Cal Certified Eligibles Recent Trends, April 2018[22]

Oral health status

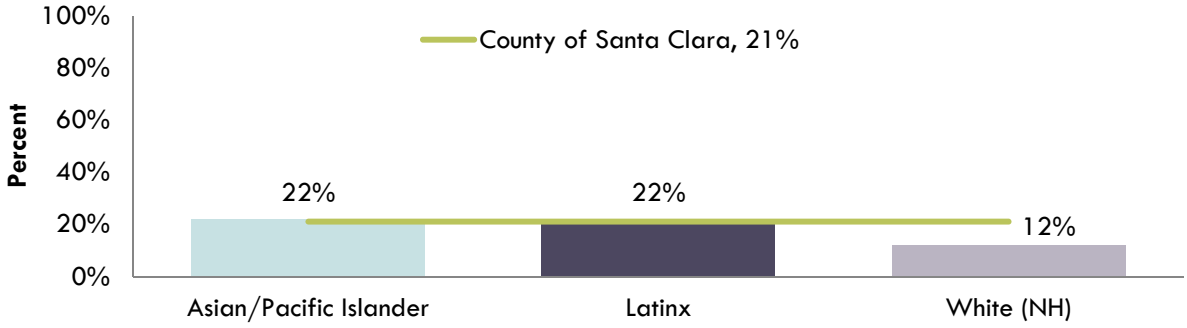
County of Santa Clara residents generally have better oral health outcomes compared to California and the United states, but disparities by race/ethnicity and socioeconomic status exist. Latinx residents consistently have worse outcomes than residents of other races/ethnicities. Residents with lower household incomes and educational attainment often experience worse outcomes compared to their counterparts.

Status among children

HP 2020 indicator: Untreated dental decay among children ages 3-5	**County of Santa Clara[23] = 19%** **California[24,25] = 28%** **U.S.[24,26] = 24%**

Twenty-one (21) percent of children ages 1 to 17 in the County of Santa Clara have had a toothache, decayed teeth, or unfilled cavities in the past year (Figure E-3). In addition, between 2013-2017, untreated tooth decay among kindergarten students has varied between 14%-20% according to results of the Kindergarten Oral Health Requirement.[27]

Figure E-3. Children with toothache, decayed teeth, or unfilled cavities in the past 12 months



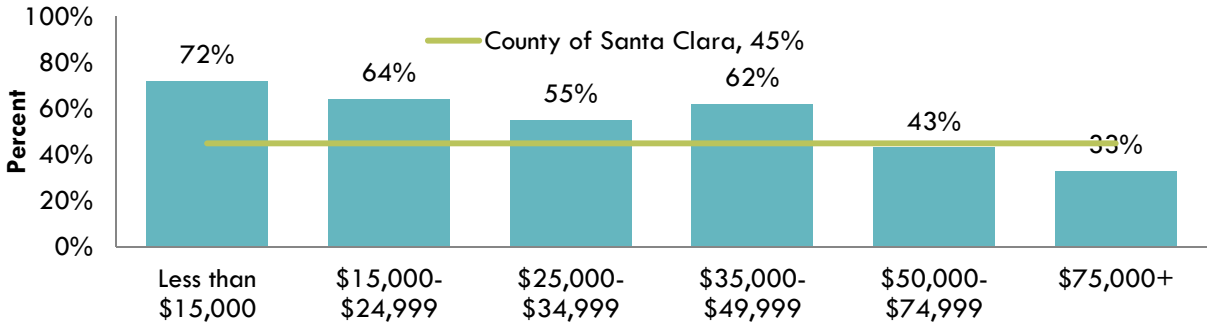
Source: County of Santa Clara Public Health Department, 2016 Child Health Intercept Survey[28]

Status among adults

HP 2020 indicator:	
Permanent tooth extraction due to caries or dental disease among adults ages 45-64	**County of Santa Clara[21] = 45%** **California[24,29] = 50%** **U.S.[24,26] = 76%**

Forty-five (45) percent of adults in the County of Santa Clara have had one or more teeth removed due to disease or decay (Figure E-4), which is lower than the rate in California (50%) and the United States (77%).[30] In addition to the disparities by household income, a higher proportion of African American, Asian/Pacific Islander, and Latinx residents have experienced tooth extraction compared to White residents.[21]

Figure E-4. Adults ages 45-64 with 1 or more permanent teeth removed due to decay or gum disease, by household income



Source: County of Santa Clara Public Health Department, 2013-14 Behavioral Risk Factor Survey[21]

Tooth decay, disease, and extraction can have a negative effect on the educational attainment and economic well-being of adults. A survey conducted among adults in County of Santa Clara as part of this needs assessment indicated that 32% of adults occasionally or often have difficulty doing a regular job or attending school due to pain associated with oral health issues.[31]

Status among older adults

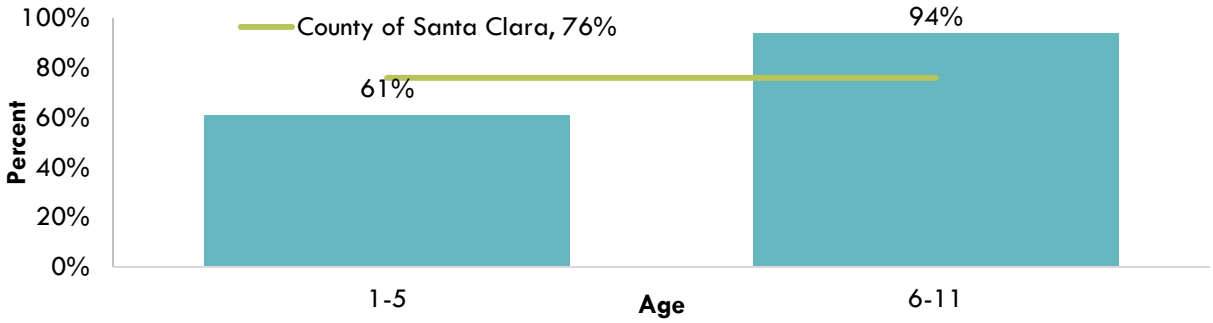
HP 2020 indicator:	
Complete tooth loss due to caries or dental disease among older adults ages 65-74	**County of Santa Clara[21] = 6%** **California[24,29] = 9%** **U.S.[24,26] = 24%**

Older adults in the County of Santa Clara experience better outcomes compared to California and the United states when it comes to complete tooth loss.[21,24] Though, in a recent survey in the County of Santa Clara, 26% of older adults reported feeling self-conscious because of their teeth, mouth, or dentures fairly or very often, something that is important given the increases in isolation and loneliness that often happen as adults age.[31]

Utilization by children (ages 0-17)

Three-quarters of all children in the county ages 1 to 11 have visited the dentist in the past year, with a smaller percentage of younger children recently utilizing care (Figure E-5).

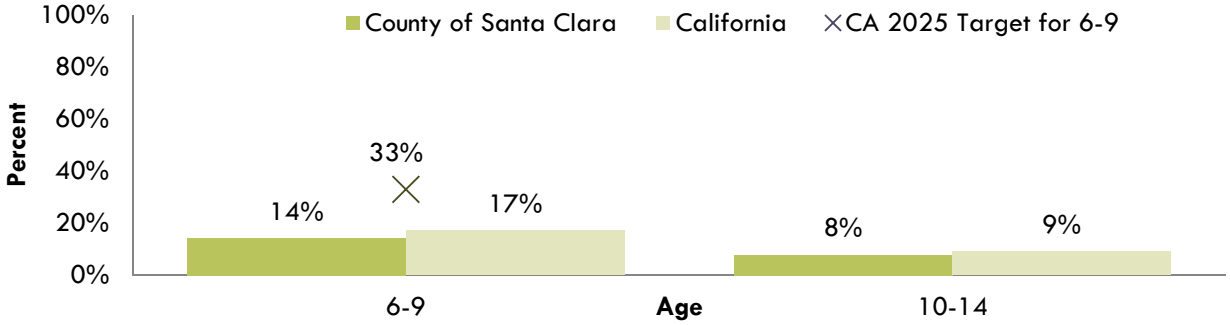
Figure E-5. Children ages 1-11 who reported visiting the dentist in the past 12 months



Source: County of Santa Clara Public Health Department, 2013-14 Behavioral Risk Factor Survey[21]

Children ages 6 to 9 and 10 to 14 with Medi-Cal insurance received sealants at comparable rates to children across California in 2016 (Figure E-6). In addition, among children ages 0 to 18 who have Medi-Cal, 47% received an annual dental visit and 45% received a preventive visit in 2016, which is on par with California and has remained stable since 2013.[32]

Figure E-6. Medi-Cal beneficiaries ages 6-14 who received sealants in the County of Santa Clara and California, by age group

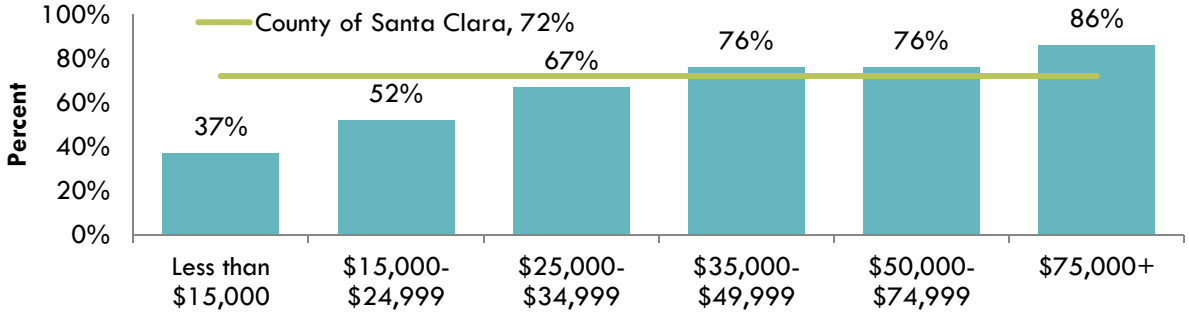


Source: Department of Health Care Services, Medi-Cal Dental Services Division, Dental Utilization Measures and Sealant data 2016;[33] California Department of Public Health, California Oral Health Program, California Oral Health Plan 2018-2028[24]

Utilization by adults (ages 18-64)

While 72% of all adults have visited a dentist in the past year, there are disparities by household income (Figure E-7). In addition, Latinx residents (59%) and adults ages 25-34 (58%) have lower rates compared to their counterparts.[21]

Figure E-7. Adults who have visited the dentist in the past 12 months, by household income



Source: County of Santa Clara Public Health Department, 2013-14 Behavioral Risk Factor Survey[21]

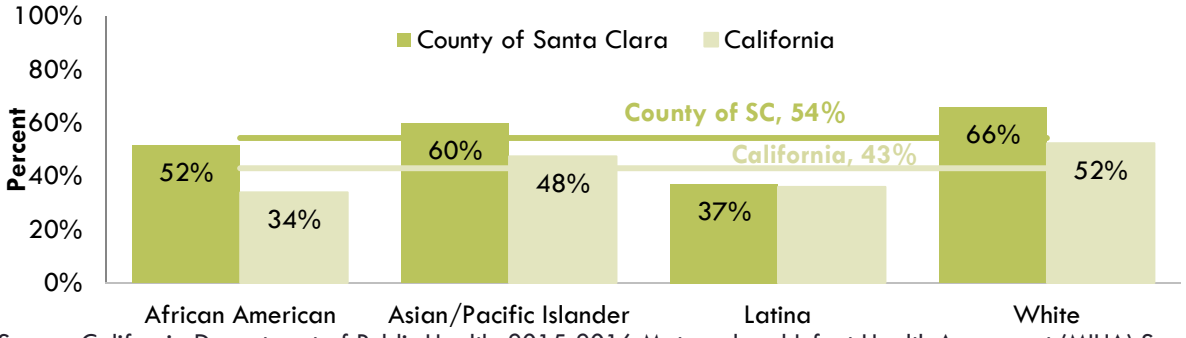
Among adult Medi-Cal beneficiaries in County of Santa Clara, 22% received an annual dental visit and 19% received a preventive visit in 2016, representing an increase since Medi-Cal dental benefits were reinstated in 2014. Notably, 19 and 20 year olds experienced higher rates of annual and preventive visits compared to other adults.[33]

Utilization and oral health barriers for priority populations

Several populations were identified as potentially having unique experiences and challenges when accessing oral health care, including foster youth, juvenile justice-involved youth, pregnant women, low-income older adults, and homeless adults. In general, members of these priority populations hold a high level of knowledge about oral health care, but barriers prevent the translation of this knowledge into care utilization.

While pregnant women in the County of Santa Clara utilize care at higher rates compared to California, rates are still low and there are disparities by race/ethnicity (Figure E-8).

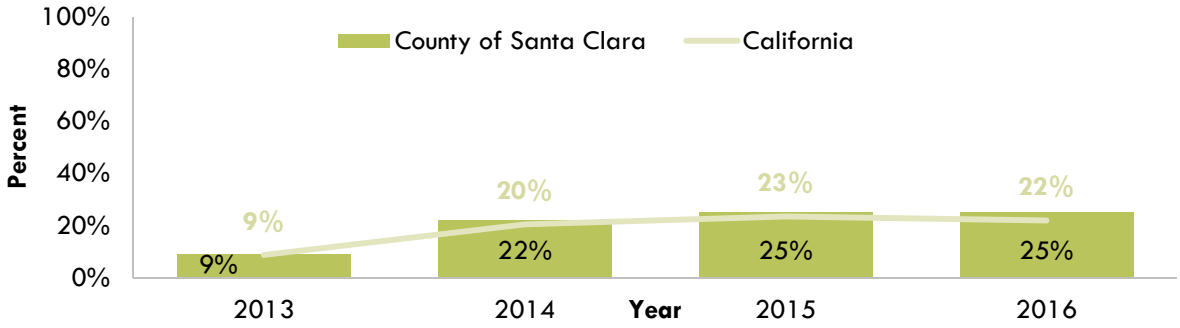
Figure E-8. Women with a recent live birth who visited the dentist during pregnancy



Source: California Department of Public Health, 2015-2016 Maternal and Infant Health Assessment (MIHA) Survey[34]

Low-income older adults in the county have a slightly higher rate of annual dental visits compared to California, but rates are low and have been stagnant since 2014 (Figure E-9).

Figure E-9. Medi-Cal beneficiaries age 65 and older who received an annual dental visit



Source: Department of Health Care Services, Medi-Cal Dental Services Division, Dental Utilization Measures and Sealant data 2013-2016[32]

The most common barrier to accessing desired oral health care for these populations (foster youth, juvenile justice-involved youth, pregnant women, low-income older adults, and homeless adults) is cost, followed by transportation, challenges navigating systems of care, providers lacking training on trauma-informed practices and addressing behavioral issues, and language differences between patients and providers. These barriers likely contribute to low utilization rates compared to the general population, as can be seen in both qualitative and quantitative data.

Priority populations also experience barriers to implementing daily practices that promote good oral health, including the cost of hygiene supplies, pain or discomfort associated with flossing, the wide-spread availability of sugar-sweetened foods and beverages, and physical and behavioral health limitations.

Dental capacity

There is insufficient Medi-Cal participation by private dental providers, with few providers currently accepting new Medi-Cal patients in the south part of the County of Santa Clara.[35,36] The number one reason for dental providers not accepting patients with Medi-Cal coverage is low reimbursement rates,[37] though there have been changes to payment structures which could incentivize providers to accept new Medi-Cal patients.[38]

Community health centers (CHC) – including Federally Qualified Health Centers (FQHCs), FQHC Look-Alikes, and community clinics – are the safety net for bringing needed dental services to Medi-Cal and uninsured populations. While CHCs serve many dental patients and have expanded services in recent years, demand still outweighs capacity. The top strategies that CHCs report would increase the number of patients they see are: 1) increase the number of paid

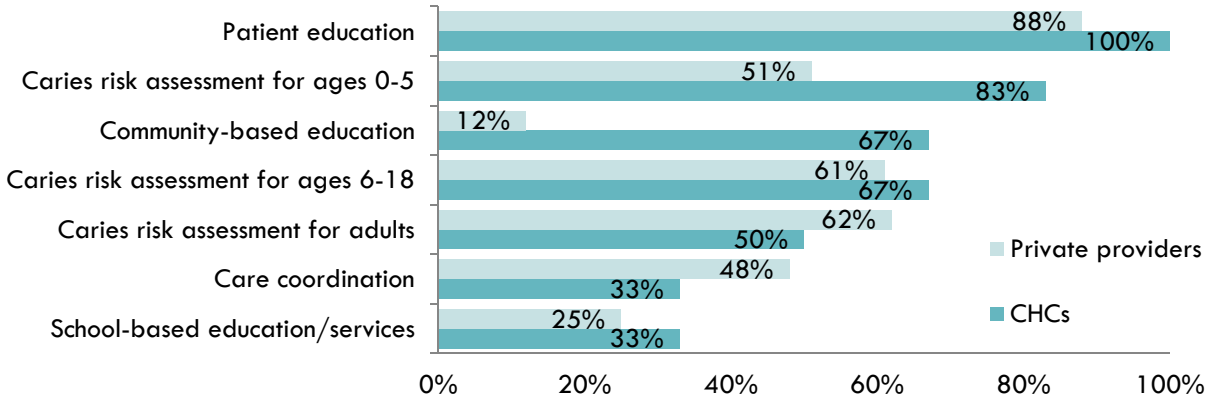
dentists, 2) increase the number of paid dental hygienists, 3) increase the number of paid dental assistants and 4) add additional operatories to existing facilities.[39]

Increases in dental capacity in the county may help increase access to care and decrease the rate of preventable dental emergency department (ED) visits. Emergency departments are crucial resources when dental issues are highly acute, but are not ideal sources of dental care. In the County of Santa Clara, the rate of ED visits for non-traumatic dental conditions (NTDCs) is lower than that for California, but significant differences in use rates exist between racial/ethnic groups. Asian residents use the ED for dental needs at a lower rate than all other races/ethnicities, while African American and Latinx residents have the highest rates of use.[40]

Risk and protective factors

Both community health centers (CHCs) and private dental providers participate in activities that reduce risk and protect patients from experiencing dental disease, though there are variations (Figure E-8). CHCs and private providers also both work with patients on the individual level to prevent and reduce tobacco consumption.[37,39]

Figure E-8. Education and prevention activities at CHCs and private dental offices



Source: County of Santa Clara Public Health Department, 2018 Dental Provider Survey;[37] County of Santa Clara Public Health Department, 2018 Dental Clinic Tool[39]

On the community level, the presence of the supplemental fluoride in drinking water at optimal levels is beneficial for oral health, and is a cost-effective and safe way to prevent tooth decay and cavities.[41] Accordingly, the County of Santa Clara Public Health Department has chosen to prioritize water fluoridation efforts in lower-income areas, namely in East San Jose, due to their observably higher oral health disease burden.

Programs & resources

Strong collaborations exist between a network of various oral health programs and resources within the county, especially for addressing the oral health care needs of children. Specific

community assets include, but are not limited to, the Collaborative for Oral Health (a county-wide umbrella organization of diverse stakeholders that works to improve oral health for all residents), strong screening programs run by organizations such as Healthier Kids Foundation and FIRST 5, and a vast network of community health clinics serving low-income residents. The work being done by organizations in the county spans multiple areas of oral health, including providing screenings, educating youth and families, and funding other oral health programming. Given the wide variety of work currently happening in the county and the strong relationships that exist, there may be great opportunity for this collaborative work to strengthen and grow.

Next steps

The summary of findings from this needs assessment were presented at a community-wide strategic planning retreat on August 28, 2018. Based on the results of this retreat and subsequent work by the Strategic Planning Design Team and workgroups, a strategic plan was developed to address the gaps identified in this needs assessment.

The goals of the strategic plan center on increasing access to dental services, promotion/education, integration of medical and dental care, strengthening the oral health workforce, improving coordination and policy, standardizing data collection and evaluation efforts, and improving community water fluoridation.

CHAPTER 1 : INTRODUCTION

Background of the County of Santa Clara Local Oral Health Plan

In 2016, California voters approved the California Healthcare, Research and Prevention Tobacco Tax Act (Proposition 56) to increase the excise tax rate on cigarettes and tobacco products. Proposition 56 provides funding to implement the State Oral Health Plan and to support local oral health programs. The State Oral Health Plan provides the roadmap for planning and implementation and a structure for collective action in partnership with local jurisdictions.[24] Each county was invited to seek funds to develop a Local Oral Health Plan using a community-engaged process. This process includes completing an oral health needs assessment and developing a strategic plan which guides the design and implementation of programs and policies in order to substantively improve oral health in each county.

To support the development of a Local Oral Health Plan in the County of Santa Clara, the Public Health Department (PHD) conducted a comprehensive needs assessment to develop a deeper and shared understanding of the oral health needs, problems, resources, best practices, gaps, and trends in the County. The needs assessment used multiple methods to identify populations at high risk for poor oral health and who lack access to quality oral health care. This needs assessment provides the foundation and baseline to develop effective oral health improvement strategies and to measure progress over time. The "Assessing Oral Health Needs: ASTDD Seven-Step Model"[16] was adopted to guide the needs assessment, as outlined below:

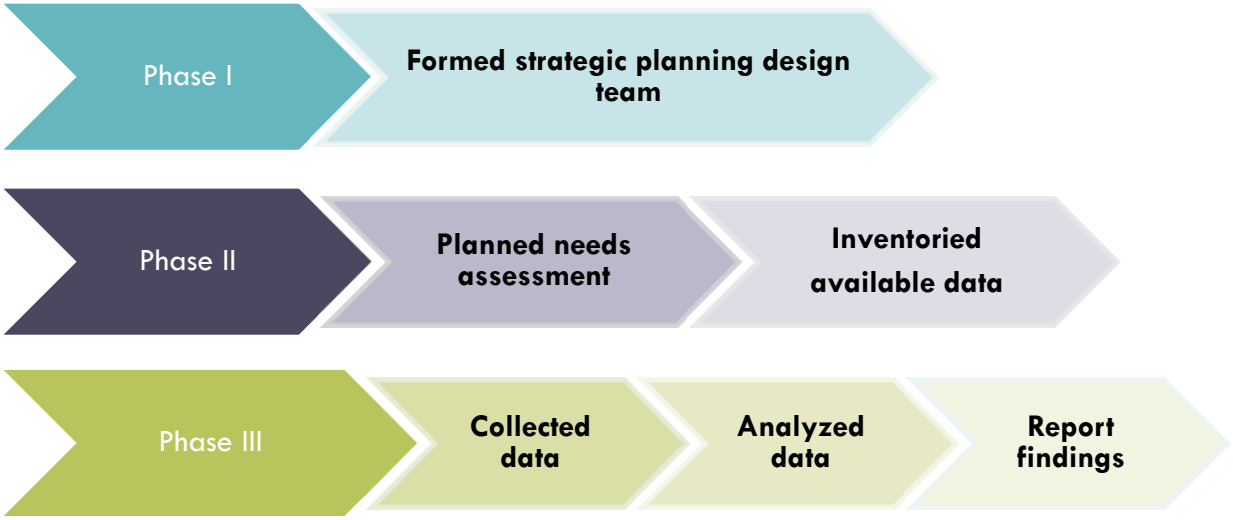
Step 1 **Identify Partners and Form a Data Workgroup.** The oral health needs assessment was planned and implemented by a county oral health data workgroup.

Step 2 **Conduct Self-Assessment** to identify specific goals and resources for the county and develop pertinent research questions. The data workgroup determined the goals and purposes of the needs assessment, developed research questions, and identified priority populations. Salient research questions are as follows:

- How do different demographic groups access oral health care?
- What are the differences in oral health status among diverse demographic groups?
- How successful are current efforts at risk reduction/community-based prevention?
- How should the oral health system develop to achieve equitable access to care?

Step 3 **Plan Needs Assessment.** The workgroup planned a comprehensive needs and asset assessment using a combination of primary and secondary data and quantitative and qualitative methods to optimize data collection. The indicators were chosen based on state and nationally recommended oral health indicators[30,42] and were intended to be the building blocks for the development of an ongoing oral health surveillance program. Figure 1-1 summarizes the needs assessment process.

Figure 1-1. Needs Assessment Process



Step 4 **Collect Data.** Primary and secondary data, including both quantitative and qualitative data, were collected to establish baseline oral health indicators. Data was collected via an Adult Oral Health Intercept Survey, Dental Provider Survey, Dental Clinic Tool, Key Informant Interviews with leaders in the field, and Focus Groups with members of pre-identified priority populations. More details on the data, methods, and instruments used can be found in Appendices A & B.

Step 5 **Organize and Analyze Data.** Data were analyzed to best answer the research questions that emerged from Step 2, and from the literature on best practices.

Step 6 **Data Dissemination.** The workgroup, in consultation with the county oral health Strategic Planning Design Team ("Design Team") and data workgroup, developed a data dissemination plan, including presenting the data at the community strategic planning stakeholder retreat and via reports to the county.

Step 7 **Evaluate and Integrate Needs Assessment.** The data workgroup and the Design Team collaborated in order to obtain their expert feedback regarding the quality and efficacy of the needs assessment process and results.

Why is oral health important?

Despite recent national oral health policy efforts and improvements, disparities persist and poor oral health is prevalent among the nation's most vulnerable citizens—low income children, older adults, and many racial/ethnic minority groups;[10] millions of Americans continue to lack access to basic oral health care due to a variety of social, economic, and geographic factors.[12,13] Furthermore, in 2016, California's Little Hoover Commission (a state appointed watchdog group) described the dental situation in California as "a silent epidemic" of tooth decay and disease.[11]

As the California Oral Health Plan states, "Oral health is an essential and integral component of overall health throughout life."[24] Oral health is essential to the overall health and well-being for everyone, at any age. The impact of oral disease, ranging from dental caries (i.e., tooth decay and cavities) to oral cancer, does not stop at the mouth and teeth.[43] There is evidence linking oral health to several chronic diseases, including but not limited to, diabetes, heart disease, and stroke.[1–3] The quality of life, growth, and well-being of children are also directly related to their oral health.[7]

Among very young children, a painful dental infection can lead to failure to grow and thrive[44] and dental problems are one of the leading causes of school absenteeism.[6,45] In California, oral health problems were responsible for 874,000 missed school days in 2007 resulting in an estimated $30 million of lost school district revenue limit funding.[6] Among adults, poor oral health leads to lost work hours and is linked to a reduced likelihood of employment and increased hospitalization due to infection.[46,47] For pregnant women, poor oral health has a disproportionate impact on their overall health, and importantly, poor oral health during pregnancy has also been linked with adverse birth outcomes and poor child oral health.[48–51] Among older adults, oral health problems contribute to a lower quality of life and multiple oral health issues are associated with increased mortality.[52,53]

Poor oral health has a significant toll on children, adults, families, and society as a whole. Fortunately, most of these conditions can be avoided via preventive and well-known oral health best practices and regular visits to the dentist.[43]

Oral health best practices

Best practices for improving oral health at the community level focus on prevention as "upstream" as possible by targeting pregnant women, young children, and system based preventive approaches. Local policies are an effective way to support the implementation of oral health best practices. Oral health best practices in this context include:

- **Dental visits by age one**[54] **and during pregnancy**[55]
- **Application of fluoride varnish and dental sealants,** reducing risk of early childhood tooth decay by 50% and school age tooth decay by 88% respectively[56,57]
- **Bringing services to where people are,** including at WIC (Women, Infants and Children) programs, schools, agencies serving very young children (e.g. FIRST 5 and HeadStart), agencies serving hard to reach populations (e.g. adults experiencing homelessness), and agencies serving older adults
- **Systematic coordination and linkage to early care,** such as through care coordinators and other peer educators[58]
- **Integration of medical and dental services,** including oral health screenings, fluoride varnish, education and referral to a dentist at well-child visits, and OB/GYN visits[58,59]
- **Comprehensive medical and dental services at community health clinics,** including Federally Qualified Health Centers (FQHCs), FQHC Look-Alikes, and community clinics, which serve low-income, hard to reach, and underserved populations[58,59]
- **Community and individual oral health education** regarding oral health hygiene, tobacco cessation, and reduction in sugar consumption[60–63]
- **Community water fluoridation**[64]

CHAPTER 2 : DEMOGRAPHIC CHARACTERISTICS

Two of the most influential determinants of oral health status are educational attainment and household income.[15] While the average income and educational attainment in the County of Santa Clara exceed those in California and the U.S., major disparities exist. Latinx and African American residents in the county have significantly lower educational attainment and household income compared to their White and Asian counterparts, putting them at greater risk for poor oral health outcomes.

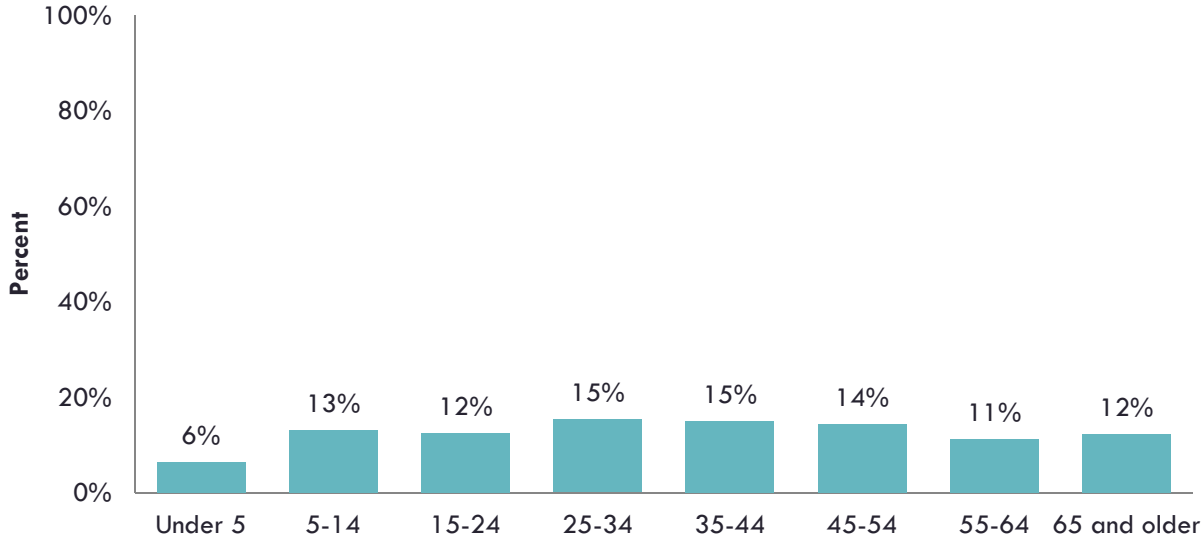
Gaps in oral health status and service utilization are often associated with social and contextual determinants of health, such as educational attainment, income, race/ethnicity, age, and foreign-born status, among other factors.[14] Individual beliefs and practices are also at least in part shaped by social determinants of health, and while dental care delivery systems are an important factor in oral health status, findings from the World Health Organization show that oral health beliefs and personal health practices, along with regional commitments to implementing prevention activities, might be of equal or greater importance.[65] Furthermore, it is not simply that gaps exist between the highest and lowest levels of any one demographic factor (e.g., income level); there are also relative social gradients within each group due to other demographic factors (e.g, race, age, etc.),[15] indicating that gaps and inequalities in oral health are highly contextual.

Across studies from several countries, socioeconomic status was associated with oral health outcomes.[66–69] A study by Heft, et al found that those with less education and financial resources not only had more oral health problems than those with higher education and/or incomes, but were also less interested in seeking out dental services.[70] In addition, different age groups have unique oral health needs, concerns, and access to care. For example, while preventive care is vitally important for all ages, it is especially important early in the lifespan (during pregnancy and in early childhood), given the negative effect that poor oral health care during these time periods can have on a person throughout the course of their lives.

Age distribution

The County of Santa Clara is home to almost 2 million residents. There is a relatively even distribution across age groups and the median age in the county is 36.8 years (Figure 2-1).[17]

Figure 2-1. Distribution of County of Santa Clara residents by age

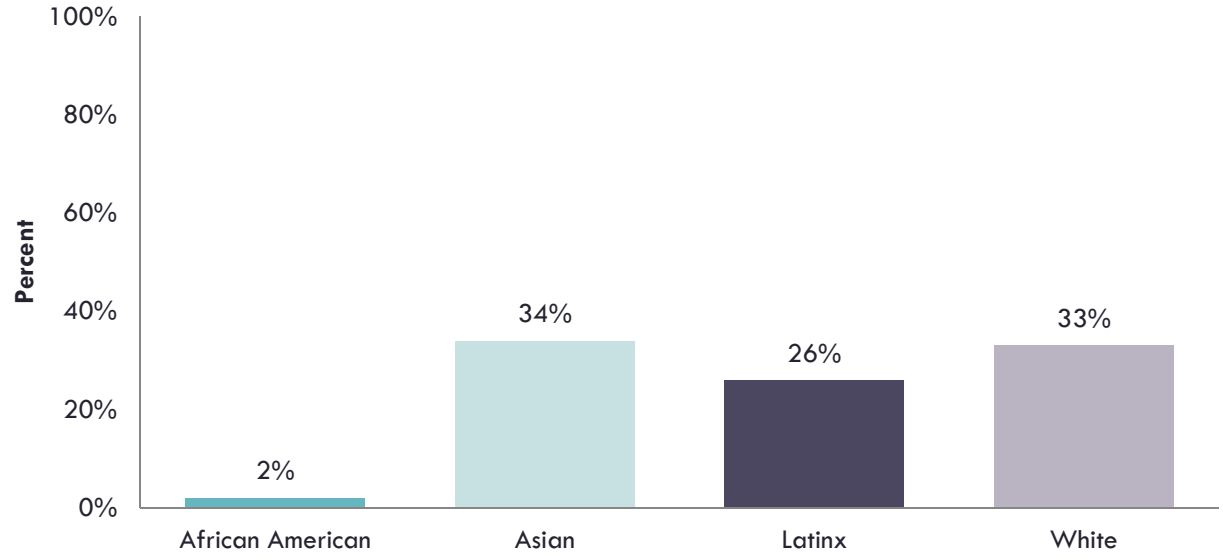


Source: U.S. Census Bureau, American Community Survey, 2012-2016 American Community Survey 5-Year Estimates[71]

Racial/ethnic distribution

The County of Santa Clara is racially and ethnically diverse, with 2% identifying as African American, 34% as Asian, 26% as Latinx, and 33% as White (Figure 2-2). While the African American population is small in comparison to other races/ethnicities in the county, they may be at risk for worse oral health outcomes (see later chapters). In California, African American adults have the highest prevalence of permanent tooth extraction due to decay or gum problems.[30]

Figure 2-2. Distribution of County of Santa Clara residents by race/ethnicity

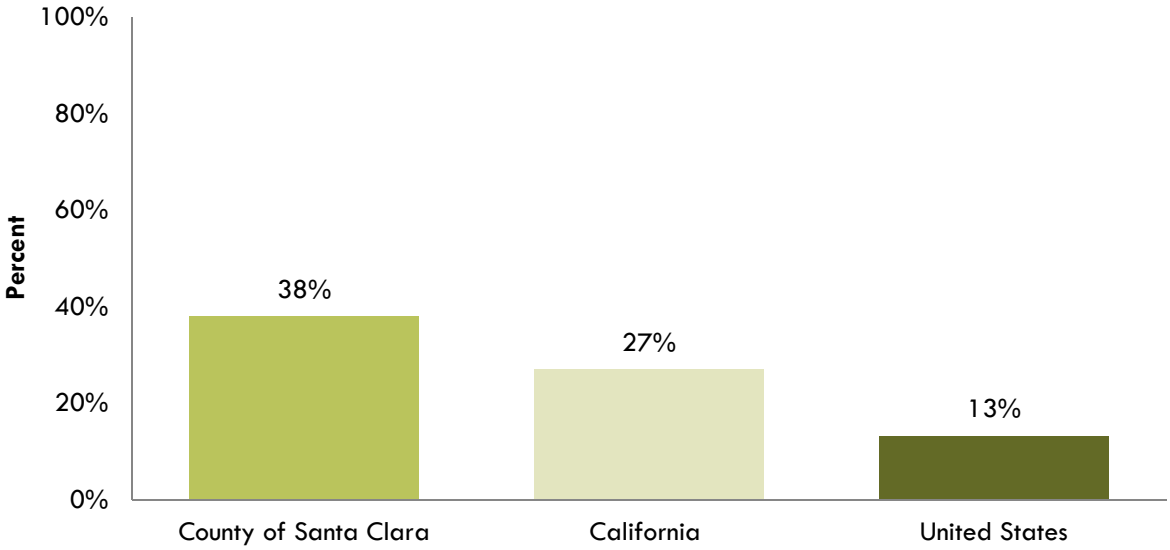


Source: U.S. Census Bureau, American Community Survey, 2012-2016 American Community Survey 5-Year Estimates[17]

Foreign-born status

Compared to California and the United States, the County of Santa Clara has a higher proportion of foreign-born residents, with 38% of the population born outside the U.S. (Figure 2-3). In the County of Santa Clara, 65% of people who are foreign born are from Asia and 24% are from Latin America.[18] Foreign-born status may be an important demographic factor for oral health given the wide variation in quality of and access to dental services in other countries, and differences in oral health education.

Figure 2-3. Foreign-born population in the County of Santa Clara, California, and the U.S.

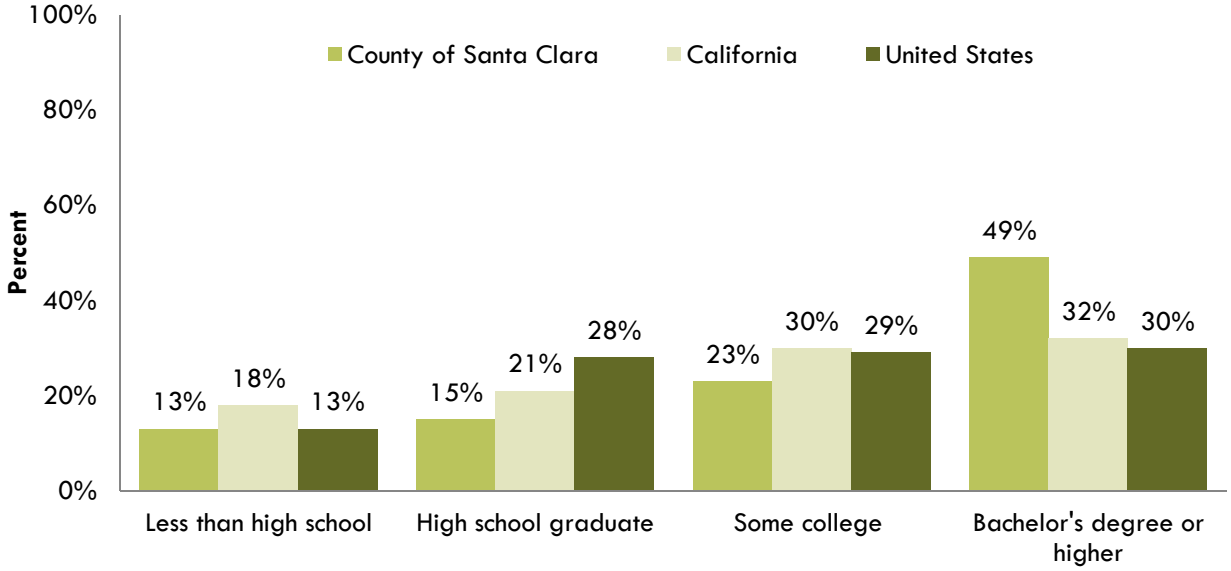


Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates.[18]

Educational attainment

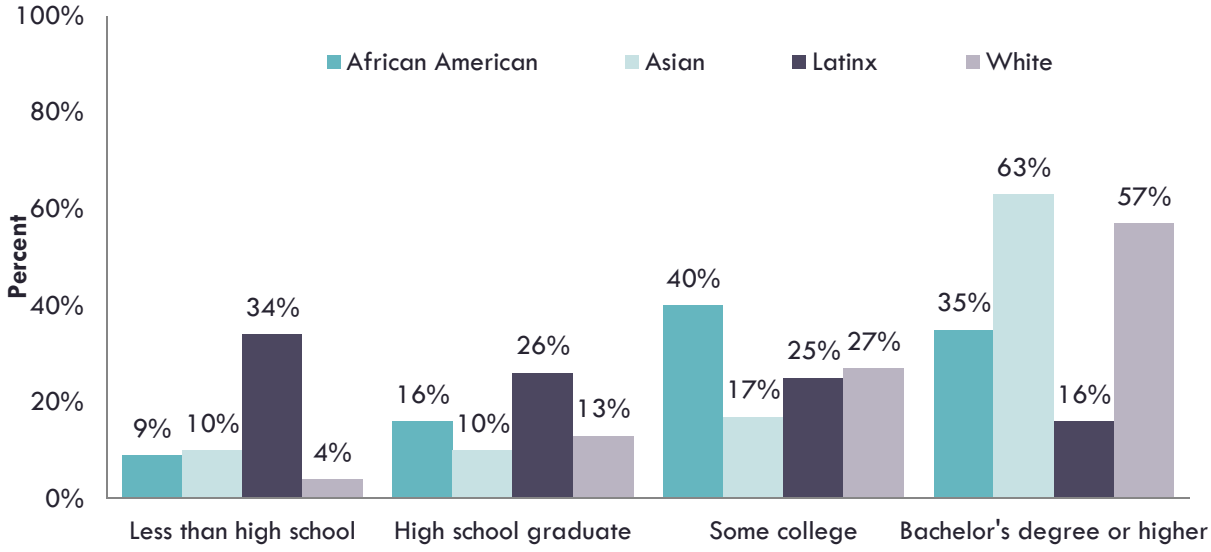
A higher proportion of County of Santa Clara residents have a Bachelor's degree or higher (49%) compared to California (32%) and the United States (30%) (Figure 2-4). However, this high rate of educational attainment is not consistent across all racial/ethnic groups. A higher percentage of Asian (63%) and White (57%) county residents have attained a Bachelor's degree or higher compared to African American (35%) and Latinx (16%) residents. A greater percentage of Latinx residents have attained only a high school diploma or less compared to other residents (Figure 2-5).

Figure 2-4. Educational attainment of adults (25 and older) in the County of Santa Clara, California, and the U.S.



Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates.[72]

Figure 2-5. Educational attainment of adults (25 and older) in the County of Santa Clara, by race/ethnicity



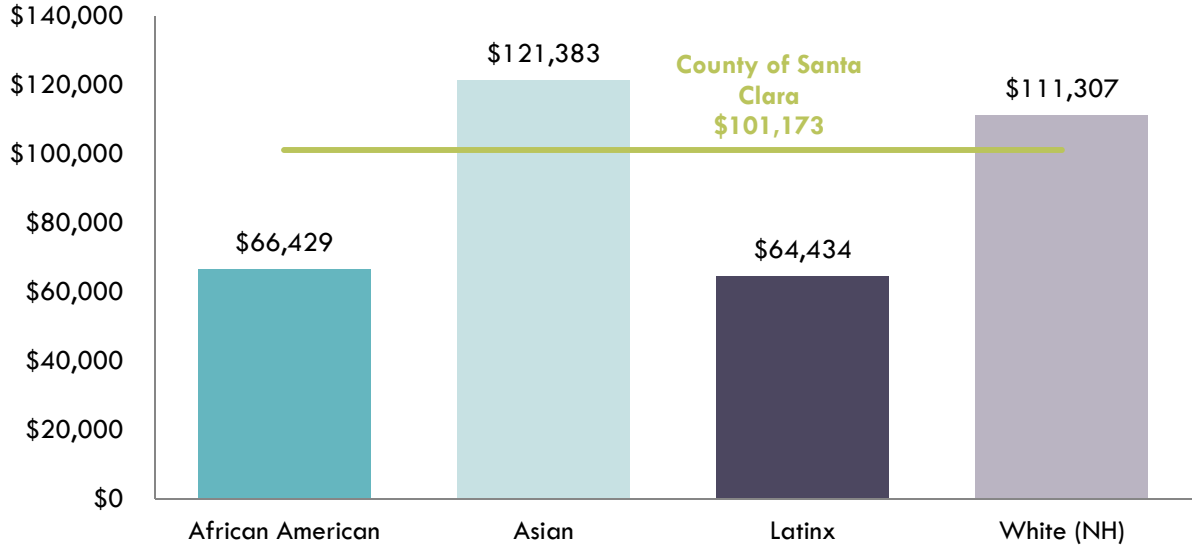
Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates.[19]

Socioeconomic status

Household income

The median household income in the County of Santa Clara is $101,173, higher than the California median household income of $63,783.[20] Despite the county's high median household income, disparities between racial/ethnic groups exist, with African American and Latinx residents having a lower median household income compared to Asian and White residents (Figure 2-6).

Figure 2-6. Median household income in the County of Santa Clara

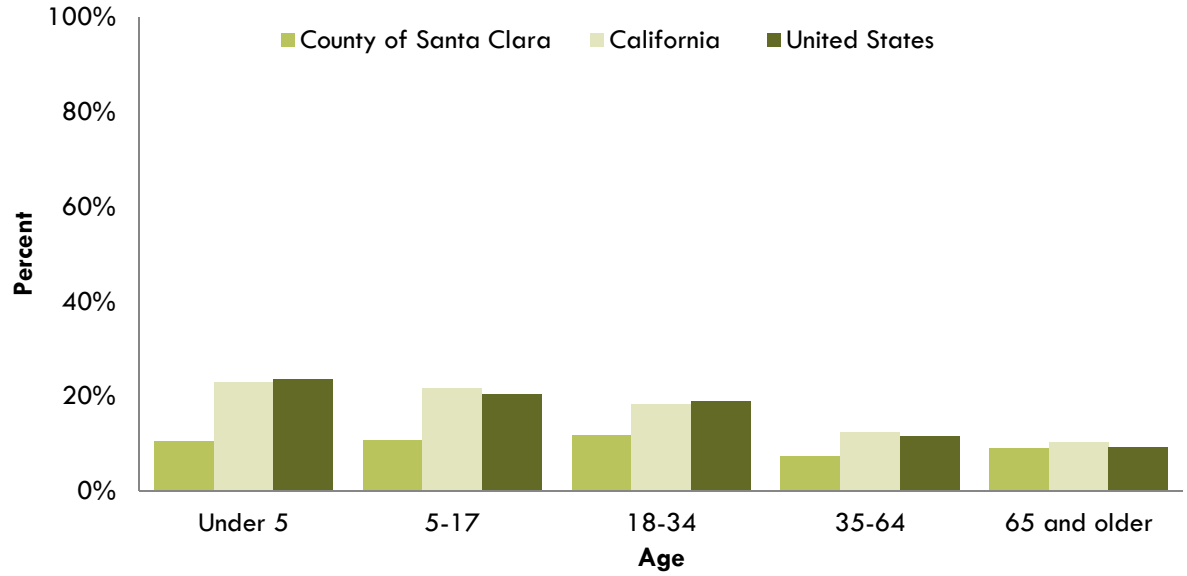


Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates.[20]

Poverty level

The Federal Poverty Level (FPL) is a threshold that is used by the Census Bureau and other governmental agencies to determine who is in poverty. The threshold varies by family size and composition, but not geographically. For example, the threshold for a family of four (with 2 children under 18) was $24,339 in 2016,[73] regardless of the cost of living in the region. A lower percentage of the population in the County of Santa Clara lives below the Federal Poverty Level (9%) than in California (16%) or the United States (15%) (Figure 2-7).[74]

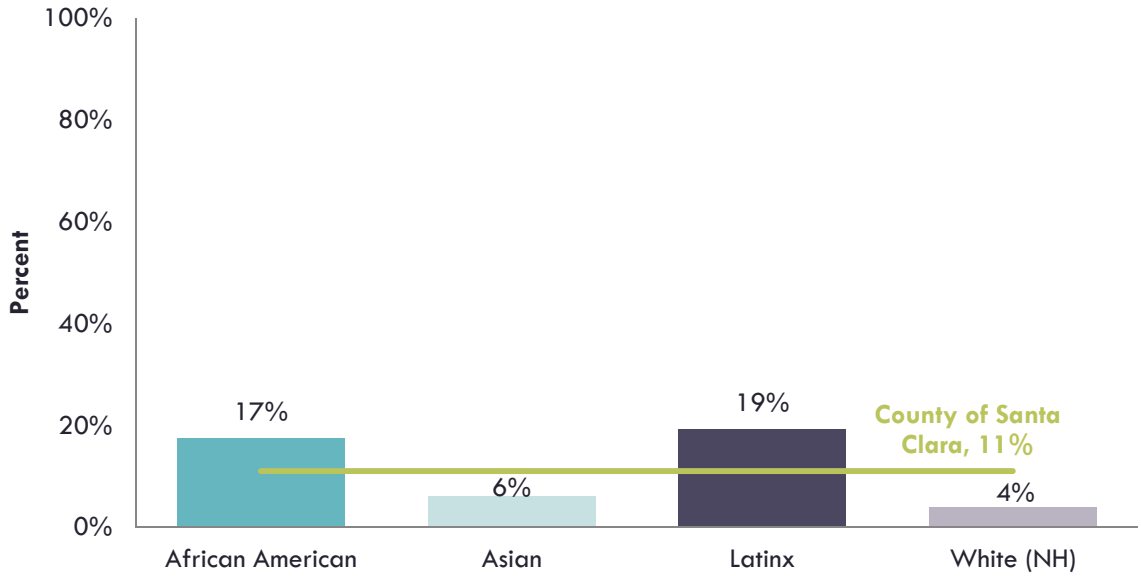
Figure 2-7. People living below the federal poverty level in the County of Santa Clara, California, and United States



Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates.[75]

In addition, the proportion of children under the age of 18 who live below the poverty line (11%) is higher than the rate among county residents overall (9%) (Figure 2-8). African American (17%) and Latinx (19%) children ages 0 to 17 experience poverty at significantly higher rates than their Asian (6%) and White (4%) counterparts in the county (Figure 2-8).

Figure 2-8. Children and youth (0-17) living below the federal poverty level in the County of Santa Clara



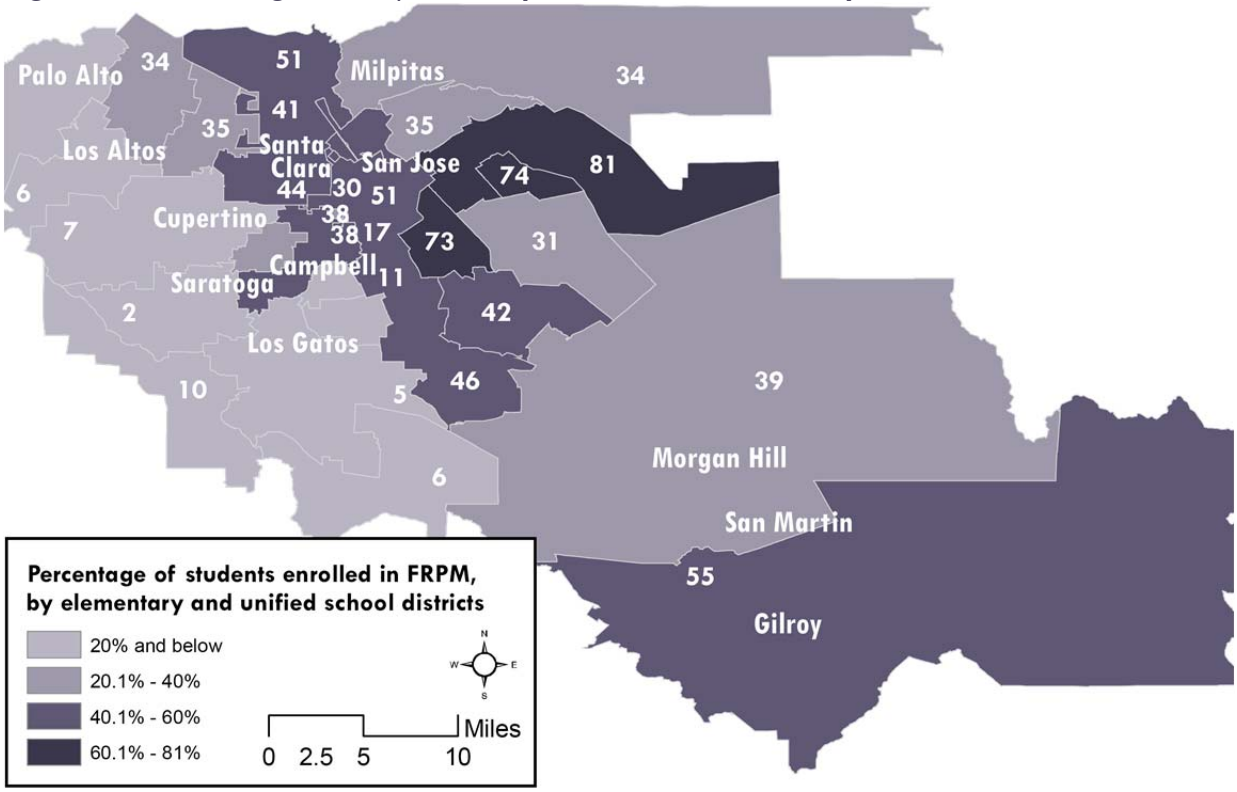
Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates.[76]

Free/reduced price meals (FRPM)

The free and reduced price meal (FRPM) program is a means-tested entitlement program, meaning that it can be used as a proxy for high economic need. Higher rates of FRPM at a school can indicate higher rates of poverty among families in the surrounding geographic area and can therefore point to more potential access-to-care barriers for children and their families Children who are eligible for the FPRM program have a family income under 130% (for free meals) and 131-185% (for reduced price meals) of the Federal Poverty Level.[77]

In the County of Santa Clara, 38% of students in elementary or unified school districts are enrolled in a FRPM program, which is significantly lower than the California rate (60%). There is wide variation between districts in the county, ranging from 2% in the Saratoga Union Elementary district to 81% in the Alum Rock Union Elementary school district. Districts with higher percentages of students enrolled in an FRPM program are concentrated in the center-north and far south areas of the county (Figure 2-9).

Figure 2-9. Percentage of free/reduced price meals in the County of Santa Clara



Source: California Department of Education, DataQuest, 2017-18[78]

CHAPTER 3 : INSURANCE COVERAGE

Despite the recent expansion of adult dental benefits covered by Medi-Cal, disparities in coverage based on age, income and educational attainment persist.

Background on Medi-Cal and Medicare insurance for oral health care

Medi-Cal and the Affordable Care Act

Medi-Cal is California's Medicaid program, financed equally by the state and the federal government. It is public health insurance with specific eligibility requirements, primarily serving low-income children, adults, and seniors. People who are not low-income may still qualify if they, for example, a have a disability, are in foster care, are pregnant, or have specific diseases. Medi-Cal is an entitlement program, meaning that if an individual qualifies, they receive benefits.[79] Medi-Cal offers dental coverage as part of its benefits in California, referred to as the Medi-Cal Dental Program or Denti-Cal, and does not require a separate enrollment process. For the purposes of this report, we will refer only to Medi-Cal, with the understanding that it includes dental coverage.

In 2009, the Medi-Cal adult dental benefit package was drastically cut due to a state budget crisis, but was partially restored in 2014. The partially restored coverage included some services such as cleaning, filling and root canal but excluded some other essential services such as gum therapy and partial dentures.[80] As of 2018, a more comprehensive adult dental benefit package has been instated that includes basic preventive, diagnostic, restorative, anterior tooth endodontic treatment, complete dentures and complete denture reline/repair services.[81] Currently there is a limit of $1800 per year for dental services using Medi-Cal, though medically necessary dental services can qualify to exceed that limit.[82] In the County of Santa Clara, there are 410,823 people who are enrolled in Medi-Cal.[22]

The Affordable Care Act (ACA) provided new funding for states to offer a dental package as part of their Medicaid program with categories of benefits falling into three categories: emergency only, limited, and extensive. California's Medi-Cal falls into the "extensive" category, meaning that it includes a comprehensive mix of services including many diagnostic, preventive, and restorative procedures.[83]

Children's dental services are included as an essential benefit in all Covered California plans, whether or not the child qualifies for Medi-Cal.[84] In general, private dental insurance coverage varies depending on the plan and provider, and generally private plans are more flexible for the recipient than Medi-Cal.

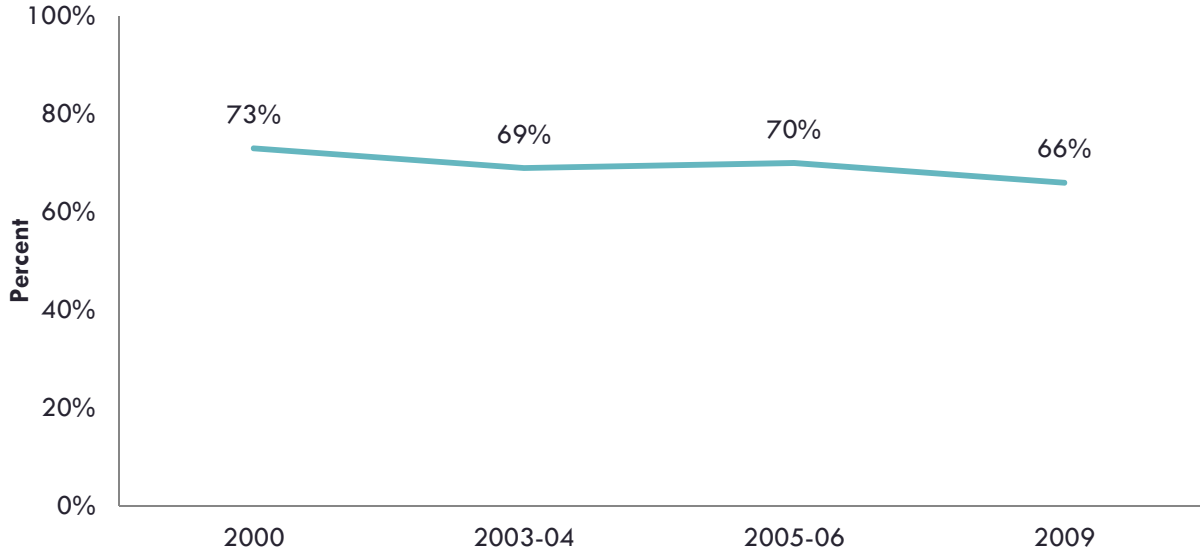
Medicare and insurance for older adults

Medicare Part A, the universal health coverage for older adults, only covers "medically necessary" dental services, which is limited to services "that are an integral part either of a covered procedure (e.g., reconstruction of the jaw following accidental injury), or for extractions done in preparation for radiation treatment for neoplastic diseases involving the jaw. Medicare will also make payment for oral examinations, but not treatment, preceding kidney transplantation or heart valve replacement, under certain circumstances"[85] Low-income older adults who have Medicare may also qualify for Medi-Cal, which can be used as a secondary insurance for services that Medicare does not cover.[86] In the County of Santa Clara, low-income older adults may also be eligible for a health plan provided through the Santa Clara Family Health Plan called Cal MediConnect. This plan combines Medicare and Medi-Cal benefits into one plan, simplifying the process of accessing services for members.[87]

Insurance coverage in the County of Santa Clara

Overall, the proportion of County of Santa Clara residents with health insurance (92%) is higher than the California (87%) and United States (88%) rates. Within the county, there are lower percentages of Latinx (85%) and African American (92%) residents with health insurance compared to Asian (95%) and White (96%) residents.[88] The percentage of residents with health insurance often does not match the percentage with dental insurance given the separation of medical and dental insurances when obtained privately or through an employer. Between 2000 and 2009, the proportion of County of Santa Clara residents with dental insurance decreased slightly from 73% to 66% (Figure 3-1).

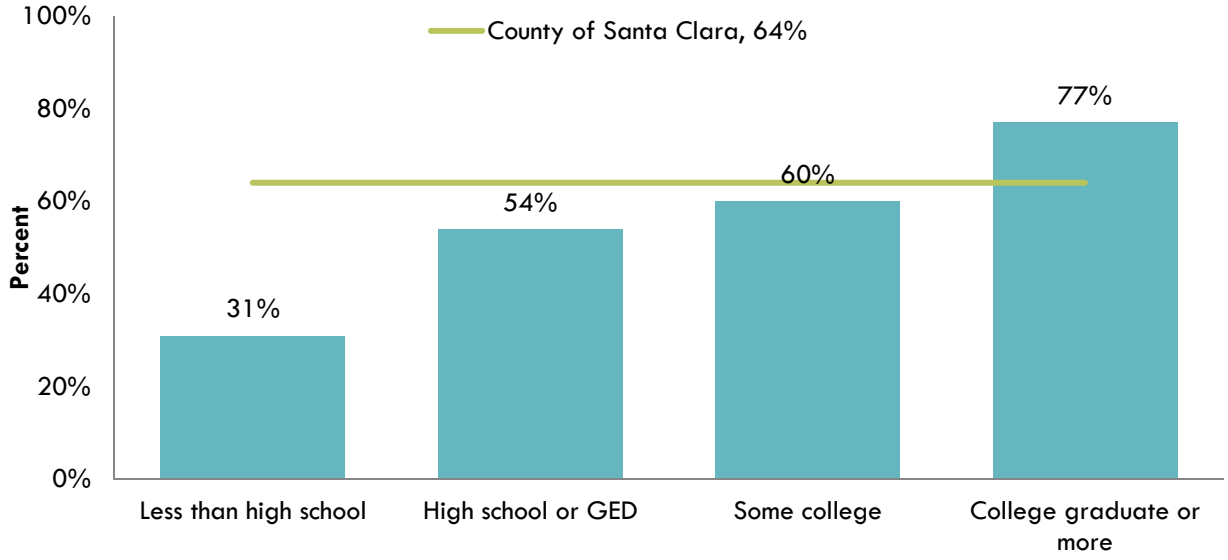
Figure 3-1. Adults with dental insurance in the County of Santa Clara



Note: Due to changes in the BRFS survey methodology in 2013-14, estimates from 2013-14 are not directly comparable to estimates from prior surveys.
Source: County of Santa Clara Public Health Department, 2000-2009 Behavioral Risk Factor Survey[89]

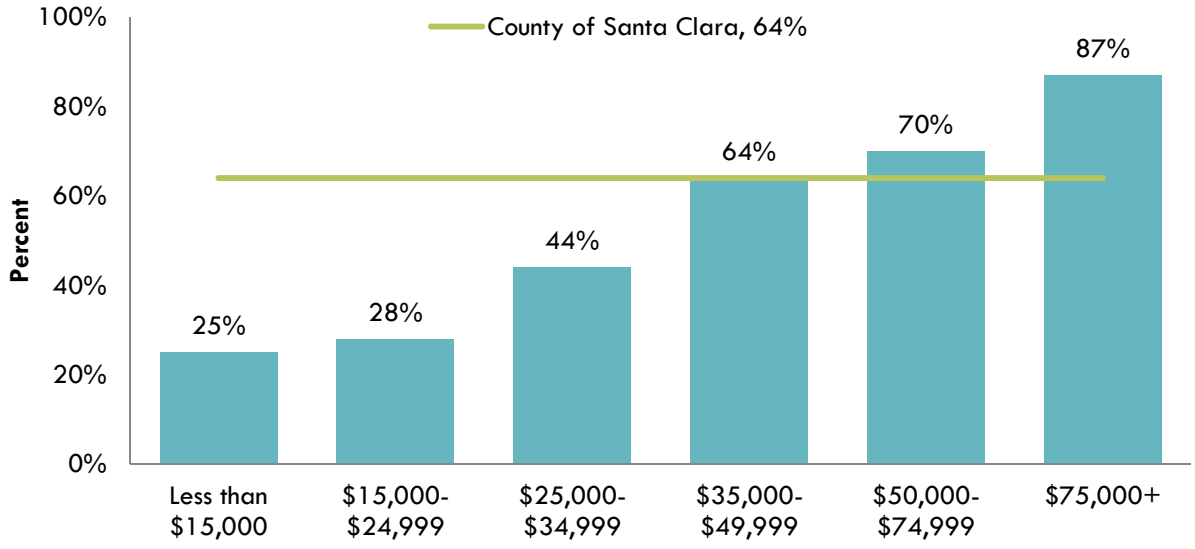
While almost two-thirds (64%) of County of Santa Clara adults have dental insurance, significant disparities exist in dental insurance coverage. Older adults have the lowest rate of dental insurance coverage (43%) compared to any other age group. In addition, as educational attainment and household income increase for adults, so do the rates of dental insurance coverage (Figures 3-2 and 3-3). Though not representative of the whole county, a recent field survey of adults supports these findings and shows that disparities by age, educational attainment, and household income persist.[21]

Figure 3-2. Adults with dental insurance in the County of Santa Clara, by educational attainment



Source: County of Santa Clara Public Health Department, 2013-14 Behavioral Risk Factor Survey[21]

Figure 3-3. Adults with dental insurance in the County of Santa Clara, by household income



Source: County of Santa Clara Public Health Department, 2013-14 Behavioral Risk Factor Survey[21]

CHAPTER 4 : ORAL HEALTH STATUS

While almost entirely preventable, more than 1 in 5 County of Santa Clara children experience a toothache, decayed teeth, or unfilled cavities, with higher rates for Latinx and Asian children compared to White children. Untreated dental disease grows worse with age, with almost half of adults having lost one or more teeth to tooth decay or gum disease. While the percentage of adults with tooth loss is lower than in California and the U.S., disparities by household income exist, with lower income residents experiencing tooth loss at higher rates than higher income residents.

Oral health status of children ages 0 to 17

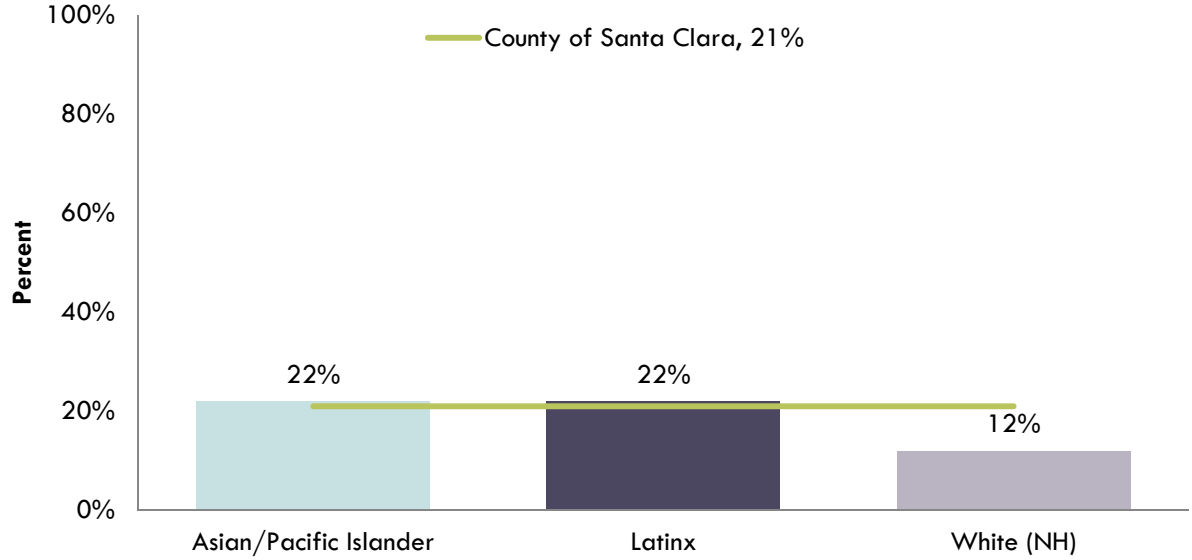
Importance of oral health for children

Early childhood caries (ECC), an infectious disease resulting from exposure to bacteria that are found in saliva and usually passed to children from caregivers and playmates, and other dental issues can have serious negative consequences through childhood and beyond.[90–92] ECC causing bacteria in infants and young children can result in both immediate and long-term oral health issues at higher rates than among children without such exposure.[10,93] Children who experience oral health problems are at higher risk for delays to intellectual development (e.g. poor speech, sub-optimal school performance, and missed school) and social development (e.g. reluctance to smile, teasing from others, and low self-esteem),[10] poor sleep habits, difficulty chewing due to pain, malnutrition/insufficient growth,[94] and vulnerability to caries and gum disease throughout life.[95] Children from lower income families with limited access to healthy foods have an increased likelihood of tooth decay, and are more likely to be Mexican-American (not other Latinx nationalities) or African American, and/or to have a mother with low educational attainment.[96–98] Early childhood caries can also have negative economic impacts on families when hospitalization, emergency department use, and general anesthetics are required, given the financial and time burden on families.[4,99]

What the data tell us

In California, untreated dental decay is experienced by 28% of children ages 3 to 5 and 29% of children ages 6 to 9.[30] In the County of Santa Clara more than 1 in 5 (21%) children ages 1 to 17 had a toothache, decayed teeth, or unfilled cavities in the past year–all generally preventable dental issues. Asian/Pacific Islander (22%) and Latinx (22%) children and youth have a higher rate of these issues compared to White (12%) children and youth (Figure 4-1).

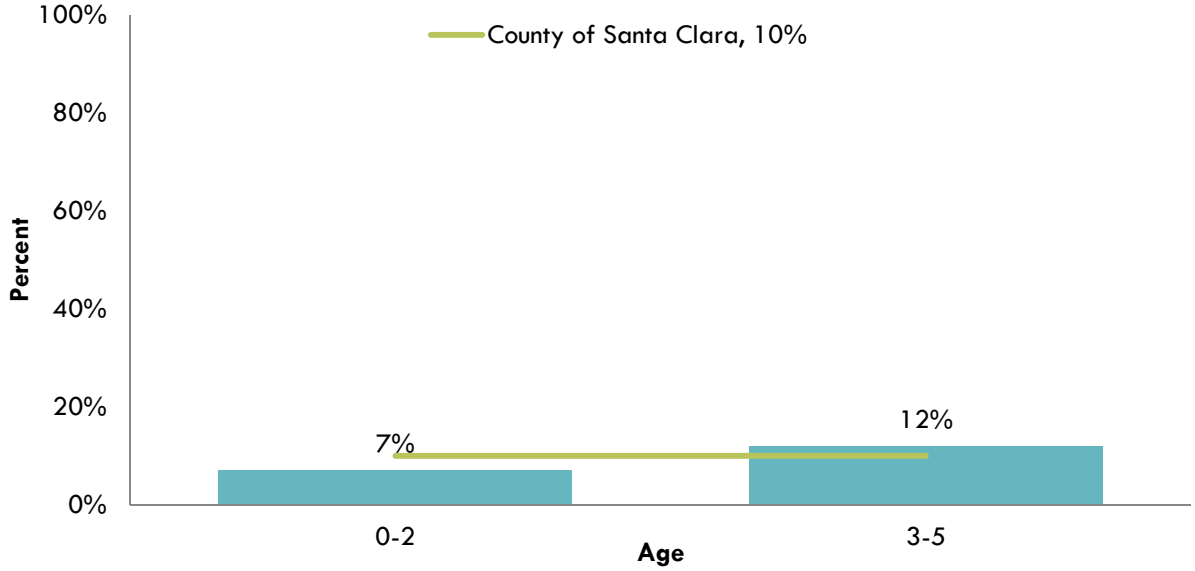
Figure 4-1. Children ages 1-17 who had a toothache, decayed teeth, or unfilled cavities in the past 12 months in the County of Santa Clara



Note: Data are not reported for African Americans due to small sample sizes.
Source: County of Santa Clara Public Health Department, 2016 Child Health Intercept Survey[28]

In a recent survey of adults who are primary caregivers of a child ages 0 to 5, 10% report that their child had a toothache when biting or chewing in the past six months; a higher percentage of children age 3-5 experience this pain (Figure 4-2). In addition, a higher percentage of children who have a parent with less than a high school education experience this pain (15%) compared to children with parents who have more education.[31] While these data are not representative of the whole county, they provide a snapshot of dental issues for many children and youth living in the County of Santa Clara.

Figure 4-2. Children ages 0 to 5 who have experienced a toothache when biting or chewing in the past six months in the County of Santa Clara

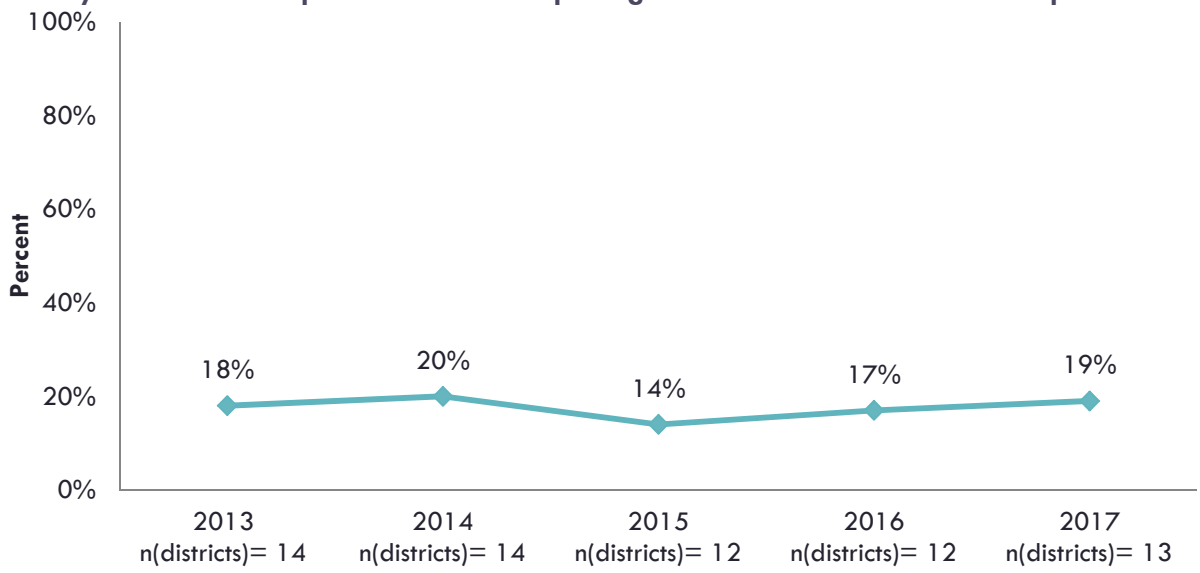


Source: County of Santa Clara Public Health Department, 2018 Adult Oral Health Intercept Survey[31]

Schools can play an important role in ensuring student health and helping to reduce dental disease among children. In 2006, the Kindergarten Oral Health Requirement (AB 1433) was enacted to help schools support student readiness and success, creating a system through which schools can identify students who suffer from untreated dental disease and help parents connect to a dental home.[100]

Out of 28 school districts in the County of Santa Clara who are eligible to participate in this assessment, approximately half completed the requirement and submitted assessment data each year from 2013-2017. Over the 5 year period, 63% of eligible students countywide participated in the assessment. The lack of full participation by school districts presents an opportunity to strengthen our partnerships with school districts in order to make oral health a priority. Figure 3-3 shows the percentage of students entering kindergarten (or 1st grade if they are new to the district) who were found to have untreated tooth decay. While this is not representative of all students entering kindergarten, an average of 6,542 assessments were completed each year. Little change can be seen in the rate of untreated decay over the 5 year period (Figure 4-3).

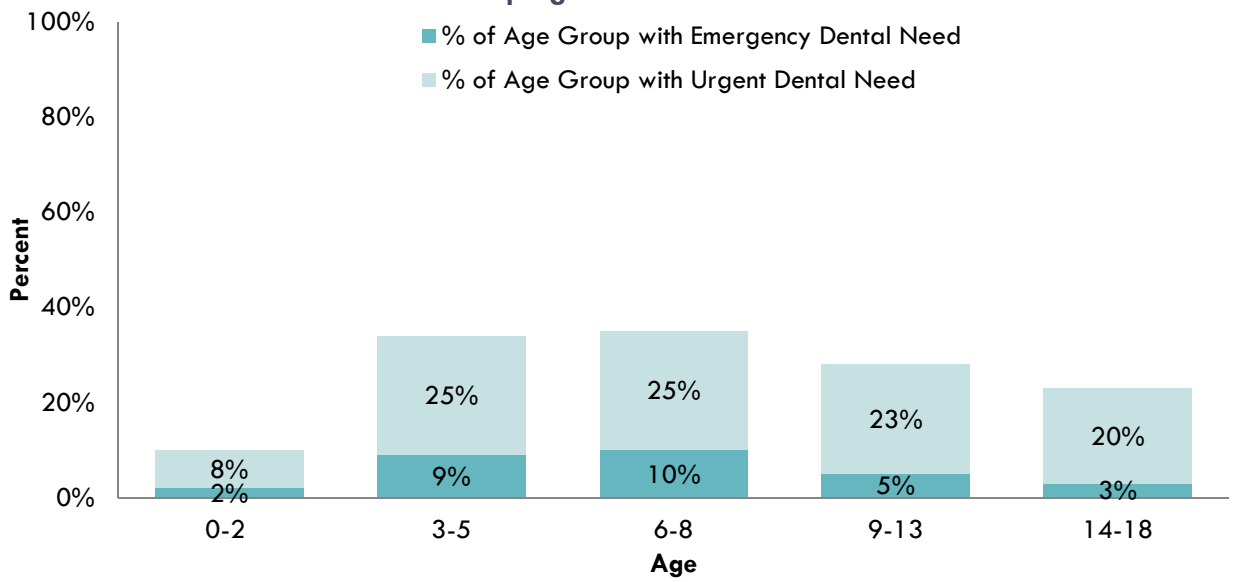
Figure 4-3. Untreated tooth decay among kindergarten and first grade students among County of Santa Clara public schools completing the oral health assessment requirement*



Note: *Based on Assembly Bill 1433 Kindergarten Oral Health Requirement
Source: California Dental Association, 2013-2017 AB1433 Kindergarten Dental Screening Data[27]

In the County of Santa Clara, a number of programs work with communities in order to provide dental screenings and referrals to treatment when necessary. One of these programs is the Healthier Kids Foundation DentalFirst program, which screens children ages 6 months to 18 years for undetected dental issues and helps them and their family access follow-up care if needed. The program screens children and youth at many different sites, including schools, youth centers, and other community programs. While results are not representative of all children and youth in the County of Santa Clara, the program has a wide range, screening 19,419 children in Fiscal Year (FY) 2017-2018. This is an increase from 8,278 screened in FY 2014-2015.[101] In FY 2017-2018, children ages 3 to 8 experienced the highest rates of emergency or urgent dental need at 35% (Figure 4-4).

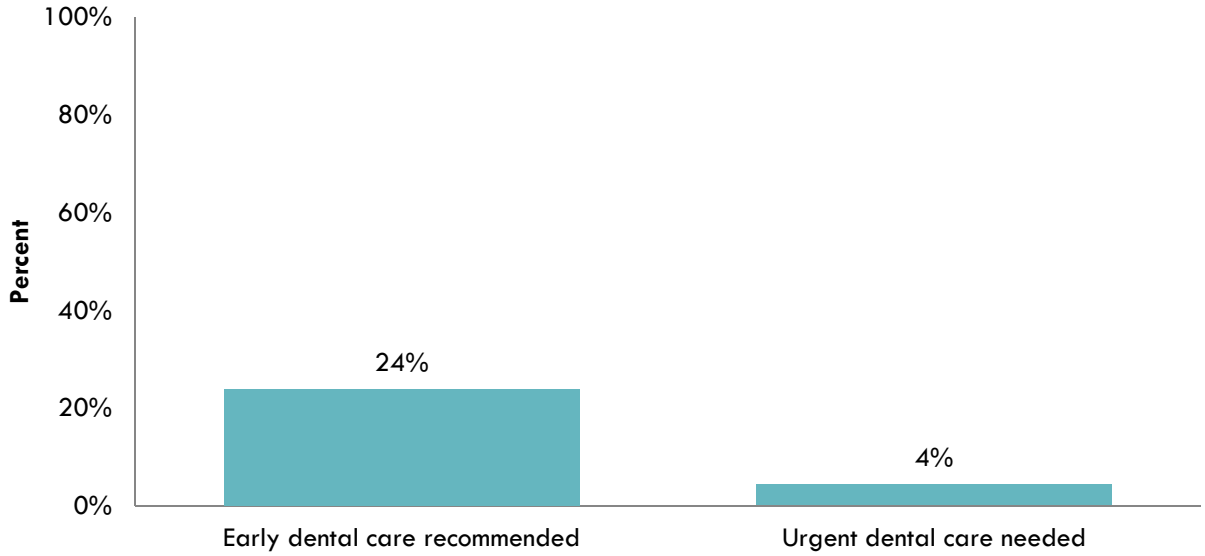
Figure 4-4. Children with emergency and urgent dental needs among those screened by the Healthier Kids Foundation DentalFirst program



Note: Urgent needs include mild to moderate cavities, gum disease, soft tissue lesion, recent trauma, and ectopic eruption. Emergency needs include infection, pain, and severe dental caries.[102]
Source: Healthier Kids Foundation, DentalFirst program, dental screening data FY 2017-2018[103]

The Santa Clara County Dental Society Foundation actively participates in the annual Give Kids a Smile program, mobilizing dentists and other dental staff (dental office staff and dental hygiene students) to provide screenings to children. In 2018, 62 dentists and 77 other dental staff donated their time to participate in this program. Through this initiative, oral health screenings and referrals for those needing urgent care were provided at 48 schools and 7 after-school locations to 5,551 elementary and middle school students. The grades of the students ranged from pre-kindergarten to 8th, with the majority of students in the elementary school grades. Overall, a quarter of children screened needed early dental care and 4% needed urgent dental care (Figure 4-5). In addition, the program provided 345 fluoride varnish applications, a preventive treatment, in one school district.[104] While these data are not representative of the County of Santa Clara overall, they show the extent of the need in different school districts.

Figure 4-5. Dental screening results among students screened by the Give Kids a Smile program



Note: "Early dental care recommended" is defined as a child having caries without pain or infection or a child who would benefit from sealants/further evaluation. "Urgent dental care needed" is defined as when a child has pain, infection, swelling, or soft tissue lesions.
Source: Santa Clara County Dental Society Foundation, Give Kids a Smile Screening Results, 2018[104]

Oral health status of adults ages 18 to 64

Importance of oral health for adults

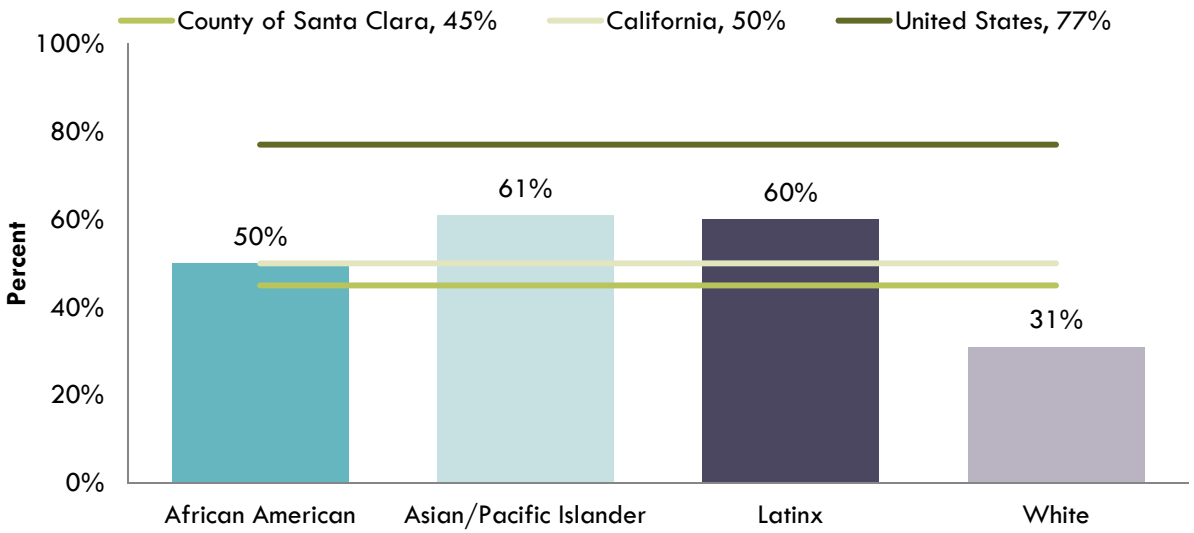
Poor oral health has consequences beyond those directly related to dental issues. Periodontal disease has been linked to many systemic health conditions such as atherosclerotic vascular disease, pulmonary disease, diabetes, osteoporosis, and kidney disease. While it is not fully understood whether there is a causal link between dental disease and all of these systemic conditions, it is understood that they are connected.[105] In addition, the mouth is a site of entry for infections that can affect overall wellbeing. When dental and gum disease are present, it may be easier for other infections to enter the body. Finally, oral health is also related to quality of life. Poor oral health can affect eating, speech, and other functions, leading to negative consequences on self-esteem, social interaction, and education and career achievement.[10]

What the data tell us

In the County of Santa Clara, 45% of adults ages 45 to 64 have had one or more teeth removed due to decay or gum disease, which is lower than both the United States (77%) and California (50%) baselines, but disparities exist (Figure 4-5). A higher proportion of African American, Asian/Pacific Islander, and Latinx residents have experienced tooth extraction compared to White residents. (Figure 4-6). In addition, there is a clear gradient across household income, with a higher percentage of lower income residents having had one or more permanent teeth removed

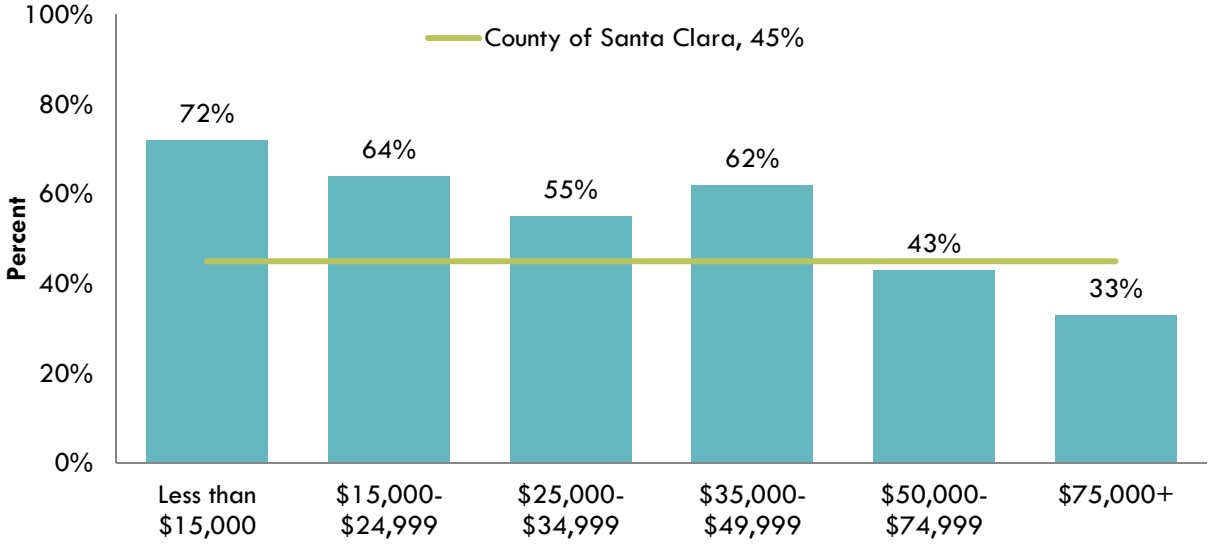
due to decay or gum disease compared to higher income residents (Figure 4-7). Though not directly comparable to the most recently available data (2013-2014), rates of tooth extraction varied between 39% and 46% from 2000-2009, indicating that little change over time has occurred.[21]

Figure 4-6. Adults 45-64 who have had one or more permanent teeth removed due to decay or gum disease in the County of Santa Clara, California, and the U.S., by race/ethnicity



Note: Due to changes in the BRFS survey methodology in 2013-14, estimates from 2013-14 are not directly comparable to estimates from prior surveys.
Source: County of Santa Clara Public Health Department, 2013-14 Behavioral Risk Factor Survey;[21] Gadgil M et al, Status of oral health in California: Oral disease burden and prevention 2017[30]

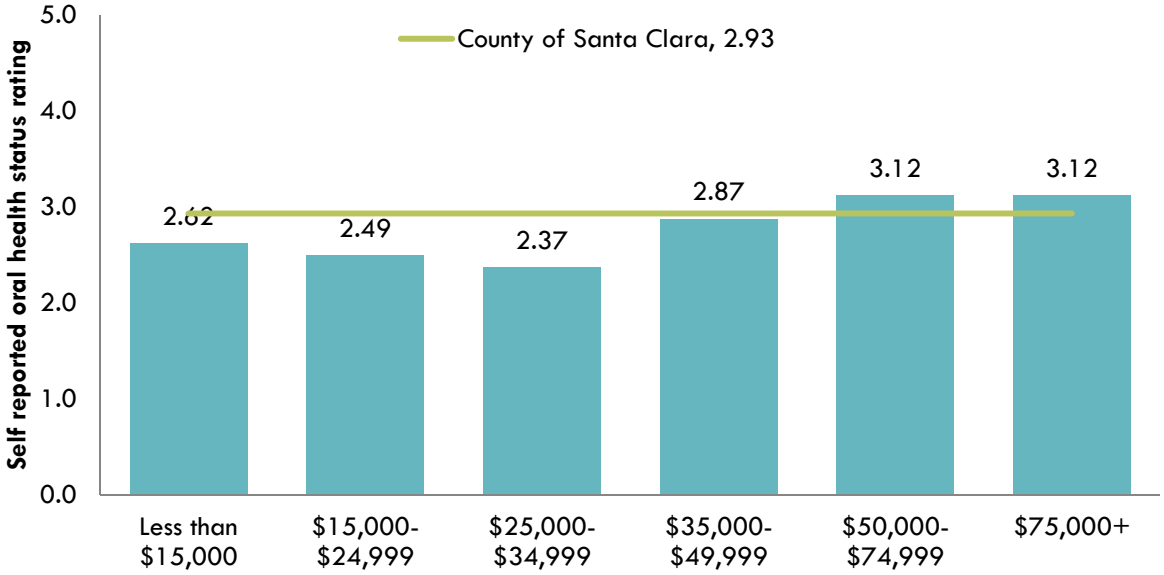
Figure 4-7. Adults 45-64 who have had one or more permanent teeth removed due to decay or gum disease in the County of Santa Clara, by household income



Note: Due to changes in the BRFS survey methodology in 2013-14, estimates from 2013-14 are not directly comparable to estimates from prior surveys.
Source: County of Santa Clara Public Health Department, 2013-14 Behavioral Risk Factor Survey[21]

In the County of Santa Clara, adults generally report their oral health status as fair to good, with the average rating being 2.93 (on a scale of 1-poor to 5-excellent). Similar to the trend that can be seen above in Figure 4-8, residents with a higher household income report their oral health as better compared to those with a lower household income (Figure 4-8).

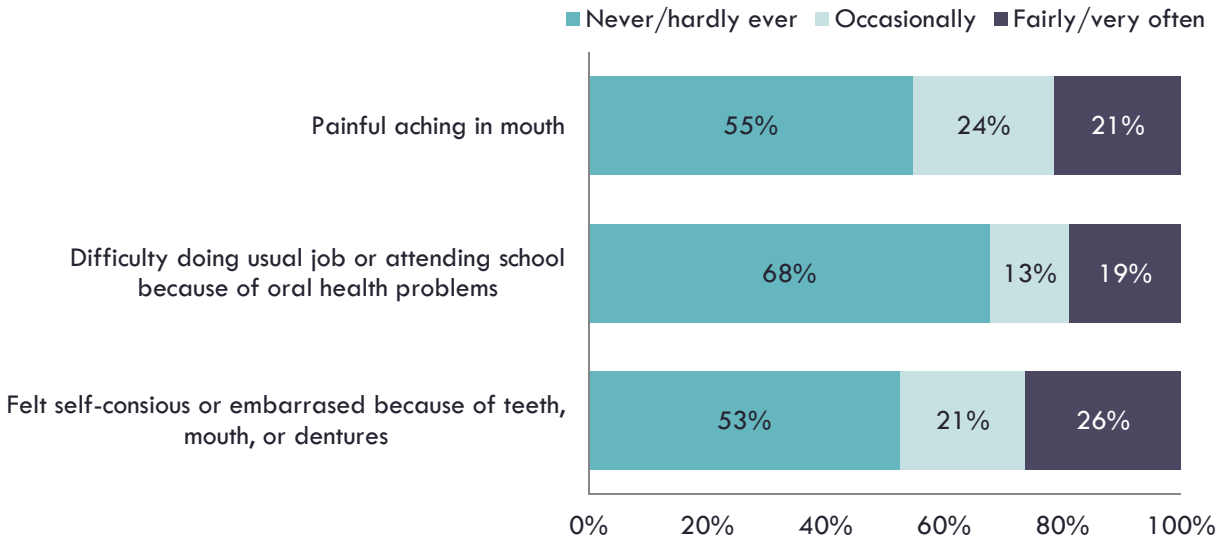
Figure 4-8. Adults' 18 to 64 perceived oral health status in the County of Santa Clara



Source: County of Santa Clara Public Health Department, 2018 Adult Oral Health Intercept Survey[31]

While self-rated oral health can encompass many aspects of oral health and dental care, negative aspects such as pain and the effect dental issues have on daily functioning may be especially important. Many residents of the County of Santa Clara occasionally or often experience pain (45%), have difficulty doing a regular job or attending school (32%), and feel self-conscious or embarrassed due to their oral health status (47%) (Figure 4-9). Overall, residents in the county do not perceive their oral health to be as good as it could be and many experience pain and other oral health symptoms that interfere with their daily lives.

Figure 4-9. Frequency of oral health issues experienced by adults in the past year in the County of Santa Clara



Source: County of Santa Clara Public Health Department, 2018 Adult Oral Health Intercept Survey[31]

Oral health status of adults ages 65 and older

Importance of oral health for older adults

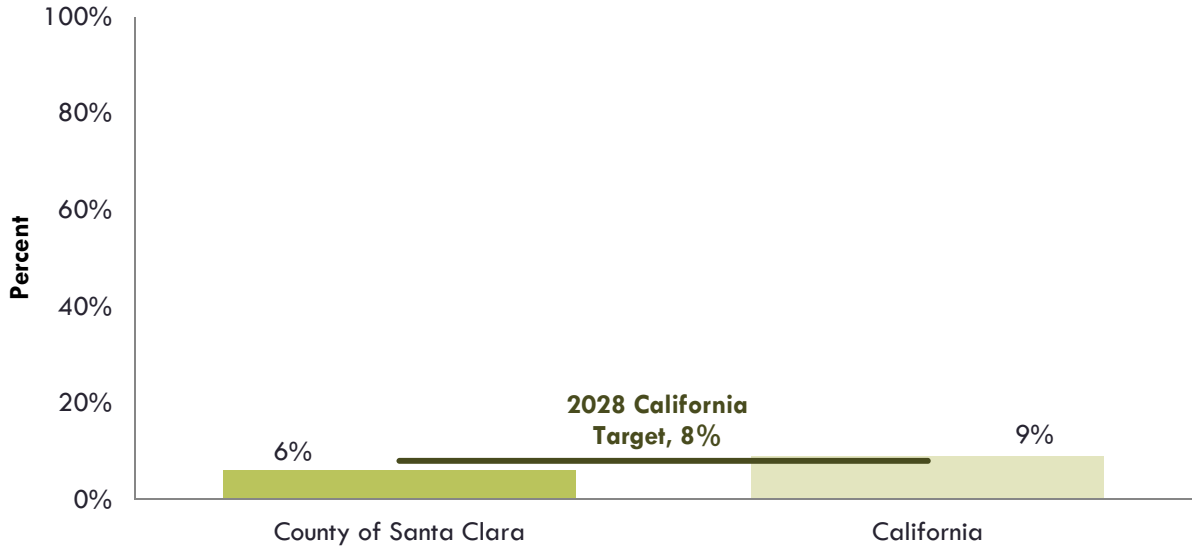
Oral health problems, such as dental caries, periodontal disease, complete tooth loss, dry mouth, ill-fitting dentures, and oral cancers are commonly reported among the older adult population.[10,52] In California, half of older adults in skilled nursing facilities and one-third of older adults in the community have untreated tooth decay, and many have lost all of their teeth.[52] Tooth loss can affect quality of life (social, psychological, and physical) and ability to chew, which can affect nutrition and overall health.[106,107] It can also have deleterious economic effects on older adults who are otherwise able to work by negatively impacting their employability.[108] In addition, periodontal disease can affect overall health and well-being in this population as the oral bacteria and inflammation have been found to be related to, and likely increases the risk of developing, cardiovascular disease, autoimmune disease, and diabetes.[109–111] Fortunately, evidence suggests that caries and periodontal disease can be prevented and treated in this population.[112]

What the data tell us

Six percent (6%) of County of Santa Clara residents ages 65-74 experience complete tooth loss due to tooth decay or gum disease – slightly lower than the percentage among California residents of the same age (9%), and below the 2028 California target (8%) (Figure 4-10). Though not generalizable to the county overall, a recent field survey suggests that 44% of older adults have lost between 1 and 5 teeth, 26% have lost 6 or more, and 8% have lost all of their

teeth due to gum disease or tooth decay.[31] Given the growing aging population in the County of Santa Clara, we expect increases in the burden of oral disease for older adults.

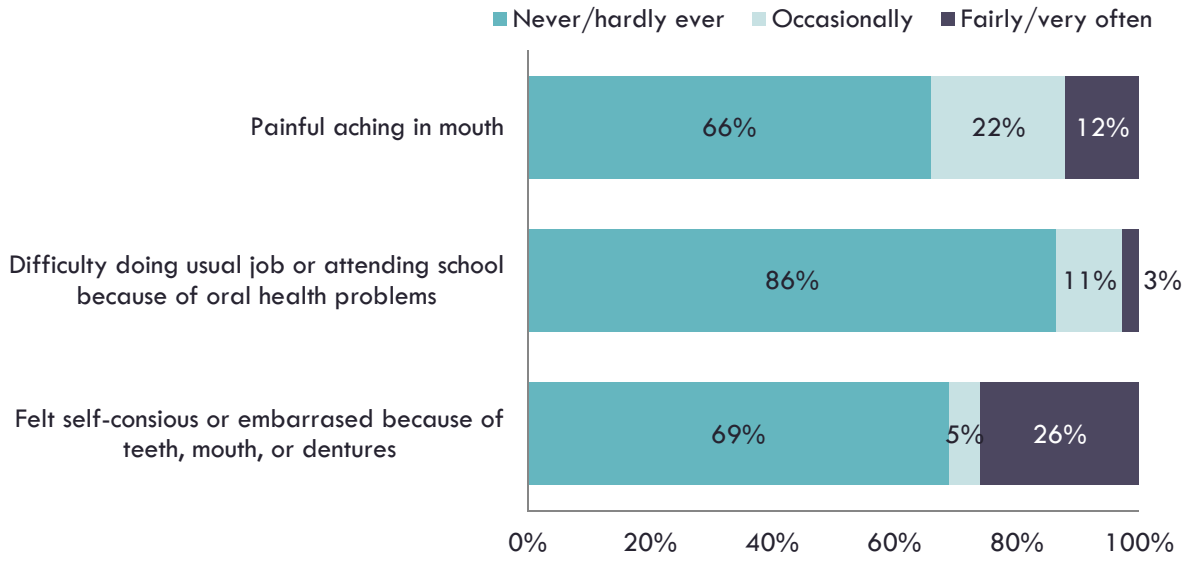
Figure 4-10. Adults age 65-74 who lost all teeth due to tooth decay or gum disease in the County of Santa Clara and California



Source: County of Santa Clara Public Health Department, 2013-14 Behavioral Risk Factor Survey[21]; California Department of Public Health, California Oral Health Program, California Oral Health Plan 2018-2028[24]

The recent field study also shows that adults age 65 and older rate their overall oral health status on average as 3.26 on a scale from 1 (poor) to 5 (excellent), which is higher than adults ages 18 to 64 rate their oral health status on average (2.93).[31] The majority of older adults hardly ever or never experience pain (66%) or difficulty doing a job or attending school (86%). Though, 26% of older adults report feeling self-conscious because of their teeth, mouth, or dentures fairly or very often, something that is important given the increases in isolation and loneliness that often happen as adults age (Figure 4-11).

Figure 4-11. Frequency of oral health issues experienced by older adults in the past year in the County of Santa Clara



Source: County of Santa Clara Public Health Department, 2018 Adult Oral Health Intercept Survey[31]

Community perspectives on connecting oral health practices to status

Oral health status is determined by many factors, which fall into two categories: 1) how well individuals take care of their oral health on a regular basis, and 2) utilization of oral health care (which will be discussed in Chapters 5-7). Perceptions and behaviors concerning oral health hygiene, nutrition, and tobacco, all factors that influence oral health status, were discussed with community members in focus groups.[113]

While most focus group participants knew the best practices of oral health hygiene, they report only partially engaging in these practices. When focus group participants were asked what they believed to be best practices of oral health hygiene, the majority said they should be brushing 2-3 times a day and/or after meals, as well as flossing every day. Many participants also mentioned that using mouthwash is an important part of oral hygiene routine. Most focus group participants report brushing their teeth at least once a day – either in the morning after they eat breakfast or at night before they go to bed. Fewer participants said they regularly floss, and several participants said they only floss when there is an immediate need, such as something stuck in their teeth.

In every focus group, sugar was cited as being very detrimental to oral health. Candy and desserts were mentioned most frequently as foods to avoid, with sugary sodas and juices mentioned less frequently. In about half of the focus groups, participants mentioned that coffee is bad

> "[My daughter] likes candy, but I tell her if you eat a lot of sweets, you'll get cavities and your teeth will fall out…"
> -Focus Group Participant

for your teeth. The majority of focus group participants who cited sugar as being bad for their teeth also claimed to limit their sugar consumption for this reason. Some participants said when they eat sugary foods or drink sugary drinks that they make sure to brush immediately afterwards to mitigate the negative impact. None of the participants mentioned any foods or drinks that improve oral health.

CHAPTER 5 : UTILIZATION OF CARE BY CHILDREN AGES 1 TO 18

Despite guidelines that call for regular dental visits, which include exams and preventive care,[114] children ages 0 to 5 and children with Medi-Cal insurance visit the dentist at lower rates than children and youth overall. It is important to ensure that all children have a dental home, which can increase utilization. Programs such as FIRST 5, Healthier Kids Foundation, Head Start, and Early Head Start are working to address these issues in the County and help children access needed dental services.

Importance of regular dental care

The first dental exam for young children is recommended at the time that the first tooth emerges and no later than when the child is 12 months old. Waiting until a child is 2 or 3 years old can lead to an increased likelihood of needing restorative and emergency dental care.[114] In addition, it is recommended that families establish a dental home, an ongoing relationship between a dentist and patient that is inclusive of all oral health care. Children with a dental home are more likely to receive preventive and routine dental care.[115] Access to care and availability of dentists who can see young children is an important contributing factor supporting oral health among children. Other issues that may need to be addressed in order to promote early utilization of dental care include: a lack of awareness of risk factors and the importance of preventive oral health care at a young age, differing cultural values, prior negative experiences with dentists, and low perceived value of care.[12,116]

As children age, it is important that they see a dentist regularly for annual visits and preventive care. Dental sealants can be applied to permanent molar teeth when they appear (between the ages of 6 and 14), and they have been found to be effective at preventing and arresting dental caries on molars and can minimize the progression of caries.[117] Sealants are 88% effective in preventing the most common form of dental decay in school-age children and school-based sealant programs are one of the most effective community-based oral health interventions.[56]

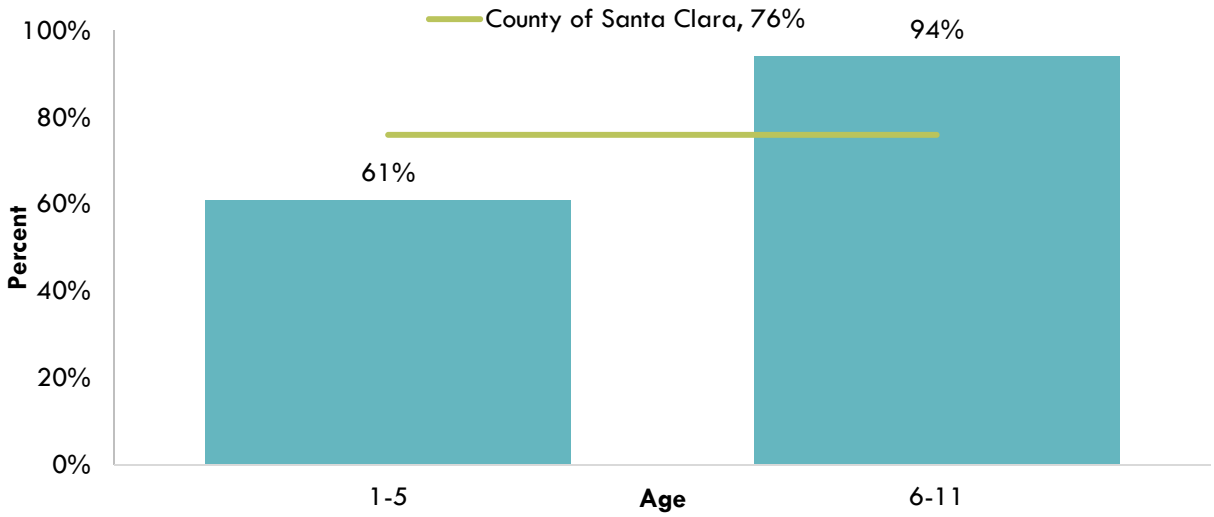
Fluoride varnish, a treatment that is applied directly to teeth, can help prevent the development of dental caries[118] and is recommended every 3 to 6 months starting when teeth emerge.[119] Fluoride varnish applications can be done by a dental provider (dentists, hygienists, and assistants) and by other healthcare professionals outside the dental setting.

What the data tell us

Dental services and care received

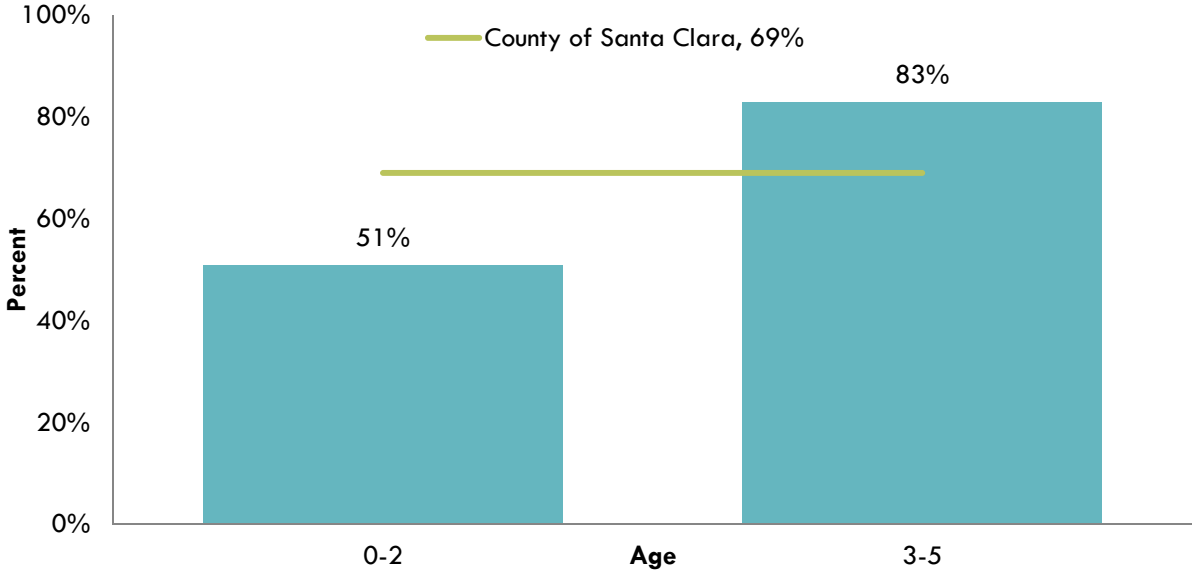
In the County of Santa Clara, children ages 6 to 11 have a higher rate of having had a dental visit in the past 12 months compared to children ages 1 to 5 (Figure 5-1), with the very youngest children ages 0-2 having the lowest rate of visiting the dentist in the past 12 months (Figure 5-2). Disparities exist among races as well, with fewer African American (79%) and Latinx (79%) middle and high school students receiving a dental checkup in the past 12 months compared to Asian/Pacific Islander (87%) and White (86%) students, with a countywide rate of 83% for this age group.[120]

Figure 5-1. Children ages 1-11 who reported visiting the dentist in the past 12 months in the County of Santa Clara



Source: County of Santa Clara Public Health Department, 2013-14 Behavioral Risk Factor Survey[21]

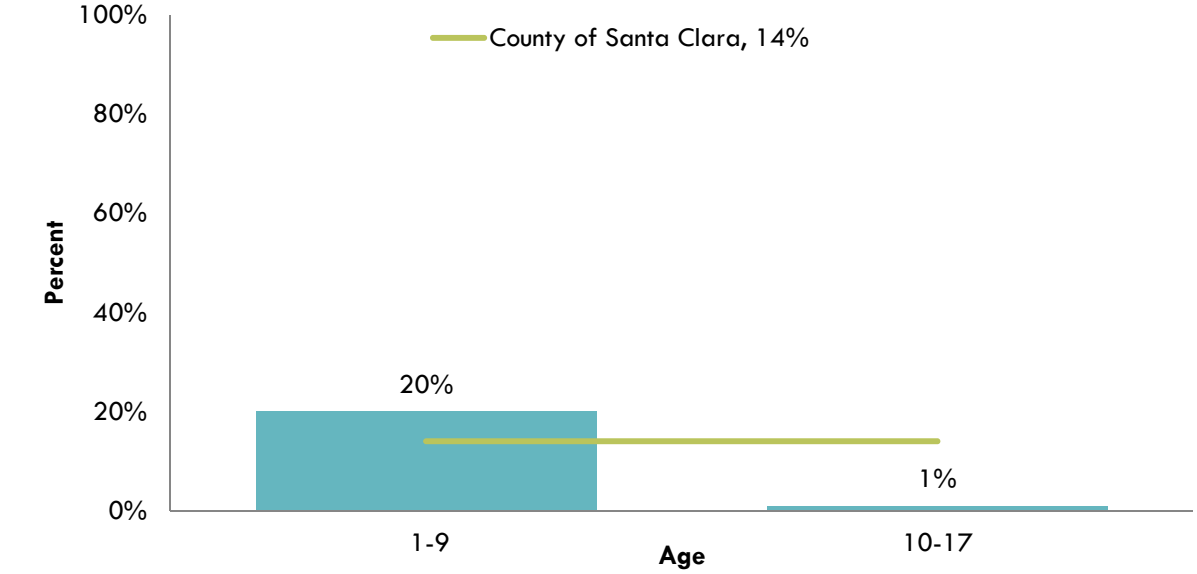
Figure 5-2. Children ages 0-5 who reported visiting the dentist in the past 12 months in the County of Santa Clara



Source: County of Santa Clara Public Health Department, 2018 Adult Oral Health Intercept Survey[31]

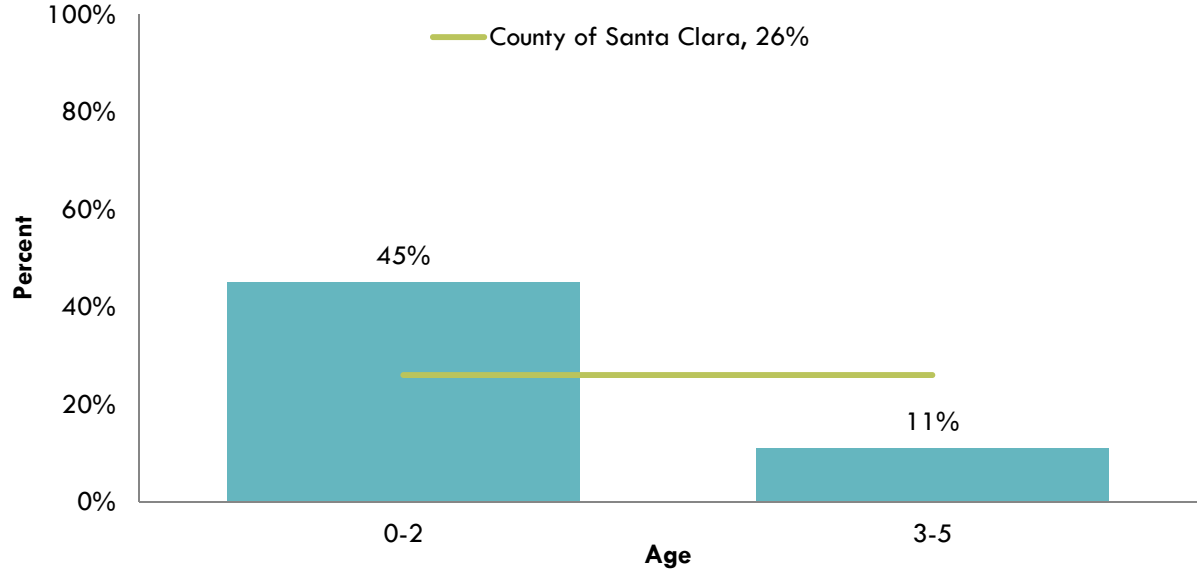
One-fifth (20%) of children ages 1-9 have never visited the dentist, despite guidelines that all guidelines that all children should visit the dentist for the first time by 12 months, a much higher percentage than those aged 10-17 according to a County of Santa Clara field survey completed in 2016 (Figure 5-3). When considering only children ages 0 to 5, a much higher percentage of those ages 0 to 2 have never visited a dentist compared to those 3 to 5 (Figure 5-4). Children ages 0 to 1 have an even higher rate of never having visited the dentist at 56%.[31] During focus groups with parents,[113] it was found that there was confusion about when a child's first dental visit should be. A number of parents reported that they did not take their children to a dentist within their first year – either because they did not know they were supposed to or because they believed their child was too young to let a dentist examine them. On average, most parents reported bringing in their child between ages 2 to 4.

Figure 5-3. Children ages 1-17 who have never visited a dentist/dental clinic in the County of Santa Clara



Source: County of Santa Clara Public Health Department, 2016 Child Health Intercept Survey[28]

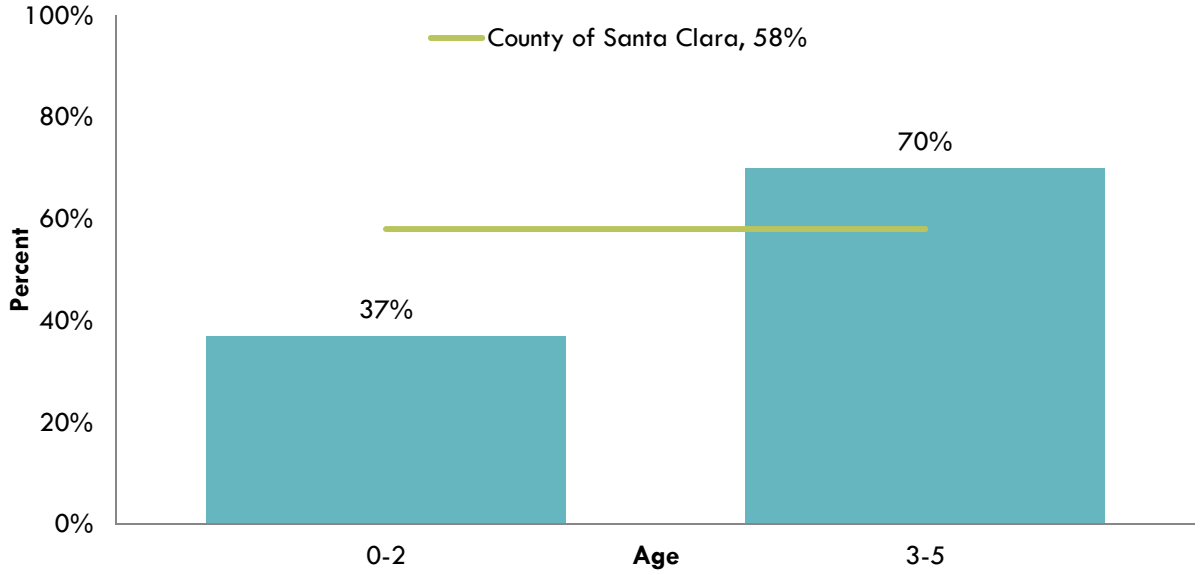
Figure 5-4. Children ages 0-5 who have never visited a dentist/dental clinic in the County of Santa Clara



Source: County of Santa Clara Public Health Department, 2018 Adult Oral Health Intercept Survey[31]

A recent field survey of County of Santa Clara residents found that 58% of children ages 0-5 have a dental home, though fewer children ages 0 to 2 have a dental home compared to those ages 3 to 5. Given the increased likelihood of receiving preventive and routine dental care when a child has a dental home,[115] is will be important to work towards all young children in the county having a dental home.

Figure 5-5. Children ages 0-5 who have a dental home in the County of Santa Clara

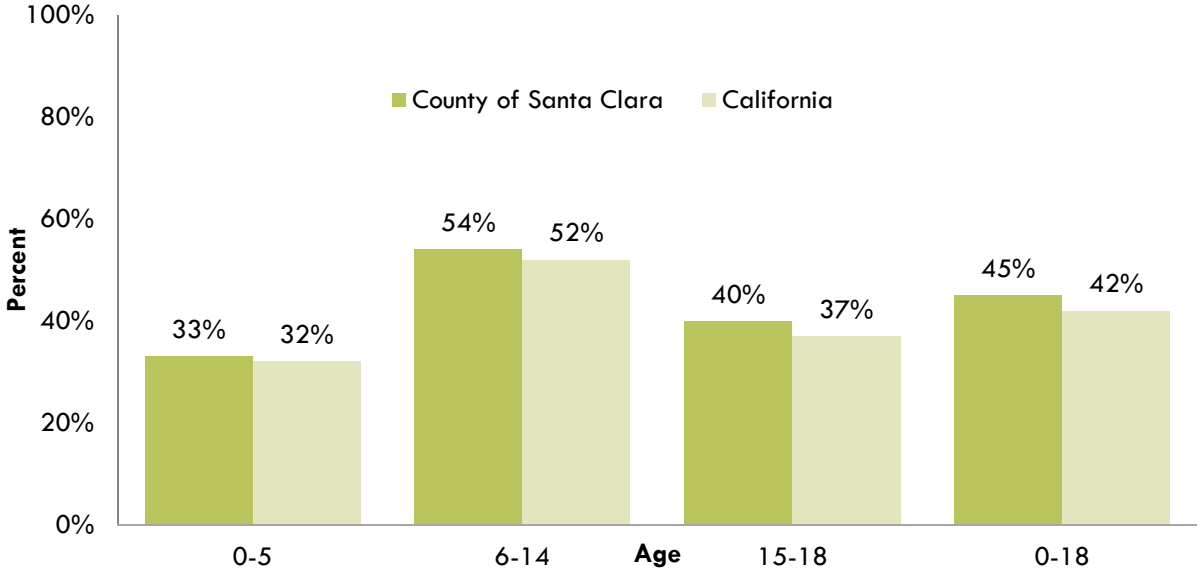


Note: *Dental home is defined here as 1) having a dentist/dental clinic that they feel comfortable taking their child to, and 2) having a child who has visited that specific dentist/dental clinic at least one time each year for two years.
Source: County of Santa Clara Public Health Department, 2018 Adult Oral Health Intercept Survey[31]

Preventive, annual, and sealant services for children on Medi-Cal

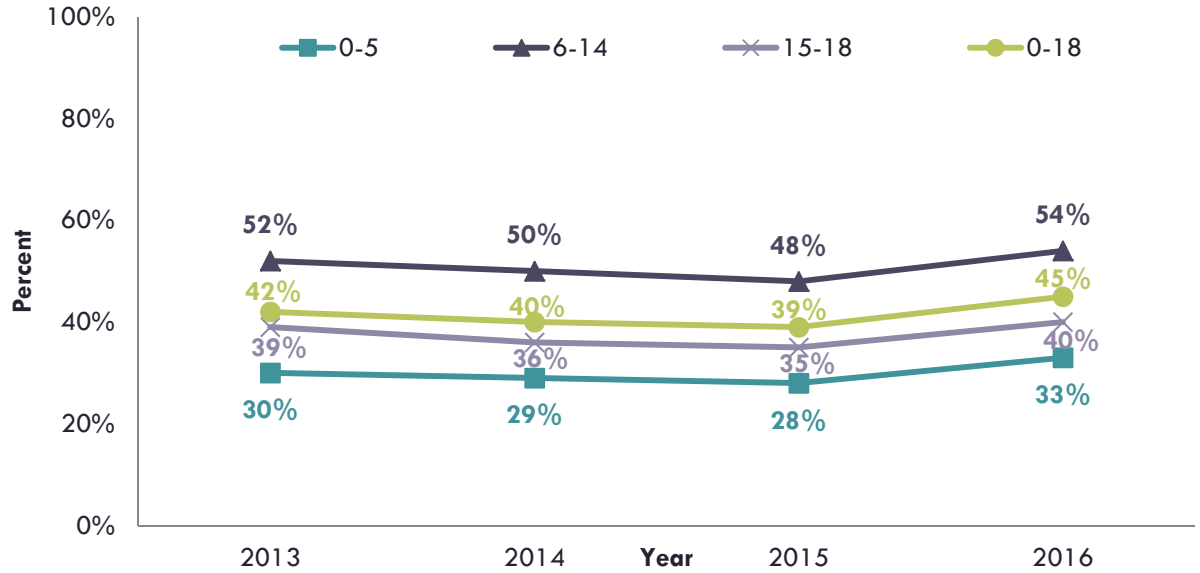
Having Medi-Cal insurance is a signifier of low-income status, and therefore can help identify some of the most vulnerable children. Preventive dental services that are covered by Medi-Cal include examinations, x-rays, and teeth cleanings. The rates of preventive dental services received by Medi-Cal beneficiaries ages 0 to 18 in the County of Santa Clara closely mirror those for California as a whole. The age group with the highest percentage of children receiving preventive services is children ages 6 to 14, and the lowest percentage is among ages 0 to 5 (Figure 5-6). The percentage for each age group has changed very little over time (Figure 5-7). The 2020 California target for preventive visits for children and youth ages 0 to 20 with Medi-Cal is 48%.

Figure 5-6. Medi-Cal beneficiaries ages 0-18 who received preventive dental services in the County of Santa Clara and California, by age group



Source: Department of Health Care Services, Medi-Cal Dental Services Division, Dental Utilization Measures and Sealant data 2016[33]

Figure 5-7. Medi-Cal beneficiaries ages 0-18 who received preventive dental services in the County of Santa Clara, by age group and year

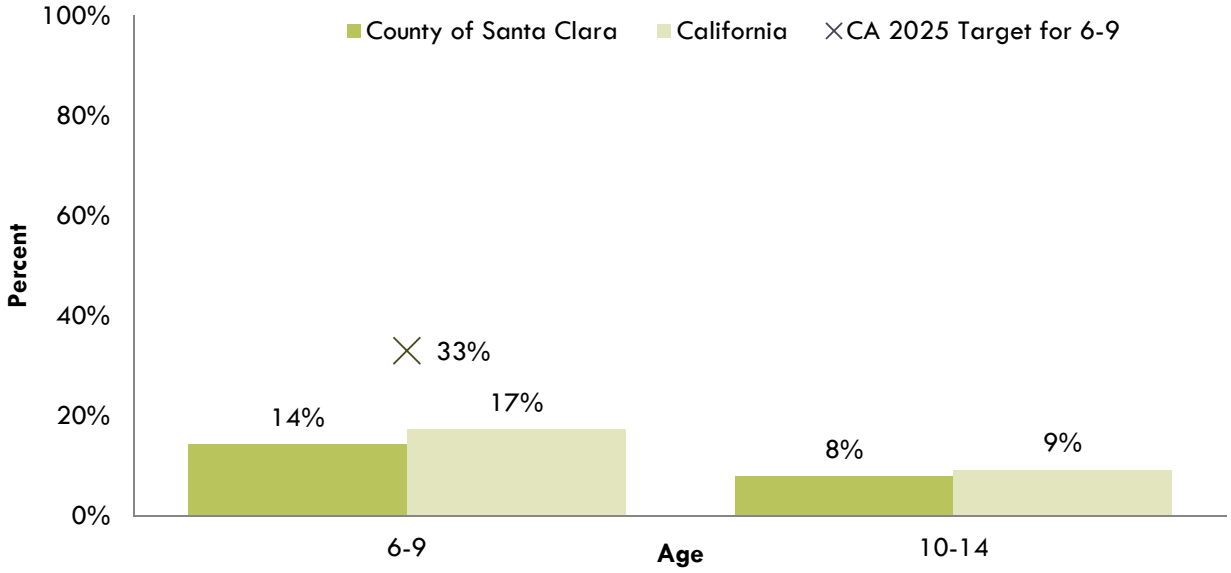


Source: Department of Health Care Services, Medi-Cal Dental Services Division, Dental Utilization Measures and Sealant data 2013-2016[32]

Applying dental sealants is a preventive procedure done as children's permanent molars come in (usually between ages 6 and 14) that is highly effective at preventing caries. Children ages 6 to 9 and 10 to 14 who are Medi-Cal beneficiaries in the County of Santa Clara have a slightly lower rate of receiving dental sealants compared to the rate in California among the same age groups. While the rate of sealant application among all children (including those with private

insurance or those who already have a sealant) county-wide is unknown, the 2025 California target is 33% for children ages 6-9 to have a dental sealant on one or more molars (Figure 5-8), which is significantly higher than the current percentage for children ages 6 to 9 on Medi-Cal.

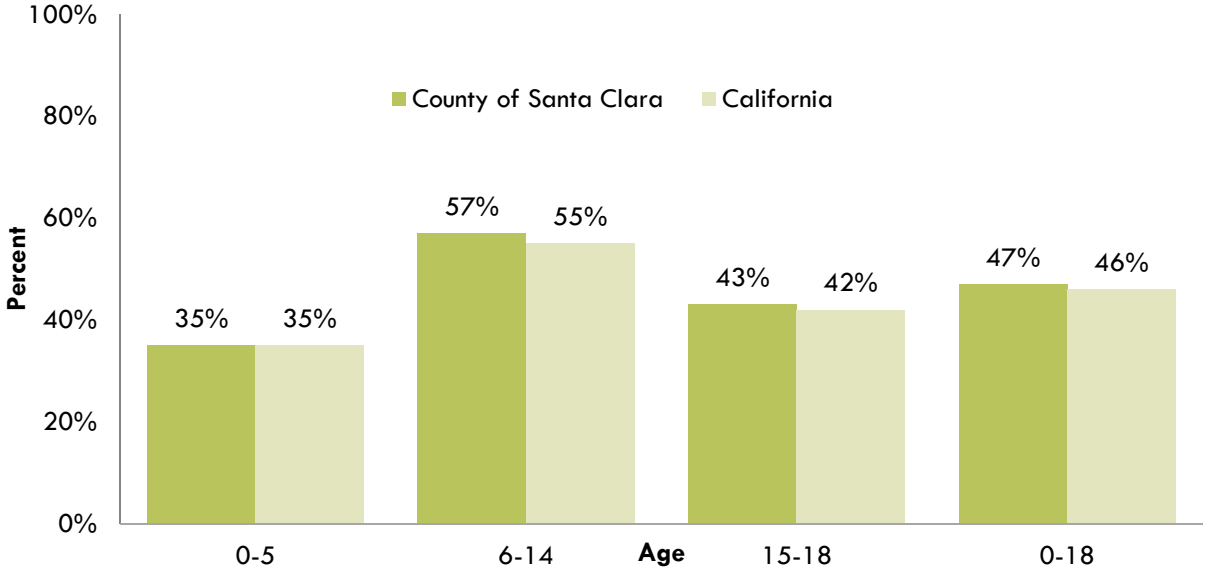
Figure 5-8. Medi-Cal beneficiaries ages 6-14 who received sealants in the County of Santa Clara and California, by age group



Source: Department of Health Care Services, Medi-Cal Dental Services Division, Dental Utilization Measures and Sealant data 2016;[33] California Department of Public Health, California Oral Health Program, California Oral Health Plan 2018-2028[24]

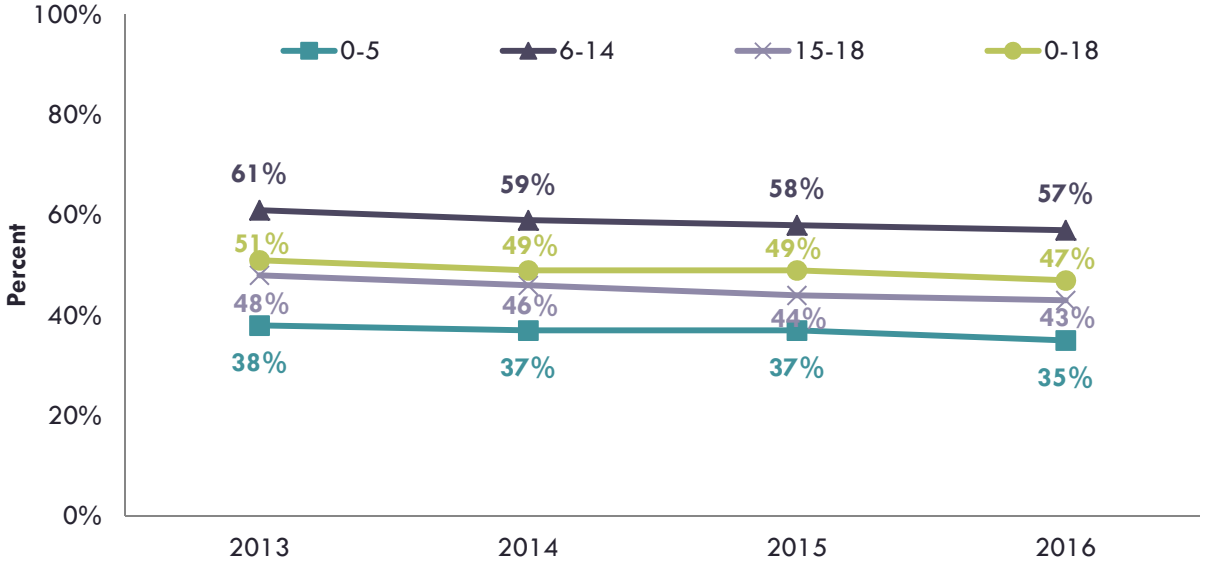
Similar to preventive services for children who have Medi-Cal, children ages 6 to 14 in the County of Santa Clara have the highest rate of annual dental visits, and children ages 0 to 5 have the lowest rate (Figure 5-9). This disparity has persisted over time and rates of overall annual visits for children who have Medi-Cal in the county have decreased slightly since 2013 (Figure 5-10).

Figure 5-9. Medi-Cal beneficiaries ages 0-18 who received an annual dental visit in the County of Santa Clara and California, by age group



Source: Department of Health Care Services, Medi-Cal Dental Services Division, Dental Utilization Measures and Sealant data 2016[33]

Figure 5-10. Medi-Cal beneficiaries ages 0-18 who received an annual dental visit in the County of Santa Clara, by age group and year



Source: Department of Health Care Services, Medi-Cal Dental Services Division, Dental Utilization Measures and Sealant data 2013-2016[32]

Program-specific referrals and utilization

Programs such as FIRST 5, Healthier Kids Foundation, and Head Start have contributed to dental service utilization in the County of Santa Clara. In partnership with the Healthier Kids Foundation, FIRST 5 works with children ages 0 to 5 to provide dental screenings, referrals for necessary dental treatment, and connections to a dental home. As a result of their efforts, 8,591 children

ages 0 to 5 received dental screenings between July 2015 and June 2017. Twenty-six percent (26%) of those screened had identified dental issues, and just over half (52%) of those who needed follow-up received the necessary services (Table 5-1).

Table 5-1. Children ages 0-5 receiving a dental screen as a part of the FIRST 5 and Healthier Kids Foundation initiative

	FY 15/16	FY 16/17	Total
Children screened	**4,718**	**3,873**	**8,591**
0-2 years (%)	12%	8%	10%
3-5 years (%)	88%	91%	89%
Children with identified dental issues (%)	**1108 (23%)**	**1102 (28%)**	**2210 (26%)**
Connection to dental services for children with identified dental issues			
Received dental services (%)	64%	57%	52%
Did not receive services (unable to contact, moved out of county, parent refused follow-up) (%)	12%	21%	16%
Still in follow-up process at close of reporting period (%)	24%	22%	23%

Note: Percentages may not add up to 100% due to rounding
Source: FIRST 5 of Santa Clara County; Oral Health Continuum of Care System; 2015-2017[121]

FIRST 5 of Santa Clara County also financially supports dental services for children at clinics that are part of the Children's Dental Group and Gardner Family Health Network. Through this support, these clinics are able to provide dental care to children ages 0 to 5. Between July 2016 and June 2017, three clinics supported by FIRST 5 were able to serve 13,346 children ages 0 to 5 and provide 28,661 preventive procedures. In addition to preventive services, 26,479 treatment services were provided to children ages 0 to 5, which included crowns, baby root canals, fillings, sedation, extractions, and space maintenance (Table 5-2).

Table 5-2. Children ages 0-5 served and receiving preventive and treatment procedures as part of a visit at a FIRST 5 partner pediatric dental clinic

	Western Dental Children's Dental Center of San Jose	Western Dental Children's Dental Center of Sunnyvale	Gardner South County Health Center	Total
Children served (n)	**8,112**	**4,401**	**833**	**13,346**
0-2 years old (%)	23%	27%	21%	24%
3-5 years old (%)	77%	73%	55%	74%
Age 0-5 unknown (%)	-	-	24%	1%
Preventative procedures (prophylaxis, sealants, fluoride) (n)	**17,501**	**10,335**	**825**	**28,661**
Treatment procedures (n)	**20,785**	**5,445**	**249**	**26,479**
Crowns (%)	39%	28%	0.4%	37%
Baby root canals (%)	21%	16%	4%	20%
Fillings (%)	12%	26%	92%	16%
Sedation (IV & Nitrous Oxide) (%)	16%	21%	0%	17%
Extractions	8%	8%	2%	8%
Space maintenance	2%	2%	1%	2%

Note: Percentages may not add up to 100% due to rounding
Source: FIRST 5 of Santa Clara County; Oral Health Continuum of Care System; 2015-2017[121]

Early Head Start and Head Start of Santa Clara and San Benito Counties also serve families with children ages 0 to 5 and help children access dental exams, connect to dental homes, and access dental treatment when needed. In 2016-2017, Early Head Start and Head Start together served 2,551 children, almost 100% of whom have been connected to a dental home. Of the Early Head Start participants, 95% completed a dental exam in 2015-2016. Of those completing the exam, 18% needed dental treatment, and almost all of those children received the treatment they needed (Table 5-3).

Table 5-3. Dental home, exam, and treatment data for children served by Early Head Start and Head Start of Santa Clara and San Benito Counties

Head Start				
	2013-2014	**2014-2015**	**2015-2016**	**2016-2017**
Children served (n)	2553	2573	2328	2257
Children with a dental home (%)	99%	99%	99%	98%
Children completing professional dental exam (%)	95%	90%	93%	95%
Of children receiving exams, children needing professional dental treatment (%)	34%	20%	23%	18%
Of children needing treatment, children who received dental treatment (%)	98%	92%	94%	96%
Early Head Start				
	2013-2014	**2014-2015**	**2015-2016**	**2016-2017**
Children served (n)	134	137	288	294
Children with a dental home (%)	100%	100%	89%	95%

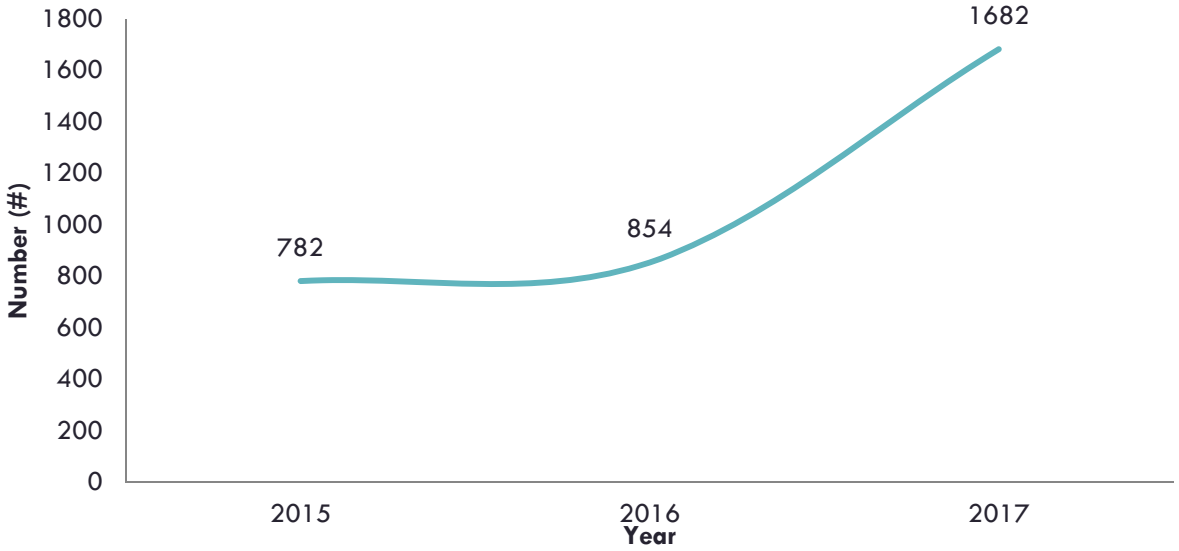
Source: Head Start of Santa Clara and San Benito Counties, County of Santa Clara Office of Education; Annual Reports: 2013-2014, 2014-2015, 2015-2016, 2016-2017[122]

Integration of oral health in pediatric primary care settings

The 2014 U.S. Preventive Services Task Force recommended that all primary care clinicians apply fluoride varnish to primary teeth of all infants and children starting at the age of primary tooth eruption to age five.[123] The American Association of Pediatrics recommends that pediatric medical providers conduct a risk-assessment for all children when there is no immediate on-site access to a dentist.[124] Primary care practitioners are able to screen and provide fluoride varnish and oral health anticipatory guidance for children, especially until a dental home is established.[125] Integration of oral health into pediatric primary care is especially important because many young children in the County of Santa Clara feel more comfortable receiving care in this setting than at a dentist's office.[113]

The available data in Santa Clara on fluoride varnish application by pediatricians is limited to the billed procedures through Medi-Cal managed care plans (procedure codes: D1206 and 99188). In recent years, the Santa Clara Family Health Plan, a managed care organization serving low-income residents of the County of Santa Clara by providing medical, dental, and vision insurance through the Medi-Cal, Cal MediConnect, and Healthy Kids programs,[126] has seen an increase in absolute numbers of fluoride varnishes done by pediatric medical providers in the County of Santa Clara, increasing from 782 applications in 2015 to 1,682 applications in 2017 (Figure 5-11).

Figure 5-11. Fluoride varnish applications done by pediatric medical providers on Santa Clara Family Health Plan members

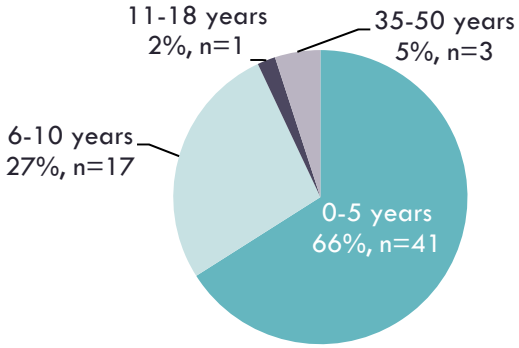


Source: Santa Clara Family Health Plan data, 2015-2018[127]

Pediatric sedation and general anesthesia

General anesthesia is a high-risk procedure, especially for young children, and while there are cases that need to be performed under general anesthesia, best practice calls for limited use.[4,128] Figure 5-10 presents the number of cases that utilized general anesthesia because the needed dental treatment could not be done otherwise, among patients with insurance through the Santa Clara Family Health Plan. Because of extensive use of sedation in the 0 to 5 population (Figure 5-12), and data showing that 17% of treatment procedures among children ages 0 to 5 at FIRST 5-funded clinics required some type of sedation (Table 5-2), further inquiry should be explored. It may suggest the importance of training dentists in behavioral management strategies that could enable them to treat young children with high needs without general anesthesia.[129,130]

Figure 5-12. Medically necessary dental anesthesia among Santa Clara Family Health Plan members



Source: Santa Clara Family Health Plan data, 2017[127]

CHAPTER 6 : UTILIZATION OF CARE BY ADULTS AGES 18 TO 64

Approximately three-quarters of adults in the County of Santa Clara have visited a dentist in the past 12 months, yet clear disparities based on educational attainment, income and race/ethnicity persist. Only 16% of adults with Medi-Cal coverage had an annual dental visit in 2016.

Importance of regular dental care

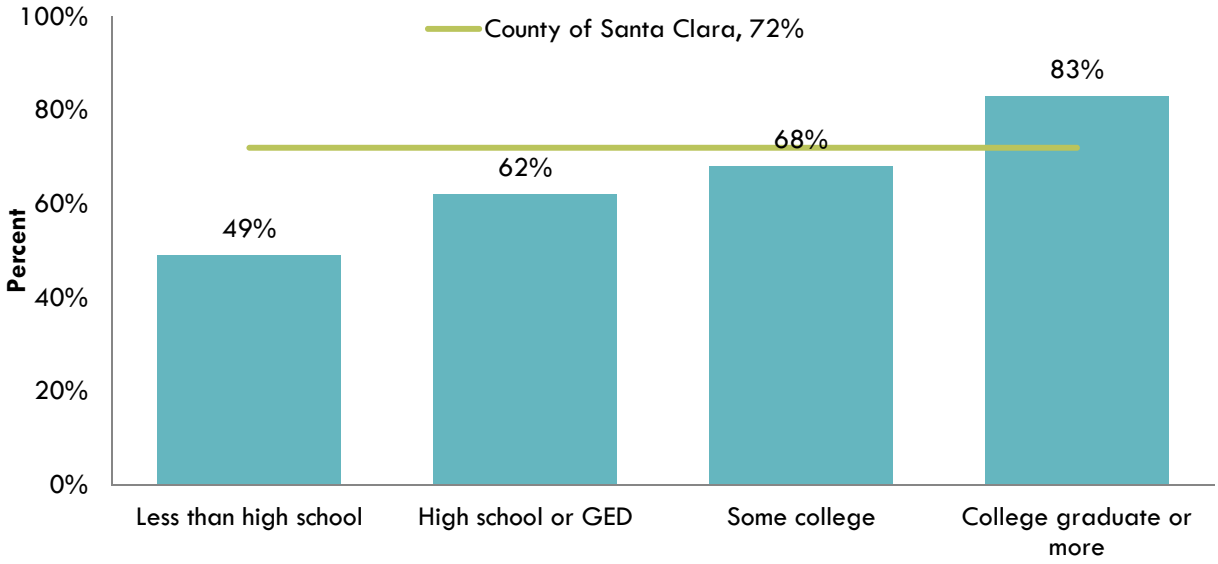
Oral health is an integral part of overall health and impacts physical and social wellbeing over the life course.[8,9] Utilization of oral health care, including annual and preventive visits, is a crucial part of maintaining good oral health. For adults, guidelines recommend regular dental visits, which may include exams, preventive care, and treatment, though the recommended frequency of these visits may depend on individual risk of cavities and gum disease. Low risk adults may need only one visit per year, while higher risk adults (e.g. those who smoke, have diabetes, or have other genetic risk factors) may require more frequent visits.[131,132]

What the data tell us

Dental services and care received

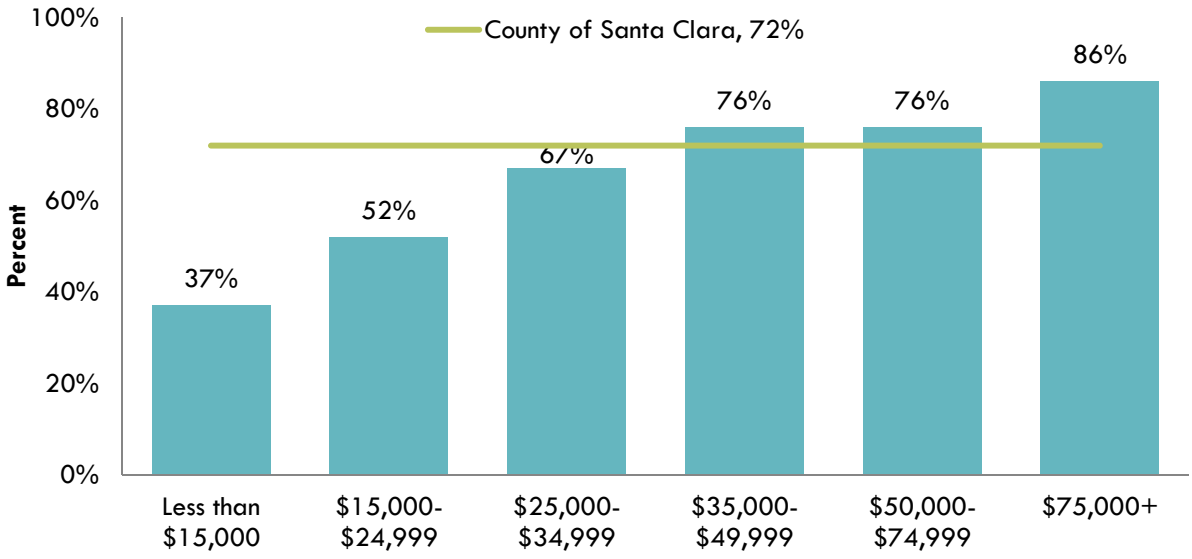
In the County of Santa Clara, the percentage of adults who have visited a dentist in the past 12 months has remained steady since 2000 and is currently at 72%,[21,89] but disparities exist. There are clear gradients by educational attainment (Figure 6-1) and household income (Figure 6-2) with a smaller percentage of less educated and lower income adults visiting the dentist in the past 12 months, compared to adults with more education and higher household incomes. In addition to this, Latinx adults (59%) and adults ages 25-34 (58%) visited the dentist at much lower rates compared to their counterparts (71-82% for other races; 73-78% for other age groups). [21]

Figure 6-1. Adults who have visited the dentist in the past 12 months in the County of Santa Clara, by educational attainment



Source: County of Santa Clara Public Health Department, 2013-14 Behavioral Risk Factor Survey[21]

Figure 6-2. Adults who have visited the dentist in the past 12 months in the County of Santa Clara, by household income



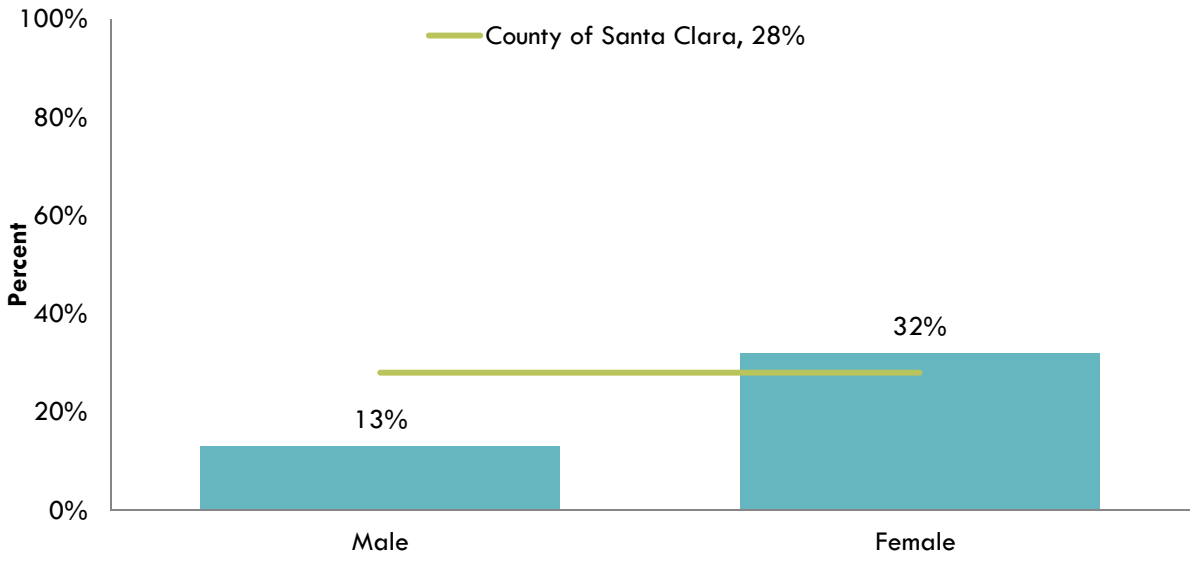
Source: County of Santa Clara Public Health Department, 2013-14 Behavioral Risk Factor Survey[21]

Generally, focus group participants reported knowing that they should visit the dentist regularly for preventive visits. However, many reported visiting the dentist less often than the recommended schedule of every six months. On average, many reported going annually or when they had significant dental issues. According to both key informants and focus group participants, what motivated most participants to visit the dentist was an acute dental issue or tooth pain.[113,133]

More than half of adult respondents to a recent field survey in the County of Santa Clara (55%) report that the main reason for their last dental visits is that they went in on their own for a check-up examination or cleaning. Nineteen percent report that they were called by their dentist for a check-up examination or cleaning. Thirteen percent report that they last visited the dentist because something was wrong, bothering, or hurting them.[31]

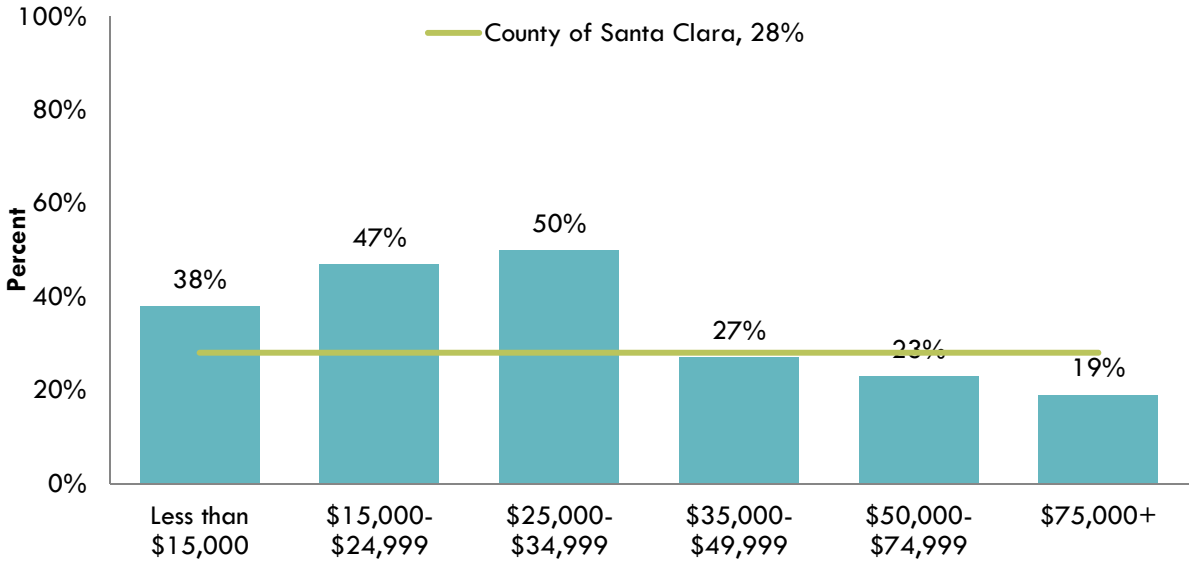
Conversely, more than a quarter (28%) of adult respondents to the recent field study were unable to receive needed dental care in the past 12 months with a higher rate for women compared to men (Figure 6-3). We can also see that a higher percentage of adults with a household income less than $35,000 were unable to receive necessary care compared to higher income adults in the county (Figure 6-4).

Figure 6-3. Adults unable to access needed dental care in the past 12 months, by gender



Source: County of Santa Clara Public Health Department, 2018 Adult Oral Health Intercept Survey[31]

Figure 6-4. Adults who were unable to access needed dental care in the past 12 months, by household income

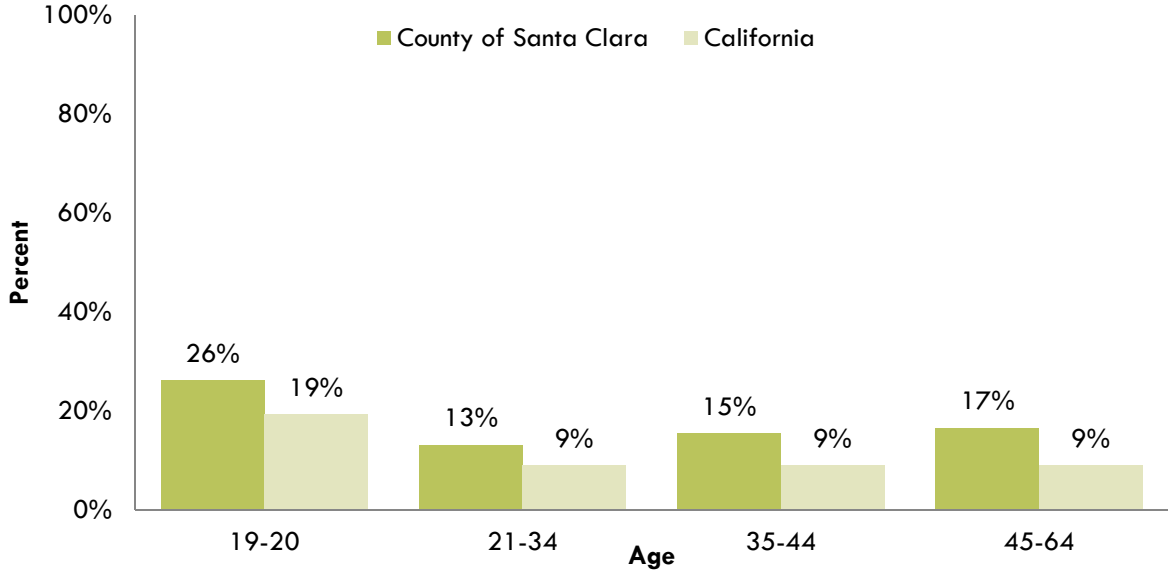


Source: County of Santa Clara Public Health Department, 2018 Adult Oral Health Intercept Survey[31]

Preventive and annual visits for adults on Medi-Cal

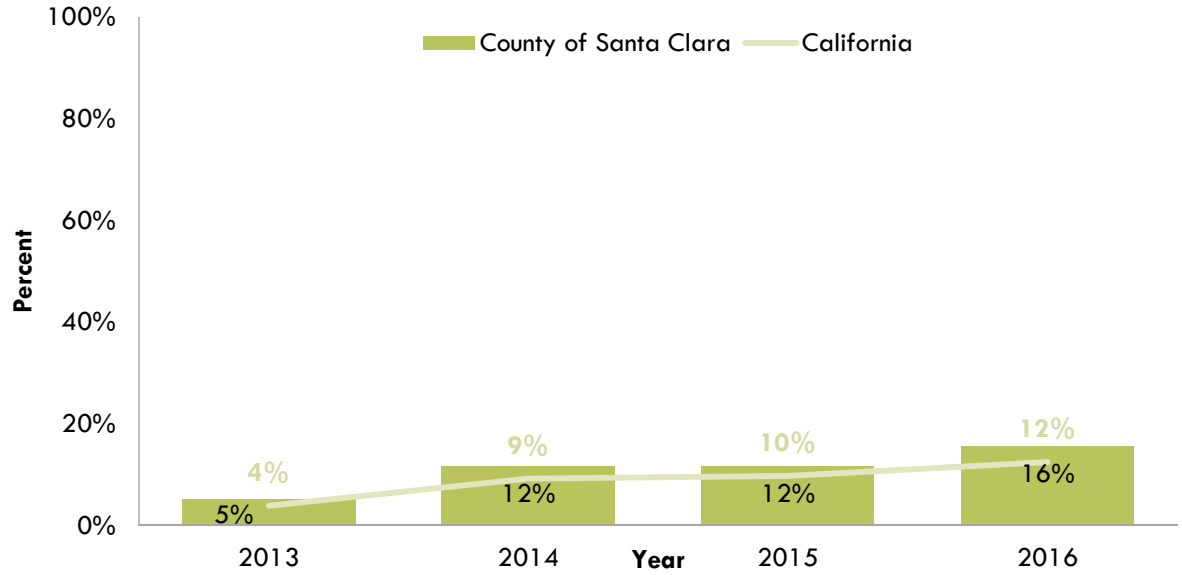
Having Medi-Cal insurance is a signifier of low-income status, and therefore can help identify some of the most vulnerable adults. Young adults (ages 19 and 20) on Medi-Cal in the County of Santa Clara had higher percentages of preventive and annual dental visits compared to other age groups. In 2016, 26% of these young adults received a preventive dental visit, a percentage that is higher than all other age groups (Figure 6-5). Thirty (30) percent of 19 and 20 year old Medi-Cal beneficiaries in the county accessed an annual dental visit in 2016, compared to ages 21 to 34 (18%), 35 to 44 (21%), and 45 to 64 (24%). Rates of preventive (Figure 6-6) and annual (Figure 6-7) dental visits among Medi-Cal beneficiaries in the County of Santa Clara and California have increased slightly since 2013, but remain low.

Figure 6-5. Medi-Cal beneficiaries ages 19-64 who received a preventive dental visit in the County of Santa Clara and California, by age group



Source: Department of Health Care Services, Medi-Cal Dental Services Division, Dental Utilization Measures and Sealant data 2016[33]

Figure 6-6. Medi-Cal beneficiaries ages 19-64 who received a preventive dental visit in the County of Santa Clara and California, by year

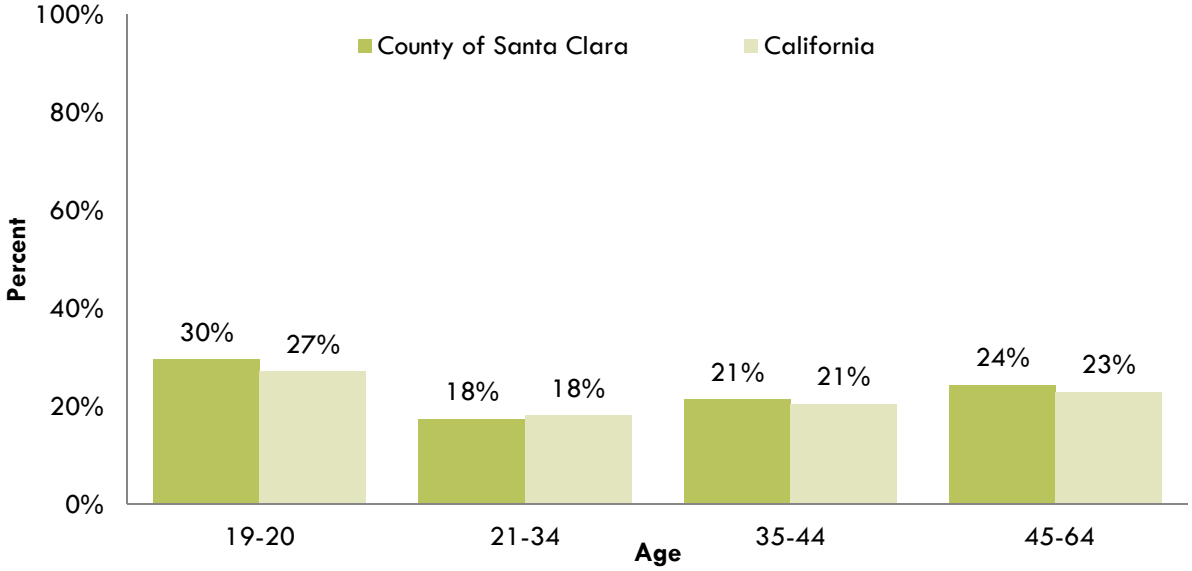


Source: Department of Health Care Services, Medi-Cal Dental Services Division, Dental Utilization Measures and Sealant data 2013-2016[32]

Similar to preventive visits, a greater percentage of young adults ages 19 to 20 who have Medi-Cal had an annual dental visit compared to other age groups, though percentages remain low across all age groups (Figure 6-7). Overall, the percentage of annual dental visits among adults

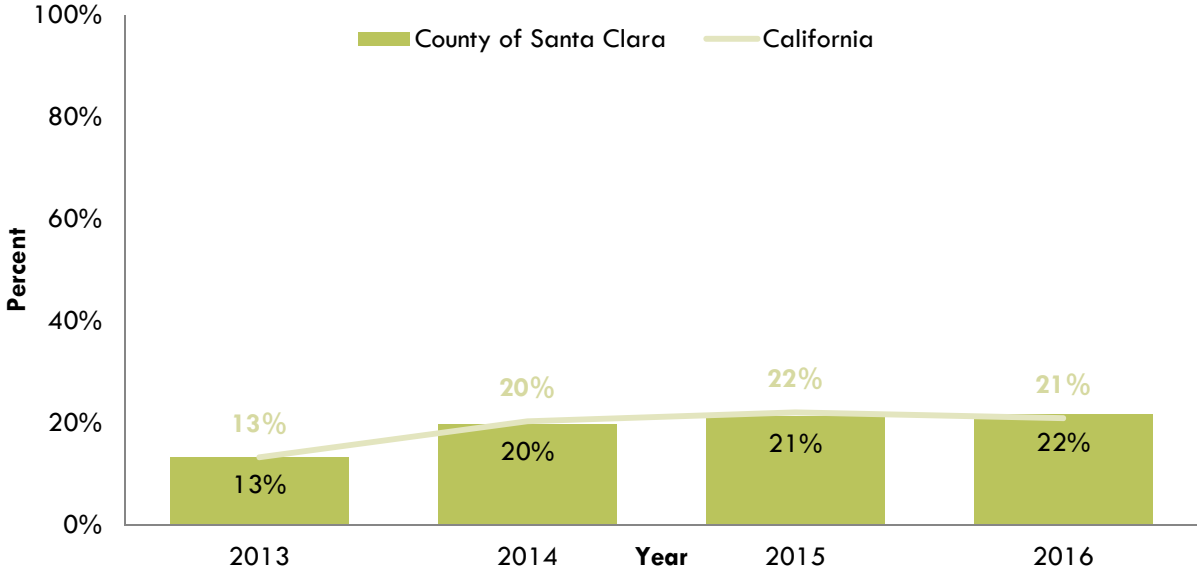
with Medi-Cal increased after 2013, possibly due to the reinstating of Medi-Cal dental benefits for adults in 2014, but has remained steady since at approximately 20% (Figure 6-8).

Figure 6-7. Medi-Cal beneficiaries ages 19-64 who received an annual dental visit in the County of Santa Clara and California, by age group



Source: Department of Health Care Services, Medi-Cal Dental Services Division, Dental Utilization Measures and Sealant data 2016[33]

Figure 6-8. Medi-Cal beneficiaries ages 19-64 who received an annual dental visit in the County of Santa Clara and California, by year



Source: Department of Health Care Services, Medi-Cal Dental Services Division, Dental Utilization Measures and Sealant data 2013-2016[32]

CHAPTER 7 : UTILIZATION OF CARE BY PRIORITY POPULATIONS

Priority populations, including foster youth, juvenile justice-involved youth, pregnant women, low-income older adults, adults experiencing homelessness, and immigrants, have unique experiences and challenges when accessing oral health care. This can result in lower utilization rates than other populations in the County of Santa Clara.

Child welfare involved/foster youth

Oral health and foster youth nationwide

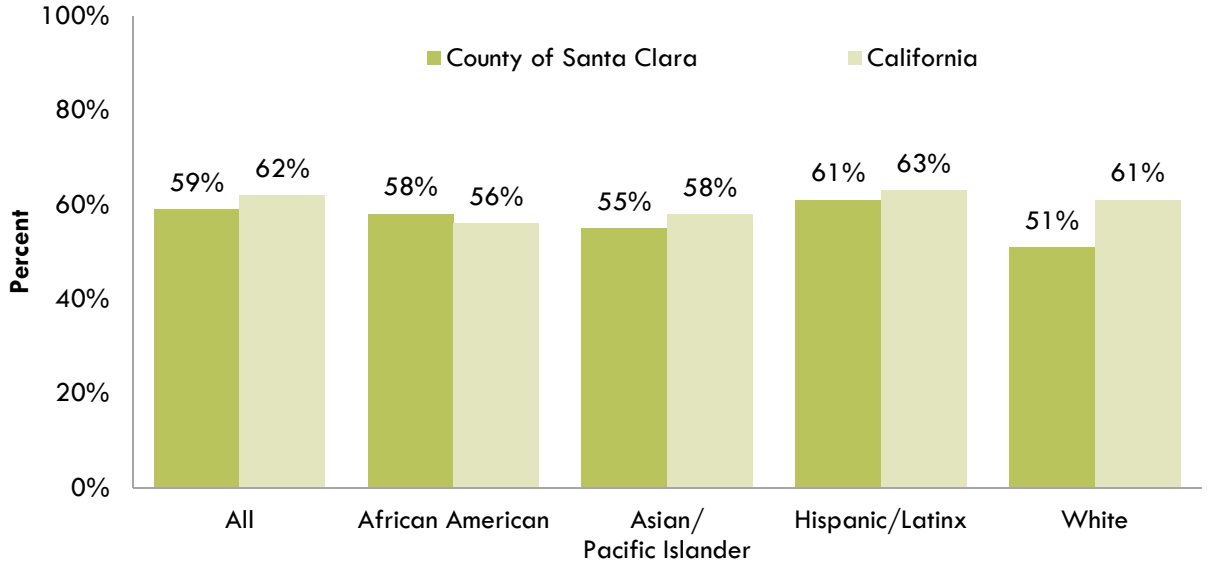
Foster youth experience high rates of medical, dental and mental health issues and unique traumatic psychosocial events. The American Academy of Pediatrics has classified children and youth in the foster care system as a population of children with special health care needs.[134] A recent study of child welfare-involved youth in the United States found that many children in the child welfare system, especially younger children, are not utilizing dental care at the recommended frequencies (yearly dental visits). Older foster children ages 12 to 17 and children with more educated (higher than a high school diploma/GED) caregivers were more likely to have visited the dentist in the past year, while children without a regular source of care and those who could not afford care had lower utilization rates.[135]

Child welfare involved youth/foster youth in the County of Santa Clara

From 2011-2015, an average of 13,000 children and youth were referred to the County of Santa Clara Department of Family and Children Services per year, with approximately 12% of those referrals opened and followed by a county social worker. Of all cases where children were removed from their homes and entered into the foster care system, 47% were ages 0 to 5 years, 22% were ages 6 to 10 years, 19% were ages 11 to 15 years, and 12% were ages 16 to 17 years. The majority of these children and youth were Latinx (61%).[136]

In the County of Santa Clara, youth in the child welfare system who are in out-of-home placements are required to receive a medical and dental exam within 30 days of each new placement, in addition to regularly recommended care (e.g. cleanings every six months and other preventive dental care).[113,133] The percentage of child welfare-involved youth, which includes youth in out-of-home placements, who have received a dental exam in the past year generally aligns with percentage for child welfare youth in California, except among White youth. Child welfare involved White youth have a lower rate of dental visits compared to other races/ethnicities in the county and a lower rate compared to their counterparts statewide (Figure 7-1).

Figure 7-1. Child welfare-involved youth (ages 1-20) receiving a dental exam in the past 12 months, January 1 – March 21, 2018



Source: University of California, Berkeley, Center for Social Sciences Research, California Child Welfare Indicators Project, 2018[137]

Juvenile justice-involved youth

Juvenile justice-involved youth nationwide

Youth who are involved in the juvenile justice system often have inconsistent or nonexistent medical and dental care outside of custody and unmet health needs, with many needs being identified upon admission to a juvenile justice facility.[138] While few studies on the oral health status and dental needs of this population have been conducted, the research that has been conducted found that this population has high unmet dental care needs, possibly due to lower access to care and underlying health disparities, and that there are significant challenges to providing care to youth in custody.[138–140]

Juvenile justice-involved youth in the County of Santa Clara

In 2017 in the County of Santa Clara, 3,792 youth were arrested or cited, with 1,013 of whom were detained at juvenile hall, a 9% increase from 2016. Black and Latinx youth were overrepresented in all parts of the juvenile justice system in the county.[141] Based on anecdotal report from the Acting Deputy Chief Probation Officer for the Juvenile Services Division, approximately 25% of youth in who are in custody in the County of Santa Clara juvenile justice system are in need of dental services at any given time (G.H. Le, email communication, July 2018). Focus group participants and key informants report that youth receive a dental exam when they enter custody, but that there is not the capacity to provide all youth with ongoing preventive care throughout their stay.[113,133] While data on utilization of services among youth in custody is scarce, additional qualitative information regarding the dental care for this population will be presented later in this report.

Pregnant women

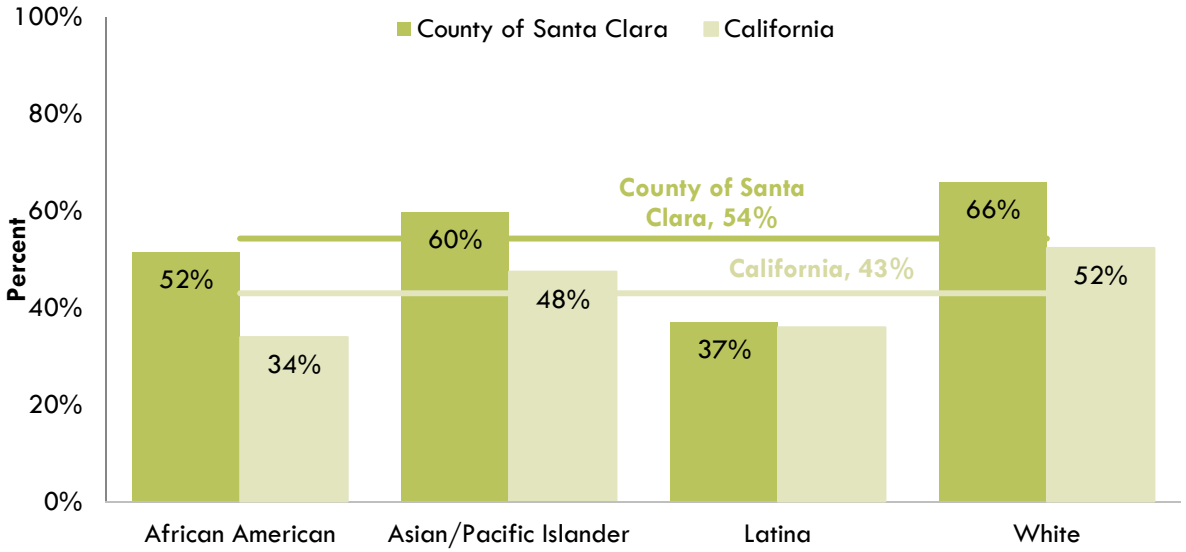
Importance of dental care for pregnant women

Poor oral health during pregnancy can have negative effects on the mother's health, on birth outcomes, and the child's oral health. Pregnant women may experience many changes in diet, oral hygiene practices, and physical well-being, such as morning sickness and reflux, which can lead to tooth demineralization and an increased risk of caries.[142] While results are mixed, research points to a connection between maternal periodontal infection and negative birth outcomes, such as preterm birth, low birthweight, miscarriage, and pre-eclampsia, something that is known to affect multiple health and social outcomes later in life.[48,142–145] Research regarding periodontal therapy during pregnancy has not shown that these treatments reduce preterm birth and infant low birth weight,[144,145] though more research is needed and oral health treatment during pregnancy does not have adverse effects.[146] In addition, untreated maternal caries during pregnancy increases the risk of caries for the child once they have teeth.[50,147] Pregnant women may experience barriers to utilizing care, including unwillingness of dental providers to care for pregnant women due to inadequate knowledge of evidence-based perinatal practices,[148,149] limited opportunities for women to learn about oral health during pregnancy,[150] and other barriers to care during pregnancy.[149] Access to dental services for pregnant women is also influenced by income level, education, lack of transportation, and lack of dental providers, with some women experiencing more barriers and less access to care.[146]

What the data tell us

Overall, pregnant women in the County of Santa Clara visit the dentist during pregnancy at higher rates than women statewide, but there are disparities between different races/ethnicities and pregnant women visit the dentist at lower rates than adults generally. Latinas have a lower rate of visits during pregnancy compared to women of other races/ethnicities in the county (Figure 7-2).[31] Focus group findings mirror this discrepancy, with many women reporting that either they did not go to the dentist while pregnant or were not able to receive the dental care they needed while pregnant.[113]

Figure 7-2. Women with a recent live birth who visited the dentist during pregnancy



Source: California Department of Public Health, 2015-2016 Maternal and Infant Health Assessment (MIHA) Survey[34]

Older adults

Importance of dental care for older adults

Oral health issues increase as we age and older adults have unique dental issues that affect their health and social wellbeing. Oral health issues, such as tooth loss and periodontal disease, can be linked to other age related quality of life and health issues including ability to eat, employability, self-esteem, cardiovascular disease, autoimmune disease, and diabetes.[106,108–111] Thus, oral health care is a crucial need for this population.

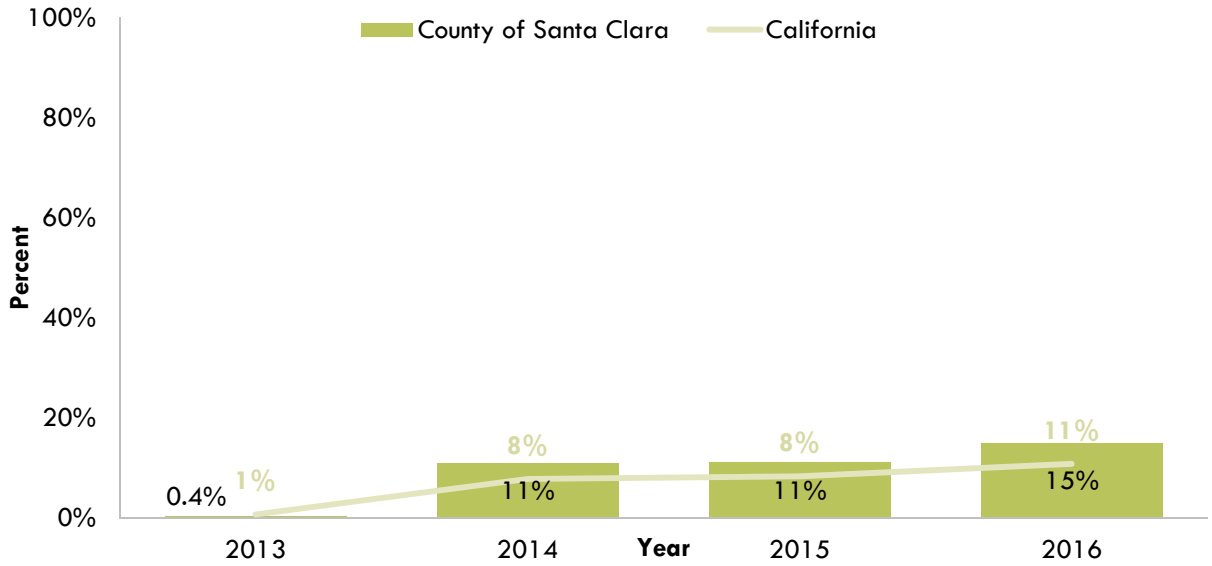
What the data tell us

Although utilization of dental care has increased among older adults in recent years,[151] this population faces a number of unique challenges in utilizing dental services. The lack of consistent and comprehensive dental insurance, especially since Medicare does not cover dental services, is a major barrier to accessing necessary care.[108,113] This lack of coverage, along with high out-of-pocket costs and high need for both preventive and treatment services, creates a gap in utilization of dental care for certain groups of older adults, particularly for those who are low income.[108]

Three-quarters (75%) of adults ages 65 and older in the County of Santa Clara visited a dentist in the past 12 months.[21] This data is corroborated by a recent field survey conducted in the county that reports 68% of older adults having visited a dentist or dental clinic in the past 12 months. The majority of these older adults (58%) report that the reason for their last visit was that they went on their own (versus being called by their dentist) for a check-up examination or cleaning. Thirteen percent reported that they went for their last visit due to a dental problem. The same survey found that 26% of older adults report a time in the past 12 months when they needed dental care and were unable to receive it.[31]

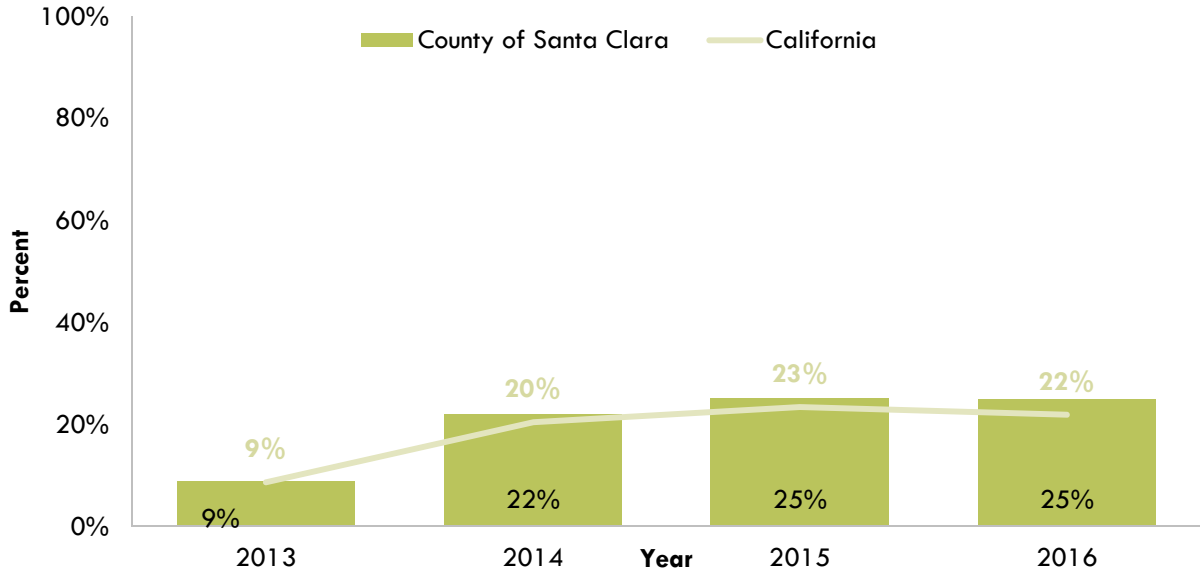
Low income older adults who have Medi-Cal have significantly lower utilization rates compared to the older adult population overall. A low percentage of older adults who have Medi-Cal receive preventive dental visits in both the County of Santa Clara and across the state, though rates have increased since 2013 (Figure 7-3). Older adults who have Medi-Cal have slightly higher rates of annual dental visits compared to preventive visits, and an increase was also seen after 2013 (Figure 7-4).

Figure 7-3. Medi-Cal beneficiaries, Age 65 and older who received a preventive dental visit in the County of Santa Clara and California



Source: Department of Health Care Services, Medi-Cal Dental Services Division, Dental Utilization Measures and Sealant data 2013-2016[32]

Figure 7-4. Medi-Cal beneficiaries Age 65 and older who received an annual dental visit in the County of Santa Clara and California



Source: Department of Health Care Services, Medi-Cal Dental Services Division, Dental Utilization Measures and Sealant data 2013-2016[32]

Other priority populations

Other priority populations may also have low utilization rates, though little if any secondary data exists for these populations in the County of Santa Clara.

Homeless adults

It is estimated that 7,394 people are experiencing homelessness in the County of Santa Clara, an increase of 13% since 2015. Many are unsheltered (74%), men (64%), Latinx (42%) and between the ages of 41 and 60 (61%).[152] The homeless population in the county is ageing, and thus it is important to consider the overlap in oral health status, needs, and utilization between people experiencing homelessness and older adults.

During a focus group with homeless adults, many participants reported extensive dental issues, including caries and multiple or complete tooth loss, along with multiple barriers to accessing care. This results in low utilization of preventive dental care, and high utilization of the emergency room to manage pain.[113]

Immigrants

As noted in Chapter 2, 38% of County of Santa Clara residents are born outside of the U.S.[18] This population may have unique issues and needs when it comes to oral health care. Focus group participants who were born outside of the U.S. reported confusion with the system of care in this country, a lack of trust of the dental providers they encounter here, an unmet need for translation services, and higher costs of care when compared to their home countries. Some participants reported waiting to access care until they visit their home countries and are able to receive more affordable care there.[113]

CHAPTER 8 : BARRIERS TO MAINTAINING ORAL HEALTH

County of Santa Clara residents, particularly low-income residents and priority populations, experience barriers to accessing dental services and implementing good home oral health practices. Barriers commonly identified include the cost of oral health care, transportation, navigating systems of care, and dental providers lacking the capacity to treat patients with behavioral challenges or past trauma.

This chapter provides a snapshot of barriers to maintaining oral health, using information gathered through focus groups and key informant interviews. Focus group participants and key informants were asked about perceptions and behaviors surrounding oral health, experiences with dental providers, and any challenges that interfere with accessing oral health care or implementing oral health practices.

As it is used here, oral health care refers to services and treatment received from dental providers, including preventive and annual dental visits for children and adults, and treatment for any acute dental issues. Oral health practices refer to the daily care of teeth by individuals, including frequency of brushing and flossing, consumption of sugary foods, and use of tobacco.

Several populations were identified as potentially having unique experiences and challenges with maintaining oral health, including: young children (ages 0 to 5), pregnant women, foster youth, juvenile justice-involved youth, marginalized transitional age youth (TAY), older adults, and homeless adults. Ten focus groups were conducting with members of these populations, or with individuals representing them (i.e. parents were included on behalf of young children and social workers were included on behalf of foster youth). Information from key informants comes from one-on-one interviews with dental, medical, nonprofit, and community leaders in the County of Santa Clara.

Barriers to accessing oral health care

In general, focus group participants reported a high level of knowledge about oral health care, but barriers prevent the translation of this knowledge into care utilization. Focus group participants and key informants identified many barriers to accessing oral health care. Barriers manifest in two distinct ways: 1) Those that lead to the avoidance of care on the part of the patient, and 2) Those that prevent patients from accessing care when they do seek it out. The latter were reported far more frequently by both focus group participants and key informants.

Barriers leading to the avoidance of care

Past negative experiences at the dentist

Having had past negative experiences at the dentist was most frequently cited as a reason for patients to avoid care. Focus group participants and key informants provided feedback on factors that contribute to a negative experience at the dentist. Receiving confusing or conflicting information and pricing from different dental providers was most commonly cited by focus group participants, which in turn lead many to believe that dentists are more concerned about making money rather than helping their patients. In addition, an individuals' perception that they are being treated poorly or with disrespect by dental providers or office staff, or not being listened to when describing their dental needs, were other commonly cited negative experiences.

> "I've had horrible experiences with dentists, especially as a child. It has always been a real tense experience."
> -Focus Group Participant

Finally, many participants cited examples of enduring painful procedures or being restrained during procedures when they were children. Such participants agreed that those experiences lead to them avoiding dental visits as an adult.

Conversely, having had past positive experiences at the dentist leads to decreased avoidance of care. Frequent and clear communication from dental providers about dental issues and procedures were most commonly cited as contributing to a positive experience. This was followed by the feeling that they are being generally respected and treated well by the dental provider and office staff during the visit. Additionally, focus group participants reported that when they perceived that they were receiving high quality dental care, even if costly, they were more likely to consider the experience to be positive.

Competing priorities

Avoidance of care also results from competing priorities. When allotting limited funds, time, and energy, many focus group participants report feeling that they need to focus on basic needs, including maintaining secure housing and ensuring their families have enough food, often through working long hours at low-paying jobs.

> If you are living in [insecure and crowded] housing and you don't have immigration status… oral health is way down the list. You have to treat all of the other needs [before they will see the dentist]."
> Key Informant

Several key informants echoed this point in their interviews. Others pointed out that preventive care is understandably not a priority for populations who may be struggling with addiction and mental health issues in addition to living in insecure and unsafe environments.

Barriers that prevent patients from accessing desired care

Cost of care

High costs for preventive dental care and treatment was mentioned in every focus group as a barrier to accessing oral health care (and cited five times more often than the second most commonly cited barrier). Many participants discussed how the lack of or limited insurance coverage for dental services restricted how often they could visit the dentist or receive treatment for long-standing issues. One focus group participant stated "My last tooth cost me $4,000. I don't want to lose my teeth, so I put up the money because I have no choice, but I wish I had insurance …" Some members of the immigrant community, who do qualify for Medi-Cal, report going to their home country to get dental care since it would be much cheaper than in the County of Santa Clara.

> "Just the cleanings, they cost you $40-$50, and there goes your monthly extra money…or my food money."
> -Focus Group Participant

Transportation

Difficulty securing transportation to and from the dental provider was also cited as a barrier in every focus group, due to both cost and length of time in transit. This is especially a barrier for residents who live in unincorporated areas or the southern area of the County of Santa Clara, live far away from a community health center or a dental provider who accepts Medi-Cal, live on limited incomes, and/or do not own a vehicle. Many participants reported reducing this barrier by using subsidized public transportation, such as VTA Access, to get to their dental provider. Some participants rely on family or friends to drive them to appointments. Other participants mentioned learning that Medi-Cal will arrange for transportation to their dental provider. However, it is not a well-known benefit, and some participants reported confusion about how to access this service.

> "Med-Cal transportation needs to be much better known. If you've got transportation, you won't be missing appointments."
> -Focus Group Participant

Navigating systems of care

Focus group participants and key informants discussed challenges when attempting to navigate systems of care. Finding dental providers who are currently accepting new Medi-Cal patients is the first challenge, followed by long wait times for appointments or appointment slots not being available on weekends or evening hours. Sometimes the challenge of not finding weekend or evening appointment slots is related to their ability to secure a ride from a family member or friend.

Providers lack training on trauma-informed practices and addressing behavioral issues

Dental providers frequently treat patients with a history of trauma or negative dental experiences, whether they are aware of the patient's past or not. Some adults have histories of trauma that can be triggered by having the dental provider touch their face or be in very close proximity.[153] Such past trauma may affect how the patient experiences oral health care as an adult. However, not all dental providers have been trained in trauma-informed dental care practices, which would go far in alleviating the patient's anxiety and increase the likelihood that the patient will follow up on necessary care and prioritize preventive care.[153,154] Focus group participants and key informants described how a visceral fear of the dentists' office can be triggered by the smells and sounds in the office. However, they reported that these fears can be allayed by dental providers who have a welcoming and warm office, and act with empathy and sensitivity during dental visits and procedures.

> "Just to get her [teeth] cleaned, they restrained her and she kind of panicked…. she cried the whole time. I took her there four times and it was always the same. I looked for another place [where they wouldn't] restrain her, and they explained [everything they were going to do] and that she shouldn't be afraid, and she let them work [on her teeth]."
> -Focus Group Participant

Additionally, working with populations that present with behavioral challenges, such as very small children, those with developmental disabilities, or those with mental health or substance use disorders, requires a specialized understanding and skill-set. Being unable to properly deal with behavioral issues can lead to patients not receiving the care they need and can contribute to negative or traumatic experiences with the dentist that can affect future utilization of care. These populations also often request or require sedation when undergoing treatment, which many providers are unable or unwilling to provide, creating an additional barrier to care.

A key informant with expertise on oral health and the developmentally disabled population explained, "If you have somebody who has seizure disorder … and [the dentist] wants to put this beautiful six-unit bridge right in the front of their mouth and next thing [the patient does] is …fall [from a seizure] and hit their face... it's not appropriate for that individual. So, I try to educate these doctors to understanding what's right for the individual, not what's right for their pocketbook or right for their malpractice insurance."

Language differences between patient and provider

Both focus group participants and key informants mentioned language differences between patients and dental providers as a barrier to accessing care. The inability of patients to communicate with providers about their dental needs and treatment options leads to misunderstanding, mistrust, and frustration that can interfere with care.

Barriers to implementing oral health practices

Similar to oral health care, focus group participants reported a high level of knowledge about oral health practices, but barriers prevent the translation of this knowledge into regular implementation.

Cost of hygiene supplies

The most frequently cited barrier to regular tooth brushing and flossing is availability of affordable hygiene supplies. One key informant commented "If you are a single mom with four children and you are in subsidized housing and using food stamps, you are hard pressed to buy toothpaste." In order to secure supplies, focus group participants reported asking their dental provider for complimentary tooth brushes or floss, purchasing supplies from discount stores like the Dollar Tree, or making their own toothpaste using baking soda.

Pain or discomfort associated with flossing

Pain, bleeding, and inflammation during and after flossing were cited as the biggest barrier to implementing this practice. Many focus group participants stated that they have tried to floss but give up after experiencing such side effects. Others mentioned difficulty when attempting to implement this practice, such as not being able to get floss between their teeth. Several focus group participants expressed interest in alternatives to flossing, such as water picks.

Wide-spread availability of sweetened foods and beverages

Some focus group participants reported the widespread availability of sugary drinks and food as a barrier to following oral health nutrition guidelines, especially for children. They noted that children receive sweetened products at friends' homes, schools, and even at the dentists' offices. A general lack of access to healthy food for both adults and children was also cited in focus groups.

Physical and behavioral health limitations

Certain populations experience barriers that stem from health issues. Some older adults reported that decreased mobility affects their ability to stand at the sink or hold up their arms for the recommended time to brush and floss. Developmentally disabled individuals also sometimes lack the mobility to care for their own teeth, and their disabilities can also manifest in behaviors that make it difficult for someone else to care for their teeth.

Several key informants mentioned that ongoing issues of substance use and mental health problems among their service population affect their ability to engage in regular oral hygiene.

> "[The impact of drugs] on dental health and oral hygiene is an issue, brushing or flossing your teeth is forgotten. [We] need to add this into the oral hygiene [discussion, the role of] substance use. I think it's very essential."
> Key Informant

Population-specific barriers to maintaining oral health

Some key barriers which emerged from focus groups and interviews only pertained to specific populations.

Young children

In focus groups with parents of young children, age-related behavioral issues were often cited as a barrier to both accessing oral health care and implementing oral health practices at home. Focus group participants reported that "kid-friendly" dentists' offices and providers who have specific skills to engage young children helped alleviate barriers to care. Establishing brushing and flossing as a regular and engaging part of a daily routine, sometimes with the help of aids like timers or electric toothbrushes that play music or light up, helps manage behavior when implementing oral health practices at home.

Pregnant women

Despite the fact that 95% of private dental providers[37] and 100% of Federally Qualified Health Centers[39] provide oral health care to pregnant women, focus group participants reported confusion about whether they could receive oral health care during pregnancy. While some women reported that they regularly visited the dentist, several cited that they were afraid that x-rays, anesthesia, or other dental procedures could harm their baby. This fear, along with receiving conflicting information about which, if any, oral health procedures are safe to receive while pregnant, inhibited many perinatal women from going to the dentist altogether until after their birth.

Foster youth

There are specific challenges around access to dental care for foster youth. These challenges are linked to the perception of how providers interact with foster youth as well as the logistical barriers around accessing and continuing the care. During discussions with key informants and a focus group with social workers who work exclusively with foster youth, several barriers to uninterrupted continuum of care were raised.

There are concerns by social workers that they do not have a complete picture of youths' history of dental visits. If the youth is enrolled in Medi-Cal, data can be retrieved through collaboration with a public health nurse employed by the county. However, if the youth has private insurance or visited a dentist who has not been reimbursed by Medi-Cal, the social worker does not have access to care data and youth do not always remember who they have visited (or are too young to know). Moreover, it is difficult to maintain a dental home because of changes in placement, especially when youth are placed in another county.

During a focus group with TAY who are former foster youth, many participants reported being apprehensive or afraid to see the dentist, often because of past trauma or negative prior experiences with a dentist. Often, youth will request sedation during medical procedures, which they report providers are frequently unwilling to provide. Some youth believe that they are receiving a lower quality of treatment through Medi-Cal or volunteer dental providers than if they were to visit private dental providers. Social workers believe that dental providers who see foster youth perceive them to be "bad kids," and are not empathetic and understanding when youth are non-compliant or act out during visits. Social workers believe there is need for more dentists who are open to working with foster youth, as well as being better trained on how to deal with non-compliant youth.

Caregivers of foster youth may not be properly educated on oral hygiene guidelines and practices, and therefore may not be able to assist youth in implementing daily hygiene practices. Social workers would like more education on guidelines and practices, so they can pass information along to both youth and caregivers. If a case is closed, the youth's guardian is responsible for continuing any further dental care and providing payment, which can lead to a disruption in the continuum of care.

Juvenile justice-involved youth

When youth enter custody, Medi-Cal coverage is discontinued for the duration of their sentence. This means that they need to go through the process of re-enrolling upon release, which can create gaps in coverage during the transition. In addition, there are barriers specifically related to orthodontic treatment. Youth do not have access to an orthodontist at juvenile hall, so they cannot start or maintain any orthodontic care while they are in custody.

Marginalized transitional age youth

Among transitional age youth who were managing their own care for the first time, there is general confusion about which services were needed and how to go about getting them. In addition, many youth reported experiencing a gap in dental care in part because they were no longer getting reminders or support to set up regular dental appointments from their family or from programs they had been enrolled in as teenagers.

Older adults

Some older adults report confusion about how to best take care of their teeth because of changes in practices from when they were younger. Oral health practices that have been introduced after health beliefs and behaviors were solidified in younger years creates confusion and suspicion that pose a barrier to implementing oral health practices.

Many older adults shared concerns that fluoridated water is unhealthy, toxic, tastes bad, or causes cancer. As one focus group participant stated, "I don't know if you know about the fluoride that gets in the water… [we] are being poisoned… We want healthy teeth, but …the water isn't good for our teeth. It's loaded with all kind of stuff. The toothpaste is not good [either]."

> "It has changed a lot. You used to [just] brush your teeth with toothpaste, but now you have dental floss, mouthwash, there are things that you put on your teeth… There are new weird things that didn't exist."
> Focus Group Participant

Homeless adults

From discussions with key informants and a focus group with homeless adults, several challenges specific to this population emerged. In general, oral health was stated as a very high priority for homeless adults, since many have lost multiple or all of their teeth, experienced physical trauma to the jaw, and have untreated tooth decay and caries. However, multiple barriers prevent homeless individuals from being able to address these issues.

Personal belongings are often stolen when living outside or in shelters; several focus group participants reported having lost their dentures due to theft, and then being unable to replace them because Medi-Cal only allows the purchase of dentures every five years.

Poor dental health and lack of dentures limits the foods focus group participants are able to eat. Some reported that even if certain types of fruit and vegetables were available, they would refuse them due to pain when chewing or inability to chew due to lack of teeth. This can pose a barrier to eating healthy foods that may contribute to oral health.

Focus group participants also reported that they often have difficulty obtaining the hygiene supplies necessary for implementing oral health practices. For those participants without a stable residence, not having a regular place to brush their teeth, such as a bathroom or kitchen sink, or access to clean water was cited as an additional barrier to regular teeth brushing.

Participants additionally reported that it was difficult to find dental providers because they lack access to a phone or broadband internet that could be used to find information, schedule appointments, etc., and that information is mostly spread by word of mouth among the homeless community. Participants reported accessing free dental care through volunteer, mobile dental providers which they considered to be a positive resource. However, establishing a dental home is difficult when accessing care in this way, and participants were unclear if there were other ways to visit a dental provider regularly.

CHAPTER 9 : DENTAL CAPACITY

As few private dental providers in the County of Santa Clara are currently accepting new patients with Medi-Cal insurance, community health centers (CHCs) serve the vast majority of patients on Medi-Cal. To adequately serve this population, it is critical to increase capacity of the CHCs and encourage more private providers to accept Medi-Cal, particularly in the underserved southern part of the county.

The capacity of the dental workforce to serve patients in need of care is a crucial component of an effective oral health care system. In California, it has been projected that between 2018 and 2033, the per capita supply of dentists will decrease, with the aging of the dentist population and increase in retirements cited as major contributing factors. Though the trend in number of providers in itself is important, these projections do not to speak to future provider adequacy, productivity, efficiency, or patient demand, all of which are important factors to consider when thinking about potential workforce capacity.[155] Factors such as participation in the Medi-Cal dental program, dental clinic staffing, clinic hours, and physical facilities are crucial to ensuring good community oral health.

Workforce

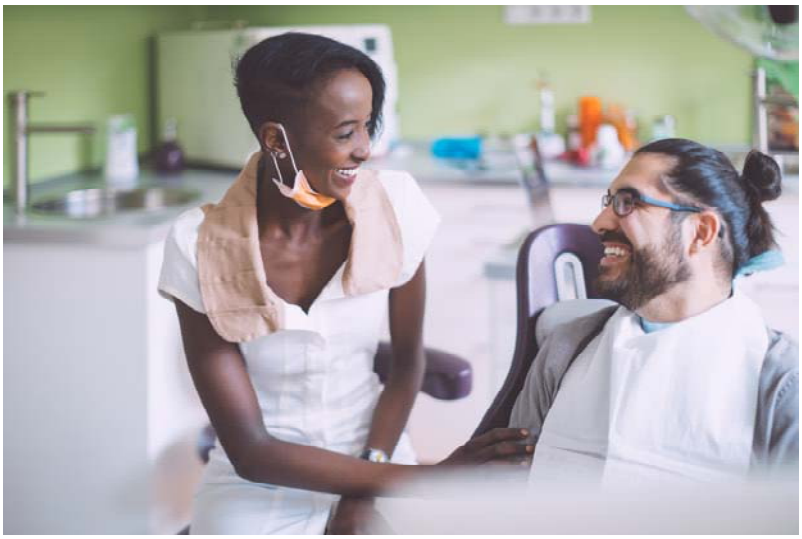
Provider participation in Medi-Cal across California

Dental provider participation in Medi-Cal's dental program, Denti-Cal, is key to ensuring that vulnerable and underserved populations are able to access dental care. For children in in the United States, access to dental care is affected by Medicaid reimbursement rates, dentist density, and dentist participation; higher access rates would likely result from an increase in reimbursement rates.[156] While more than half of the state's medical doctors treat patients who have Medi-Cal, little more than 15 percent of dentists treat Medi-Cal enrollees. In addition, the pool of dentists participating in Medi-Cal shrunk 8 percent between 2013 and 2017, while the number of people enrolled grew approximately 40 percent during that same period of time, largely due to Affordable Care Act reforms.[157]

In California, dental providers' acceptance of new Medi-Cal patients has been lower than the acceptance of new patients with private insurance or who plan to pay out-of-pocket. California dentists have cited multiple reasons for not accepting new Medi-Cal patients including low reimbursement rates (the most highly cited reason), timeliness of payment, patient cancellation rates, and dissatisfaction with administrative processes.[155] Low reimbursement rates have been shown to be a deterrent to provider participation in Medi-Cal in past years.[158] However, California's 2018-2019 state budget includes funding that would increase reimbursement rates by: 1) adding incentives for the top 26 utilized billing codes (e.g. adult dental preventive services,

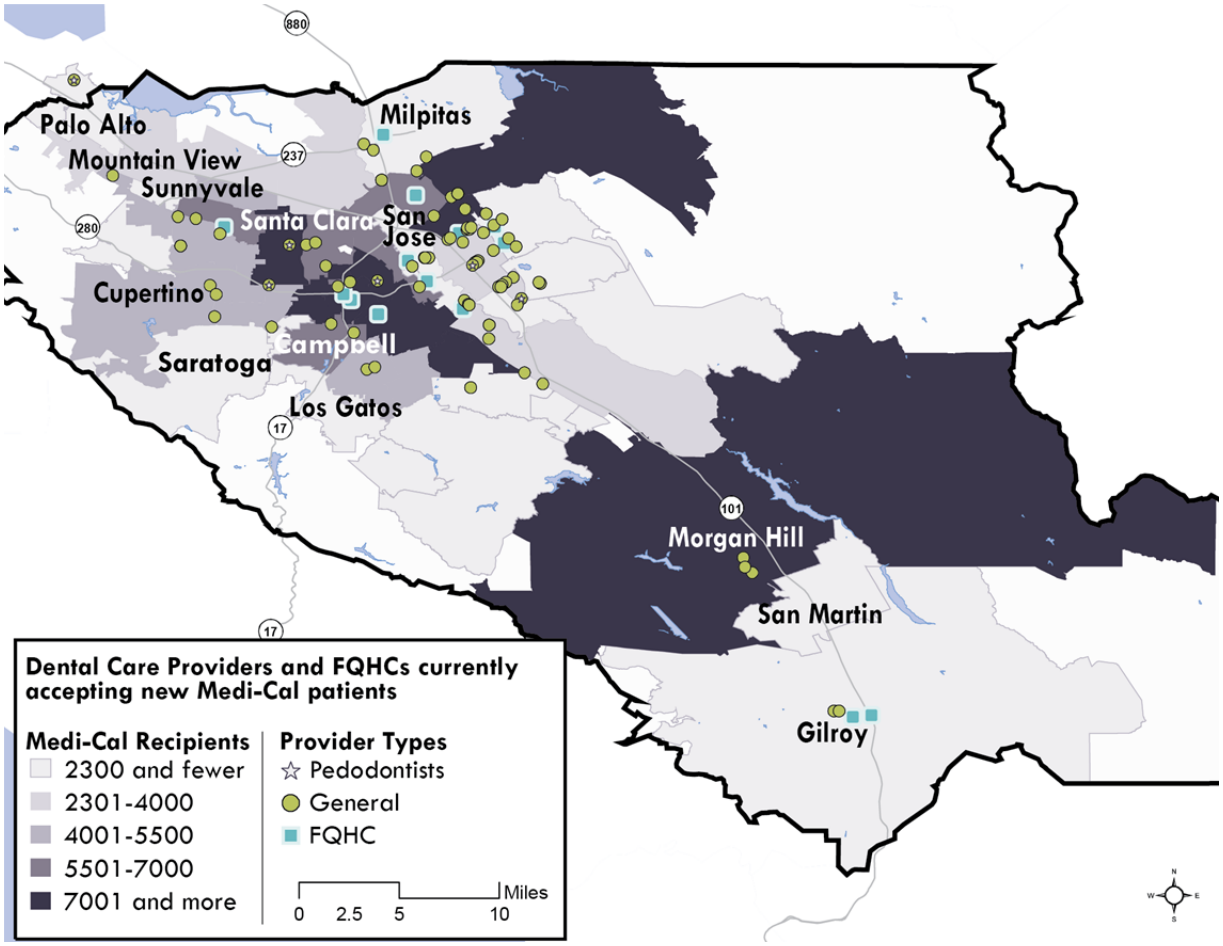
periodontal services and some diagnostic services); 2) supporting additional time needed when treating patients with special health care needs; 3) including general anesthesia and sedation, and; 4) allocating funding toward student loan repayments for new dentists. This funding allocation is predicted to bring reimbursement rates for common dental services up to 70-90% of commercial rates.[38]

Provider participation in Medi-Cal in the County of Santa Clara



There are large areas of the County of Santa Clara with high numbers of Medi-Cal recipients that are lacking private providers who are currently accepting new Medi-Cal patients (Figure 9-1). The majority of the providers accepting new Medi-Cal patients are concentrated in the northern part of the county while southern areas are left with very few providers. Community health centers (which include FQHCs and other community clinics) that provide dental services contribute to filling this gap, but these facilities are also mostly concentrated in the northern areas of the county (Figure 9-1). This leaves large areas of the county with a high number of Medi-Cal recipients, but few dental providers who are currently accepting new patients. Given their focus on low-income and underserved populations, community health centers (CHCs) (which include FQHCs, FQHC Look-Alikes, and community clinics) in the County of Santa Clara can help fill gaps when there are few private providers accepting new Medi-Cal patients. But, as can be seen in Figure 9-1, most FQHCs are located in the northern part of the county.

Figure 9-1. Medi-Cal recipients and providers/FQHCs accepting new dental patients with Medi-Cal insurance



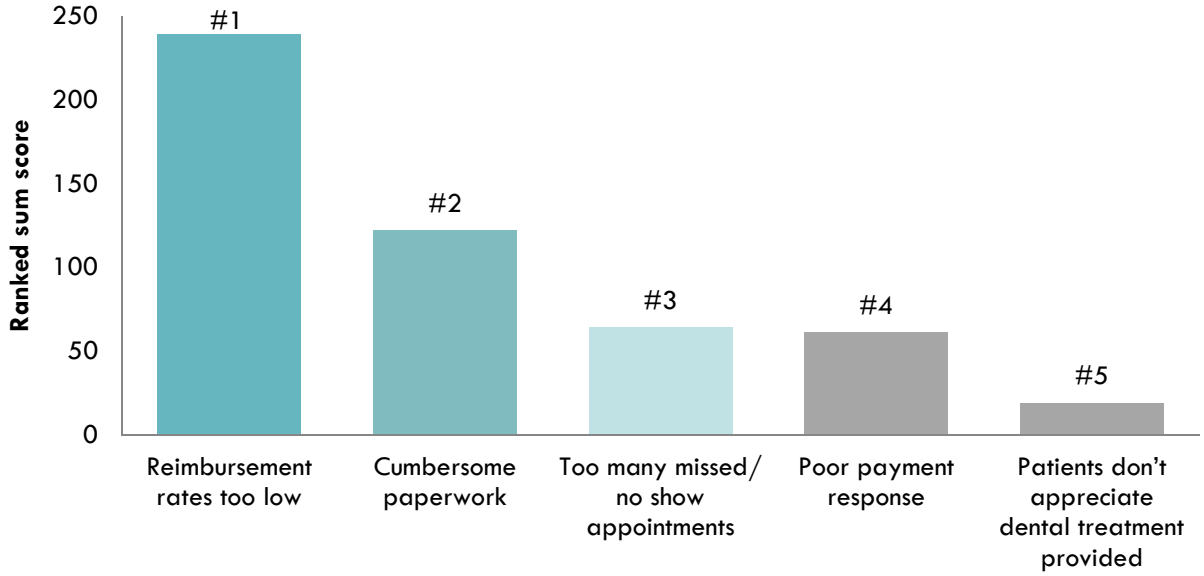
Note: FQHC = Federally Qualified Health Center
Source: Department of Health Care Services Medi-Cal Dental program;[35] County of Santa Clara Social Security Administration[36]

Each of the CHCs recently surveyed has a majority patient population who is uninsured or on Medi-Cal. The five CHCs that bill Medi-Cal reported that an average of 83% of their patients have Medi-Cal insurance while 11% of their patients are uninsured on average.[39] In addition, of the five CHCs that serve children, three reported that they have increased the number of children who have Medi-Cal insurance as a result of recent changes in reimbursement rates.[39]

Only 11% of private dental providers recently surveyed in the County of Santa Clara reported billing Medi-Cal for at least one patient in the past year.[37] Among these providers, the three most important reasons why they do not to accept Medi-Cal patients are: low reimbursement rates, cumbersome paperwork, and too many missed/no show appointments. This was closely followed by poor payment response (Figure 9-2). "Low reimbursement rates" was the most popular first choice with 70% of providers choosing this reason as their most important factor.[37] The findings in Figure 9-2 are supported by research completed by the American Dental Association which found

that the most important barrier to accepting Medi-Cal for dental providers in California was low reimbursement.[155]

Figure 9-2. Reasons not to accept Medi-Cal patients among private dental providers



Note: Methods were determined by calculating a Ranked Sum Score = (number selected MOST helpful * 3 points) + (number selected 2nd most helpful * 2 points) + (number selected 3rd most helpful * 1 point).
Source: County of Santa Clara Public Health Department, 2018 Dental Provider Survey[37]

Community health center workforce

Community health centers (CHCs) – including FQHCs, FQHC Look-Alikes, and community clinics – are considered safety net clinics and play an important role in providing much needed dental services to underserved populations. As CHCs often serve a much higher volume of patients than private providers, adequate staffing of not only dentists, but also other positions, is an important factor in their overall capacity. In 2016, 23% of full time equivalent (FTE) providers at CHCs in the County of Santa Clara were dental providers.[159] In Table 9-1, we can see that the majority of full time dental providers at CHCs recently surveyed are general dentists and dental assistants; there are relatively few FTE dental hygienists and specialist dentists working at these clinics (Table 9-1). Maximizing the utilization of different types of providers (such as dental hygienists and specialist dentists) can result in strengthening their systems of care and the quality of care that the patient population receives.

Table 9-1. Total number of dental provider and clinic staff full time equivalent (FTEs) employees at community health centers in the County of Santa Clara

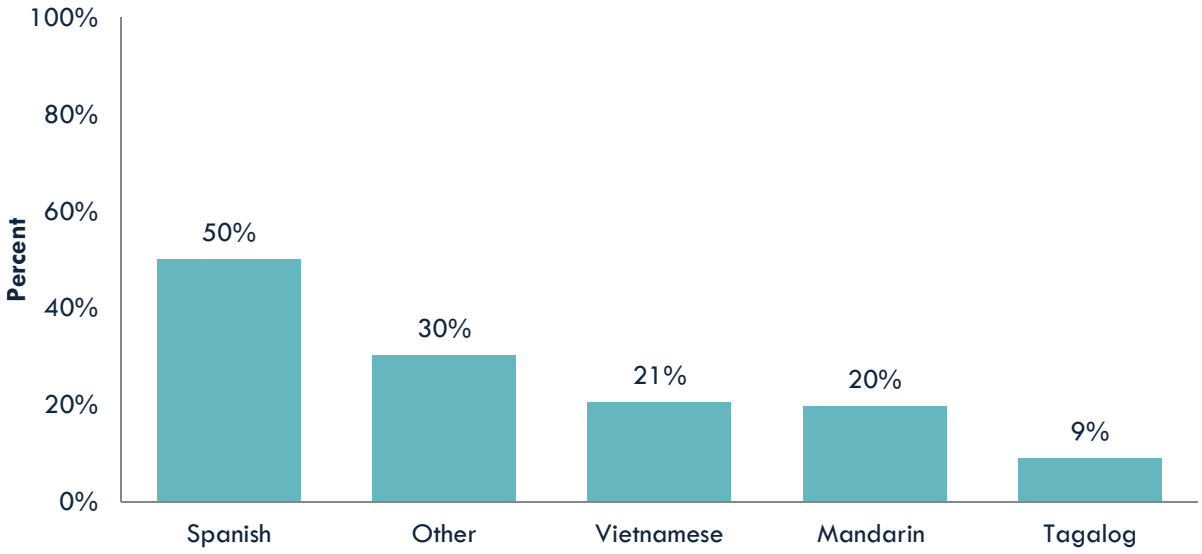
	General dentists	Pediatric dentists	Other specialists	Dental hygienists	Dental assistants	Secretary/ Receptionists
n (CHCs)	5	2	1	4	5	5
Total FTE	57.8	3.4	2	9	106	38

Source: County of Santa Clara Public Health Department, 2018 Dental Clinic Tool[39]

Private dental provider workforce

Private dental providers compose a large network of dental providers that primarily serves privately insured patients. The major challenge when considering private provider capacity to improve oral health for those who need it most is the limited number of dental providers who accept Medi-Cal. In addition, geographic location of providers (see the beginning of this chapter for more information), the languages spoken or offered using a translation service, and dental services they offer (see chapter 10) are important in relation to access to care.[157] Of the providers recently surveyed, many have the capacity to offer care in languages other than English, with the most common language offered being Spanish; various Asian languages are the other most common languages provided (Figure 9-3).

Figure 9-3. Languages offered by private dental practices



Note: Most common other languages included Farsi, Hindi, and Cantonese.
Source: County of Santa Clara Public Health Department, 2018 Dental Provider Survey[37]

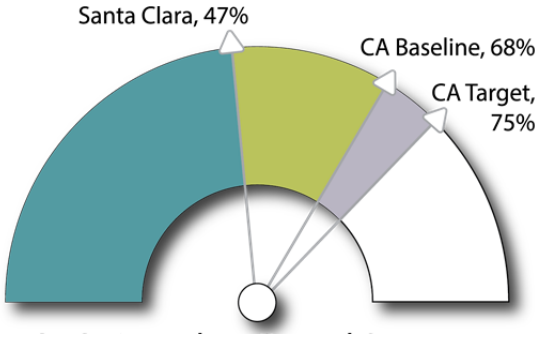
Dental care facilities and the patients they serve

Role of community health centers in reducing disparities in access to care

Community health centers play a critical role in reducing disparities and ensuring access to all types of dental care, including preventive and treatment services,[160,161] and CHCs that are designated as FQHCs receive federal funding and are required to ensure access to preventive dental services.[162] CHCs often operate as "parent organizations" that may have multiple sites, meaning that a CHC may operate multiple clinic locations with varying types of services at each. While a specific site may not provide dental care, there may be another site within the parent organization that provides dental care.

As compared to California, a lower percentage of CHCs provide dental services in the County of Santa Clara (Figure 9-4). Overall, there are 19 CHCs in the county, many of which are FQHCs. Nine of these community health centers provide dental care and some of these have multiple sites at which dental care is provided, including some school-based sites. In 2016, 24% of all encounters (N=629,901) at CHCs in the County of Santa Clara were dental encounters.[159]

Figure 9-4. Community health centers providing dental servicesin the County of Santa Clara and California



Note: Includes CHCs providing dental services at school-based health centers
Source: California Primary Care Association, County of Santa Clara Profile of Community Health Centers;[159] CA Department of Public Health, California Oral Health Program, California Oral Health Plan 2018-2028;[24] Individual CHC websites

26 **Average number of days that children wait for a dental exam or service at a CHC**

27 **Average number of days that adults wait for a dental exam or service at a CHC**

In the County of Santa Clara, both children and adults wait on average almost a month to be seen for a dental exam or service at the six CHCs recently surveyed. While there are many possible reasons for this, it is probable that a variety of capacity issues contribute. Improvements in staffing and facilities could help reduce the time that individuals wait for care.

While the number of CHCs providing dental care overall is an important indicator of capacity to serve low-income and vulnerable populations, there are also other important factors that contribute to capacity and therefore access to dental services. Hours of operation can affect access to care immensely. Offering evening and weekend hours in addition to weekday hours provides the option for working individuals and families to make appointments without missing work or school. In the County of Santa Clara, CHCs offer a variety of available appointment slots, including providing services outside of traditional operating hours, an important step in increasing access to care. Five of the six CHCs are open during traditional operating hours

(Monday-Friday, 9:00am-5:00pm) in addition to some evenings and weekends, while one CHC is open only on weekends (Table 9-2).

Table 9-2. Dental service availability outside of traditional operating hours at community health centers in the County of Santa Clara

	Number of CHCs (n=6)
Open outside of traditional operating hours:	6
Open during evenings on weekdays	4
Open on weekends	5

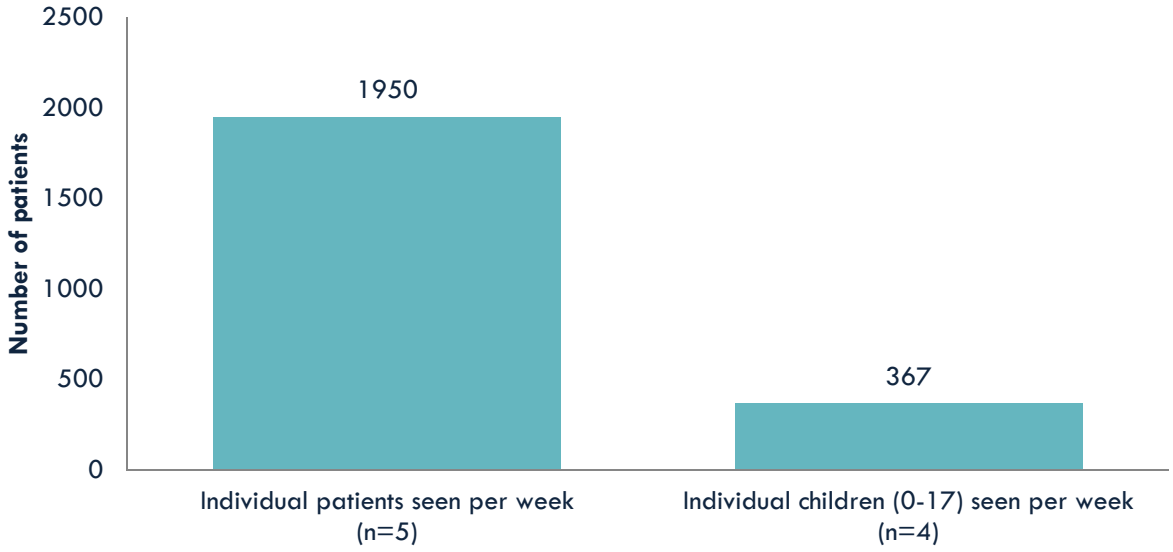
Source: County of Santa Clara Public Health Department, 2018 Dental Clinic Tool[39]

The number of operatories, or spaces equipped for providing multiple levels of dental treatments, is another indicator that speaks to capacity. In theory, the more operatories that a clinic has, the more care they can provide. To increase capacity for providing care, dental clinics can either build new operatories within an individual clinic, and/or improve their efficiency when utilizing the operatories they have. While not always feasible, it is something to consider when there is a need to expand the services. CHCs in the County of Santa Clara have wide variation in the number of operatories they hold, ranging from 3 to 33.[39]

Patients served at community health centers

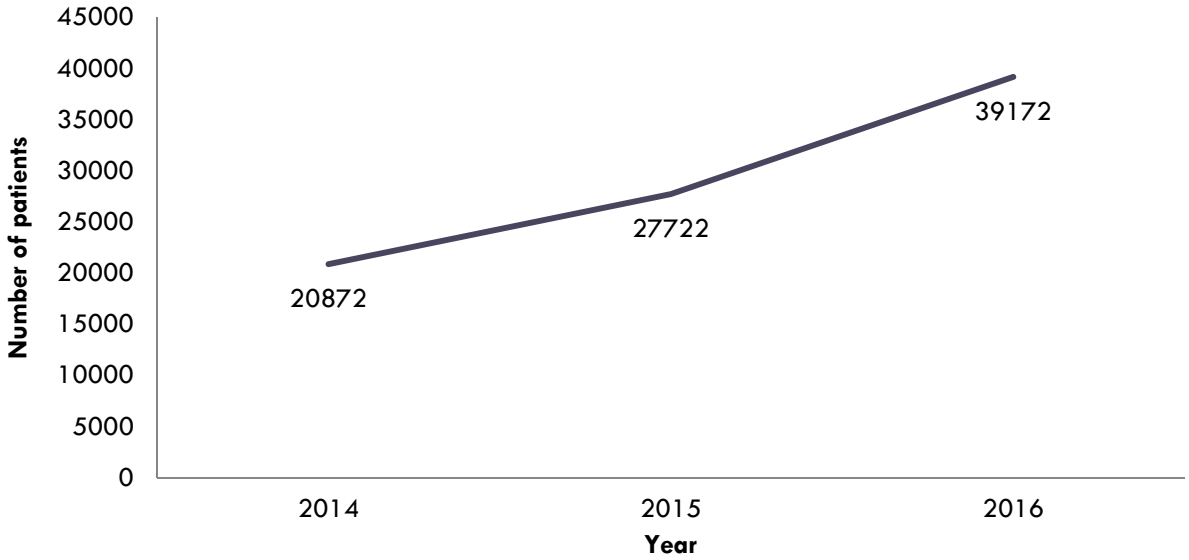
Five of the six CHCs recently surveyed serve patients of all ages, while one clinic serves only adults. Figure 9-5 provides a snapshot of the number of individual patients that are seen by these clinics for dental services. There has been a reported increase in the number of patients seen for dental services each year for three of the CHCs (Figure 9-6). Though the number of patients seen each year is only available for three CHCs, these three serve a large portion of the low-income population that receives services at CHCs in the County of Santa Clara.

Figure 9-5. Number of dental patients seen per week at community health centers in the County of Santa Clara



Source: County of Santa Clara Public Health Department, 2018 Dental Clinic Tool[39]

Figure 9-6. Number of unduplicated dental patients served each year at community health clinics (n=3) in the County of Santa Clara



Source: County of Santa Clara Public Health Department, 2018 Dental Clinic Tool[39]

Tables 9-3 and 9-4 describe the demographics and characteristics of patients at each clinic. With the exception of one CHC, which primarily serves Asian populations, all of the clinics serve a large percentage of Latinx patients (Table 9-3). In addition, higher percentages of Latinx and African American residents are seen at CHCs compared to the countywide race/ethnicity distribution. The majority of dental patients at CHCs in the County of Santa Clara are between the ages of 25 and 64 (Table 9-4).

Table 9-3. Race/ethnicity distribution of active dental patients at community health clinics in the County of Santa Clara

	Race/ethnicity of active patients			
	African American	Asian/ Pacific Islander	Latinx	White
Range (%)	1 - 20	5 - 90	2 - 67	6 - 20
Average (%)	7	28	45	15

Note: Average percentage is not weighted; Percentages may not add to 100% due to rounding
Source: County of Santa Clara Public Health Department, 2018 Dental Clinic Tool[39]

Table 9-4. Age distribution of active dental patients at community health centers in the County of Santa Clara

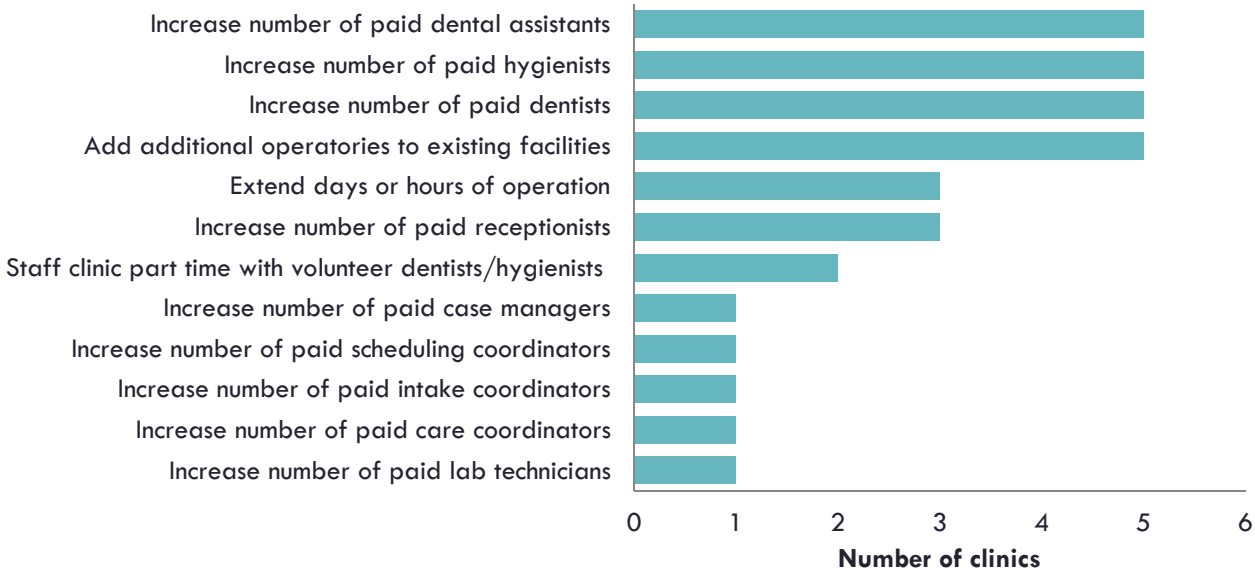
Range (%)	8 - 16	15 - 24	7 - 11	2 - 23	35 - 75	7 - 20
Average (%)	9	18	9	10	47	15

Note: Average percentage is not weighted; Percentages may not add to 100% due to rounding; One CHC serves only adult patients (18 and older); Data unavailable for two CHCs
Source: County of Santa Clara Public Health Department, 2018 Dental Clinic Tool[39]

Strategies for improving capacity at community health centers

Most CHCs report that they could increase the number of patients seen, and/or decrease wait times, if they were able to increase the number of paid dentists, dental assistants, and dental hygienists. Many also reported that adding additional operatories and extending days or hours of operation could help increase capacity to see patients (Figure 9-7).

Figure 9-7. Strategies to increase the number of patients at CHCs in the County of Santa Clara



Source: County of Santa Clara Public Health Department, 2018 Dental Clinic Tool[39]

Role of school-based health centers in access to care for children and youth

School-based health centers (SBHCs) provide medical and dental services directly to students on a school campus. While types of services and staffing can vary, SBHCs generally offer primary care like other community health centers at no or low cost. SBHCs are effective at improving access to health care for children and youth by bringing services directly to students and preventing absenteeism that results from health and dental issues.[163–165] Students who use SBHCs are more likely to have yearly dental and medical check-ups.[166,167] In California, most SBHCs provide medical services, reproductive health services, mental health services, and health education, while only 42% of centers provide preventive dental services and 23% provide dental treatment.[168]

There are 15 SBHCs in the County of Santa Clara, 10 of which provide dental care.[169] All but one of the SBHCs are located in San Jose; the vast majority of school districts in the county are without a school-based health center that provides dental care. Of the ten that do provide dental, all but one provide both dental prevention and treatment services (Table 9-5).

Table 9-5. School-based health centers providing dental services in the County of Santa Clara

School-Based Health Center	City	Dental Prevention	Dental Treatment
Independence High School Clinic	San Jose	✓	✓
Overfelt (High School) Neighborhood Health Clinic	San Jose	✓	✓
San Jose High School/ Neighborhood Health Clinic	San Jose	✓	
Washington (Elementary School) Neighborhood Health Clinic	San Jose	✓	✓
Franklin-McKinley Neighborhood Health Clinic	San Jose	✓	✓
Health Mobile	Santa Clara	✓	✓
Mt. Pleasant High School Clinic	San Jose	✓	✓
Andrew Hill High School Clinic	San Jose	✓	✓
Yerba Buena High School School-Based Health Center	San Jose	✓	✓
Silver Creek (High School) Clinic	San Jose	✓	✓

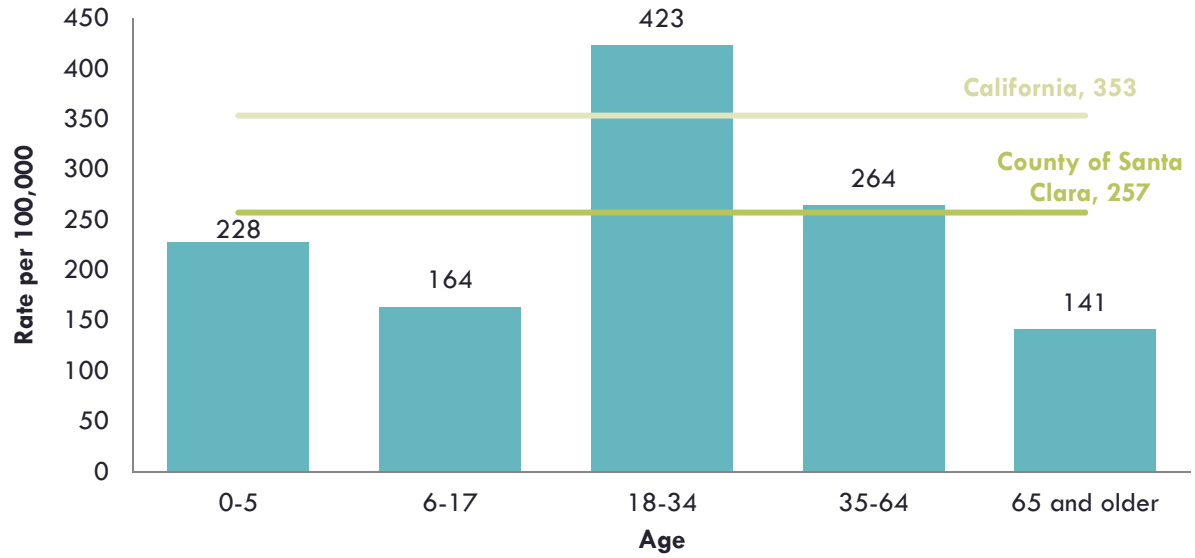
Source: California School-Based Health Alliance[169]

Emergency departments

Untreated dental disease can develop into serious problems that require an emergency department visit. And while a crucial resource to have when needed, dental care in emergency departments is significantly more expensive than providing preventive outpatient dental care.[170] While emergency departments are not an ideal destination for dental care, they are used when dental issues become highly acute. In most cases the services one receives in an emergency department is limited to the provision of antibiotics and pain killers, and no dental treatment is provided.

In the County of Santa Clara, the rate of emergency department visits for non-traumatic dental conditions (NTDCs) is lower than that for the state, but there are significant differences between age groups with the highest rate among residents ages 18 to 34. Children ages 0 to 5 also use the emergency department for dental needs at a higher rate than other county residents, and at such a young age, most NTDCs are fully preventable (Figure 9-8).

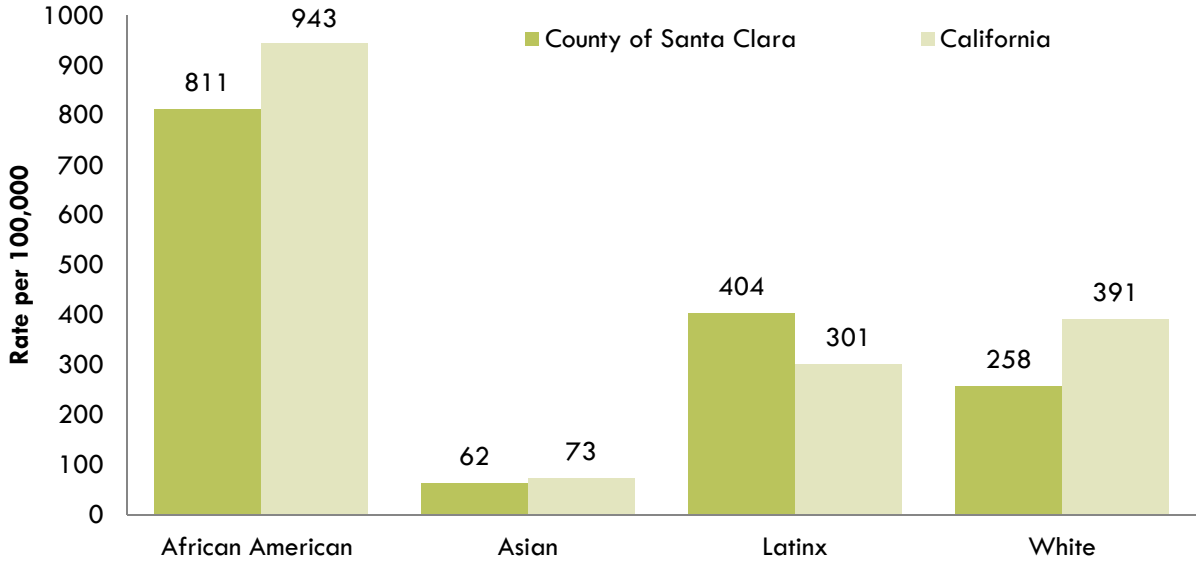
Figure 9-8. Rate of emergency department visits for non-traumatic dental conditions in the County of Santa Clara and California, by age group



Note: The rates of NTDCs do not exclude visits from the same person coming multiple times. The rates are not age-adjusted
Source: Office of Statewide Health Planning and Development, 2012-2016 Emergency Department Data.[40]

There are also significant differences in the rate of emergency department visits for NTDCs between racial/ethnic groups. Asian residents use the emergency department for dental needs at a lower rate than all other races/ethnicities, while African American residents have the highest rate of use (Figure 9-9). Latinx residents also have high rates of emergency department visits, and are the only group for whom the rate is higher than in California.

Figure 9-9. Rate of emergency department visits for non-traumatic dental conditions in the County of Santa Clara and California, by race/ethnicity



Note: The rates of NTDCs do not exclude visits from the same person coming multiple times. The rates are not age-adjusted.
Source: Office of Statewide Health Planning and Development, 2012-2016 Emergency Department Data.[40]

While emergency departments are vital resources for urgent and acute issues, many dental conditions are not best treated in the emergency department, given the lack of dentists. Improved capacity for and access to preventive and regular dental care could help reduce rates of emergency department visits for non-traumatic dental conditions, as many are preventable and/or easily treated in a dental office if identified early.

CHAPTER 10 : RISK AND PROTECTIVE FACTORS

While most dental professionals provide oral health education to their patients, fewer implement essential preventive strategies such as caries risk assessments, application of fluoride varnish and dental sealants, and tobacco cessation counseling. Community water fluoridation and prescription of fluoride supplements for those who live in sub-optimally fluoridated areas are proven effective prevention strategies, though both are currently being implemented inconsistently.

Oral health education, screening, and preventive strategies

This section provides a snapshot of oral health education, preventive, and screening activities that are being conducted primarily by community health centers and private dental care providers. More information about related activities that are being conducted by community-based and governmental programs can be found in Chapter 11 and Appendix C.

Oral health education and disease prevention: Why it's important

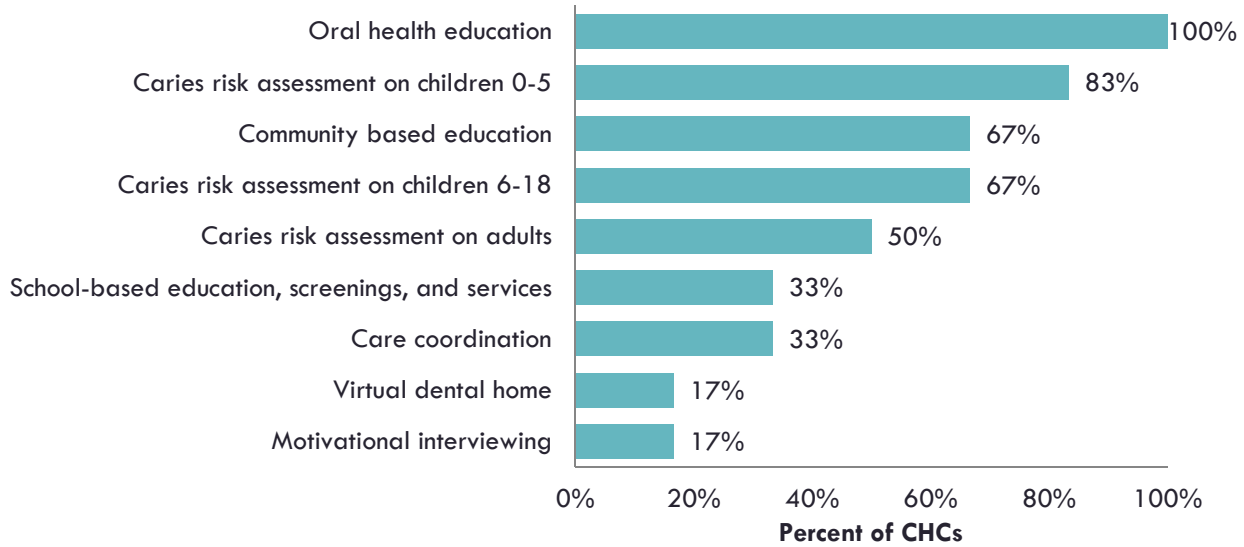
While oral health education alone may not lead to better outcomes, it can help empower individuals and families to take care of their oral health needs and prevent disease. Oral health education can come from many sources, including dental care providers, local health departments, and programs such as First 5, the Child Health and Disability Program, and Head Start/Early Head Start.[30] Oral health education is especially important for children and parents/caregivers given the importance of preventing oral disease in childhood. Children and adolescents can be especially receptive to learning new health information and are likely to carry what is learned throughout their lives.[171] In general, oral health education interventions have been found to be effective at improving oral health behaviors (e.g. twice daily brushing, decreased consumption, increase in use of dental services) and oral health status (e.g. decreases in/prevention of lesions and caries).[172] The oral health literacy of caregivers has also been shown to be associated with fewer dental treatment needs among their children.[173]

In addition to oral health education, caries risk assessments, an individualized risk assessment regarding the probability that caries (cavities or lesions) will develop or grow, is a service that dental providers may provide to their patients of all ages.[174–177] This assessment is especially important for children ages 0 to 5 as it serves as the foundation for identifying the child's risk factors for early childhood caries and establishing comprehensive oral health care practices.[174,175] The information gained from such systemic assessment guides the dentist in the decision-making process for treatment and preventive protocols, such as topical fluoride treatment and sealants, by allowing them to create "care paths" for patients' disease management based on their level of risk.[174] This is especially important for children who already have signs of dental disease and those who are at higher risk for future caries.[175,178]

Oral health education and disease prevention in the County of Santa Clara

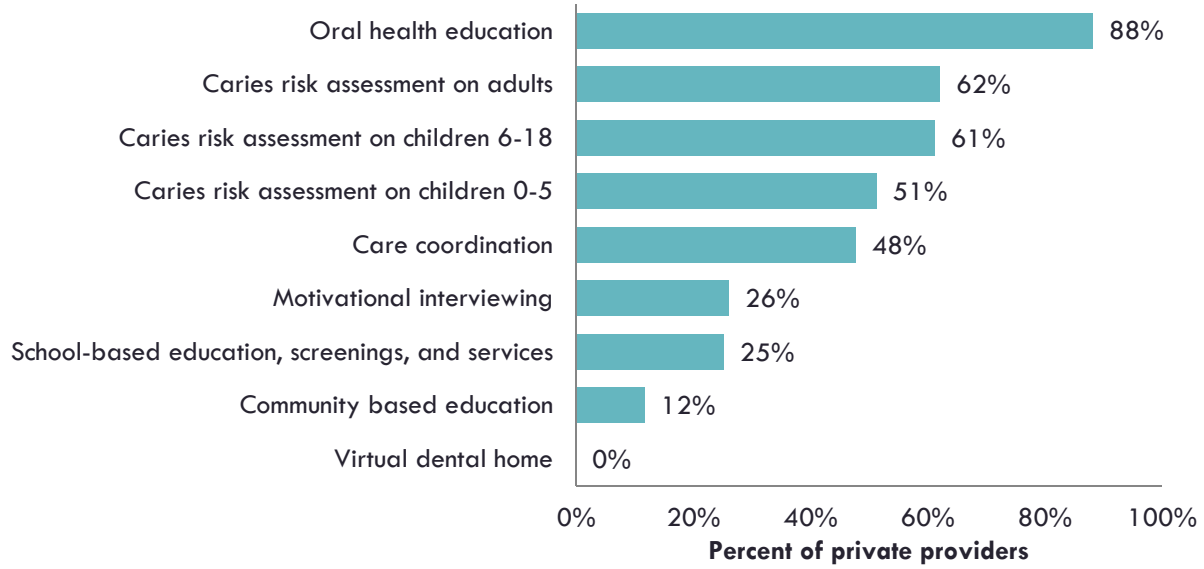
Figures 10-1 and 10-2 outline prevention and risk reduction activities conducted at a sample of community health centers and private dental offices in the County of Santa Clara. All six (100%) of the community health centers recently surveyed participate in oral health education activities with their patients (Figure 10-1) while only 88% of private providers surveyed report doing so (Figure 10-2). In addition, a greater percentage of CHCs participate in community-based education activities compared to private providers. Five (83%) of the CHCs report providing caries risk assessments for patients ages 0 to 5 years, though only four (67%) report this activity for their patients ages 6 to 18 years (Figure 10-1). A greater percentage of private providers report conducting caries risk assessments on patients over the age of 6 than for patients ages 0 to 5, though less than two-thirds report this activity at all (Figure 10-2). In addition, all six of the CHCs recently surveyed provide both dental and medical services. [39]

Figure 10-1. Education and prevention activities at CHCs in the County of Santa Clara



Source: County of Santa Clara Public Health Department, 2018 Dental Clinic Tool[39]

Figure 10-2. Education and prevention activities at private dental offices in the County of Santa Clara

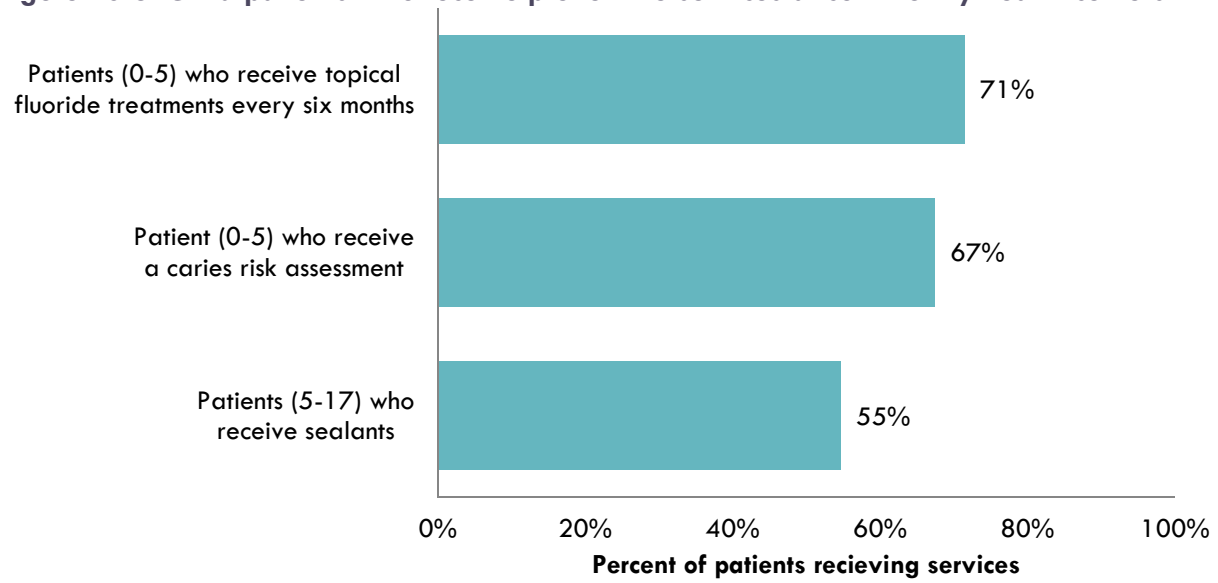


Source: County of Santa Clara Public Health Department, 2018 Dental Provider Survey[37]

Preventive dental care for children

Given the short and long term risks that caries and tooth decay can have when experienced early in life, and the increased prevalence among low-income and vulnerable residents, as presented in Chapter 4, it is important to understand what preventive services patients receive. On average, over half of child patients at CHCs receive topical fluoride treatments, caries risk assessments, and sealants (Figure 10-3). A child's risk level, as determined through a caries risk assessment, guides preventive strategies, such as application of fluoride varnish. An average of 67% of patients ages 0 to 5 receive a caries risk assessment at CHCs, while slightly more receive topical fluoride treatments and fewer children (ages 5 to 17) receive sealants (Figure 10-3). One CHC reported that dental hygienists, as well as dentists, are able to provide sealants, a task-shifting activity that can help increase capacity to provide services.[39]

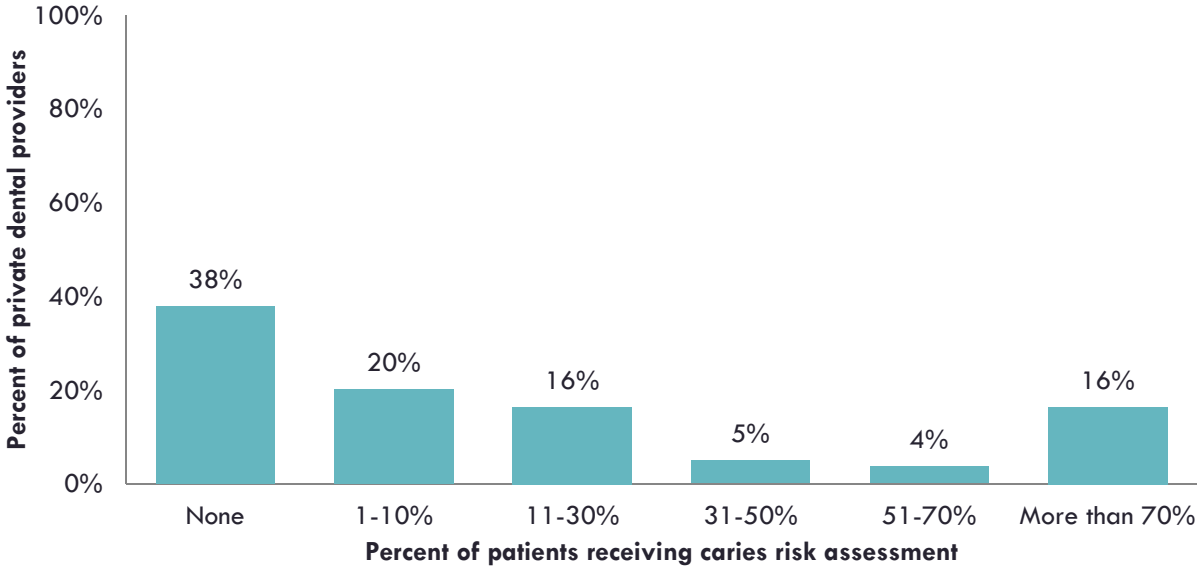
Figure 10-3. Child patients who receive preventive services at community health centers



Source: County of Santa Clara Public Health Department, 2018 Dental Clinic Tool[39]

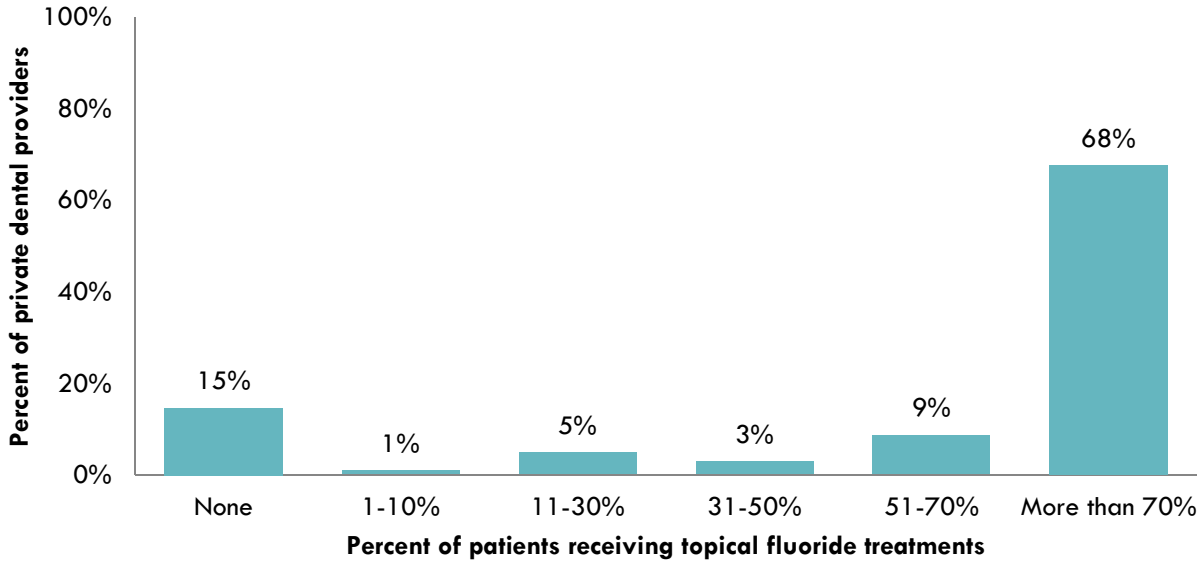
The percentage of children ages 0 to 5 receiving caries risk assessments differs between CHCs and private dental practices recently surveyed. Less than 30% of patients ages 0 to 5 receive a caries risk assessment at three-quarters of the private dental practices (Figure 10-4). Despite the low prevalence of caries risk assessments received by young children at private dental practices, over 70% of patients ages 0 to 5 receive topical fluoride treatments every six months at almost three-quarters of these private practices (Figure 10-5).

Figure 10-4. Child patients (ages 0 to 5) who receive a caries risk assessment from private dental providers



Source: County of Santa Clara Public Health Department, 2018 Dental Provider Survey[37]

Figure 10-5. Child patients (ages 0 to 5) who receive topical fluoride treatments every six months from private dental providers

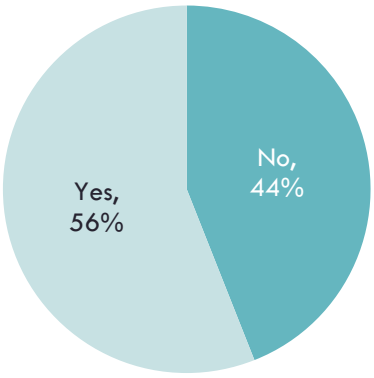


Source: County of Santa Clara Public Health Department, 2018 Dental Provider Survey[37]

Oral health education for pregnant women

Given the links between perinatal and child oral health,[50,147] as well as link between oral health during pregnancy and adverse pregnancy outcomes (e.g. preterm birth, low birthweight, miscarriage, and pre-eclampsia),[48] pregnancy is a vital time for women to learn about the importance of dental care and good oral health practices. With the numerous points of contact with health professionals that women encounter during pregnancy, there are many opportunities for pregnant women to learn about when they need to visit a dentist and how to best care for their teeth from health care providers.[179,180] Despite the frequent opportunities for oral health education during pregnancy, only 56% of pregnant or recently pregnant women recently surveyed in the County of Santa Clara report receiving education about either the importance of seeing a dentist during pregnancy or how to care for their teeth and gums (Figure 10-6).

Figure 10-6. Pregnant or recently pregnant women who received education during a prenatal visit about 1) the importance of seeing a dentist during pregnancy, and/or 2) how to care for teeth and gums during pregnancy



Source: County of Santa Clara Public Health Department, 2018 Adult Oral Health Intercept Survey[31]

Tobacco consumption and smoking cessation: Why it's important

Tobacco use has many negative effects on oral health including on oral health status, risk of oral cancer, and on oral healing rates.[181,182] Current smokers are significantly more likely than former and nonsmokers to have poor oral health status, to have three or more oral health problems, and to have not had a dental visit in more than five years or ever.[183] There is some evidence that tobacco use and secondhand smoke can lead to dental caries and failure of dental implants among those exposed. Smoking is also associated with many types of cancer, and tobacco use is a leading risk factor for oral cancer.[181]

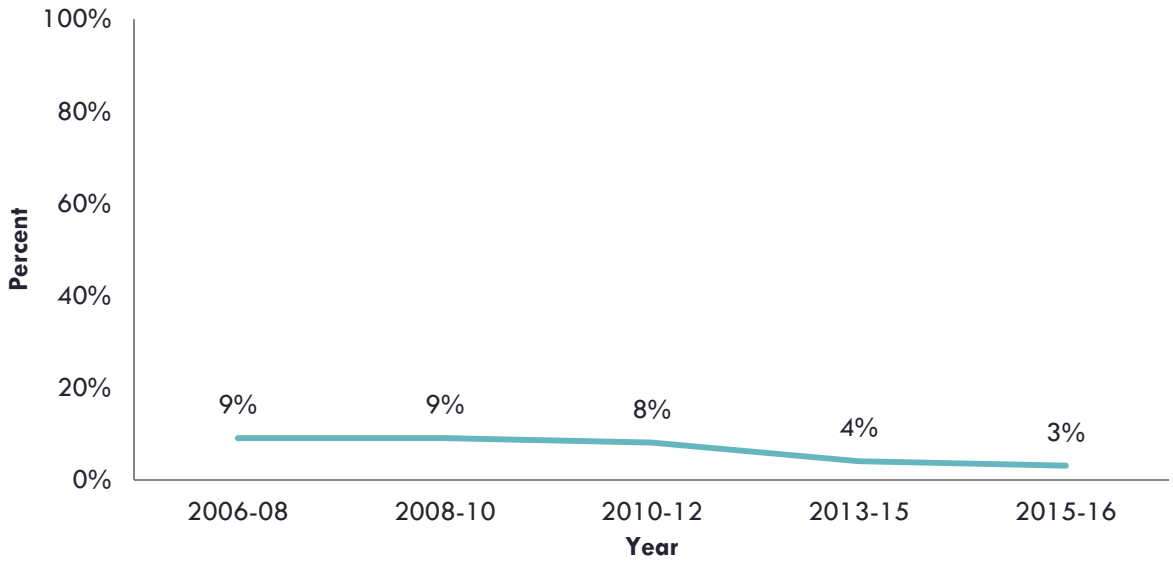
Research has shown that smoking cessation can slow down the progression of dental and gum disease, lower the risk of tooth loss, and may help restore the normal healing response in the oral cavity, or the length of time and quality of healing when there is a wound.[182,184,185] Dental care providers can play an important role in helping their patients avoid oral health issues and slow progression of disease by contributing to tobacco cessation efforts. The continued contact that dentists and dental clinics may have with patients, especially if they need to return multiple times for treatment, provides ample opportunity for dental care providers to help their patients both avoid initiating tobacco use and quit if they are current users.[184] Evidence suggests that behavioral interventions implemented by dental care providers such as brief counseling, provision of self-help materials, pharmacological support, or referrals to other support resources, may help tobacco users quit.[186] Knowing the extent of tobacco use among different age groups and the tobacco cessation strategies that are being implemented by dental providers will help in planning further strategies to strengthen such approaches.

Tobacco consumption and smoking cessation in the County of Santa Clara

Tobacco use

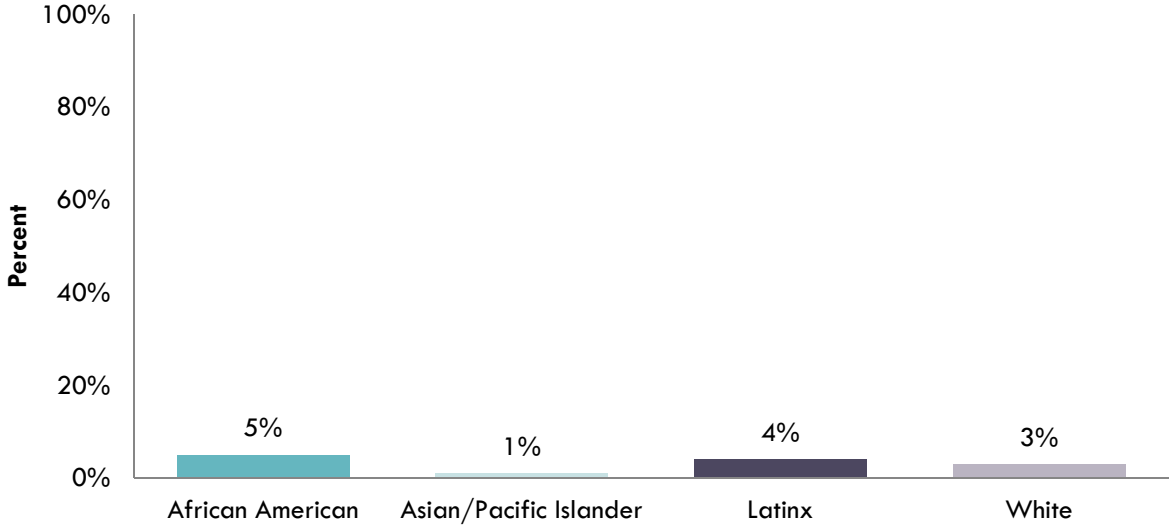
Three (3) percent of middle and high school students in the county smoked at least one cigarette one or more days in the past 30 days, a percentage that has decreased over time (Figure 10-7). The percentage of cigarette use in the past 30 days varies by race/ethnicity, with slightly higher percentages of cigarette use among African American and Latinx students (Figure 10-8).

Figure 10-7. Cigarette use one or more days in the past 30 days among middle and high school students in the County of Santa Clara



Source: California Healthy Kids Survey 2006-2016[187]

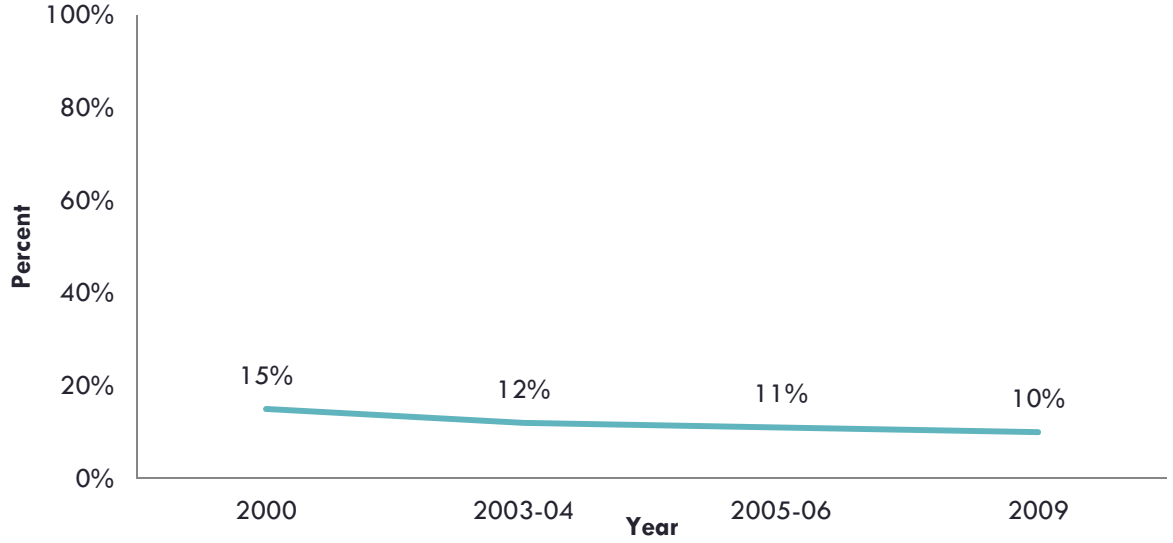
Figure 10-8. Cigarette use one or more days in the past 30 days among middle and high school students in the County of Santa Clara, by race/ethnicity



Source: California Healthy Kids Survey 2015-16[120]

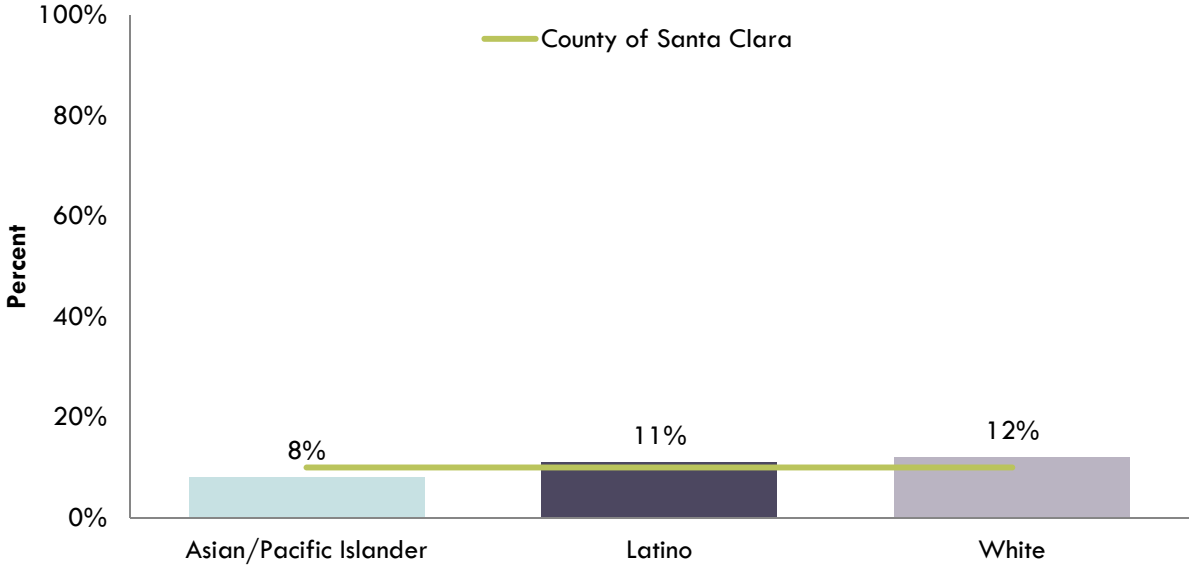
Among adults in the County of Santa Clara, the percentage of current smokers decreased from 15% in 2000 to 10% in 2009 (Figure 10-9). The most recent data (2013-2014) continues to show that 10% of adults in the County of Santa Clara are current smokers. There is little variation in smoking status by race/ethnicity, though a slightly higher percentage of White and Latinx residents are current smokers compared to Asian residents (Figure 10-10). Despite the lower percentage over all smoking status among Asian residents in the county varies by gender and subgroup, with higher rates among Asian men (11%) and Vietnamese residents (15%).[21,188]

Figure 10-9. Adults who are current smokers in the County of Santa Clara



Note: Due to changes in the BRFS survey methodology in 2013-14, estimates from 2013-14 are not directly comparable to estimates from prior surveys.
Source: County of Santa Clara Public Health Department, 2000-09 Behavioral Risk Factor Survey[89]

Figure 10-10. Adults who are current smokers in the County of Santa Clara, by race/ethnicity



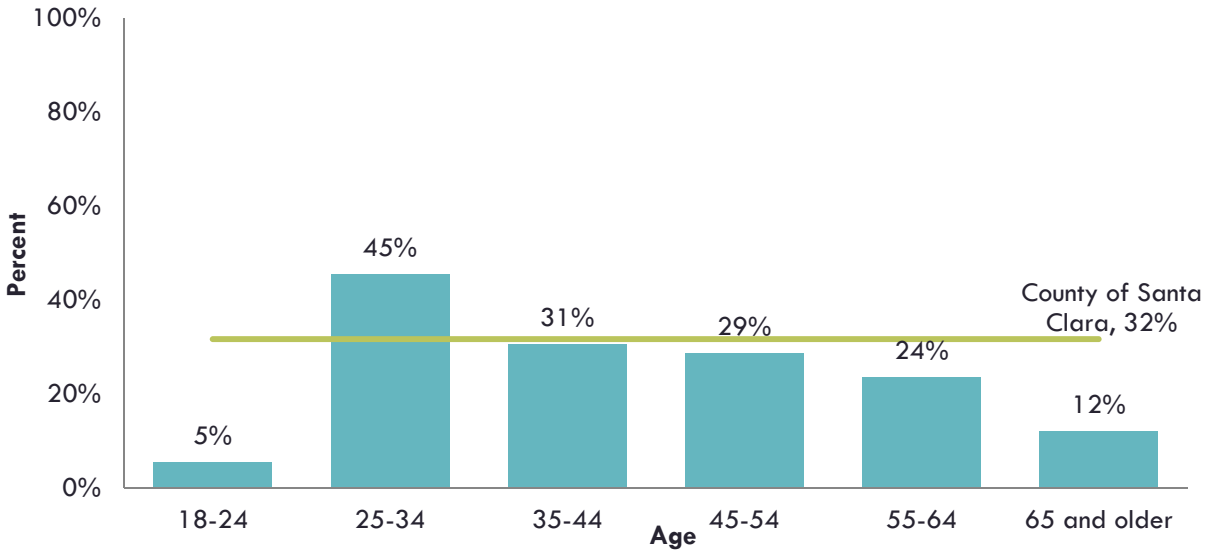
Note: Data for African Americans not shown due to small sample size. Due to changes in the BRFS survey methodology in 2013-14, estimates from 2013-14 are not directly comparable to estimates from prior surveys.
Source: County of Santa Clara Public Health Department, 2013-14 Behavioral Risk Factor Survey[21]

Tobacco education and cessation efforts

The California Oral Health Plan has included tobacco cessation counseling at dental offices as an important indicator of oral health. In 2015, 36% dentists in California were incorporating this into their practice. California has set a target of 39% of dental offices providing tobacco cessation counseling by 2025.[24]

In a recent survey of adults in the County of Santa Clara, 32% of adults who visited the dentist in the past 12 months received tobacco cessation education at that visit, with the highest percentage among adults ages 25 to 34 and the lowest percentage among adults ages 18 to 24 (Figure 10-11). In addition, focus group participants stated that use of tobacco products stains teeth, and a few mentioned that it could cause cancer, although most referred to lung cancer, not oral cancer. Reports of whether or not this curbed tobacco usage was inconsistent across focus groups or was not discussed.[113]

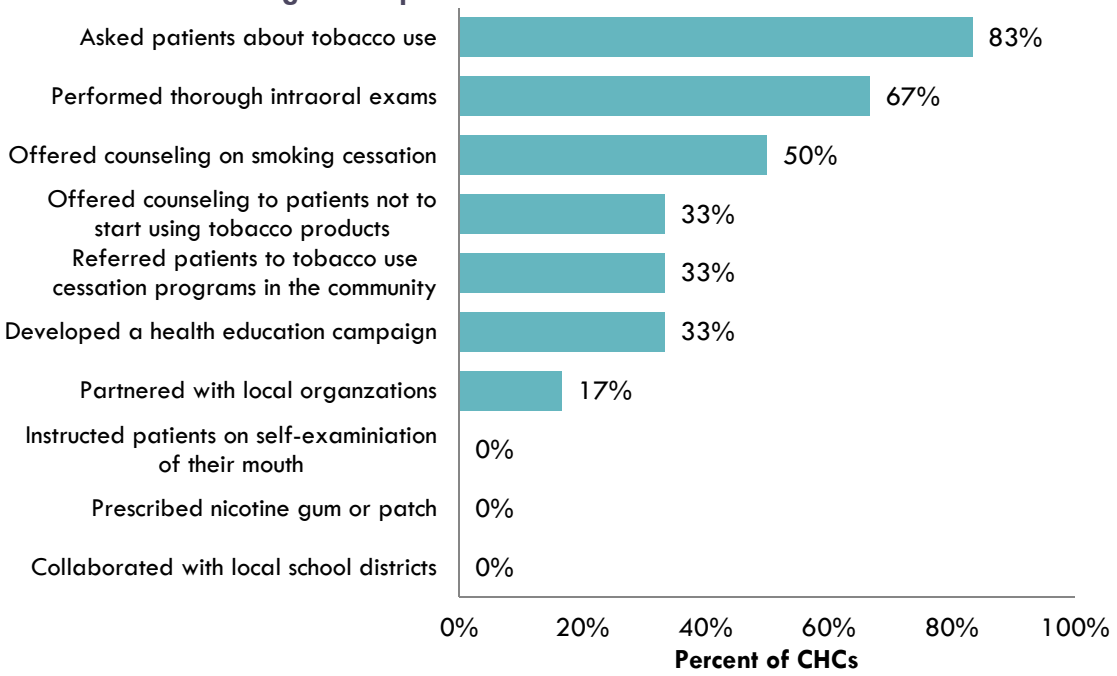
Figure 10-11. County of Santa Clara residents who visited a dental provider in the past 12 months and received tobacco education at that visit



Source: County of Santa Clara Public Health Department, 2018 Adult Oral Health Intercept Survey[31]

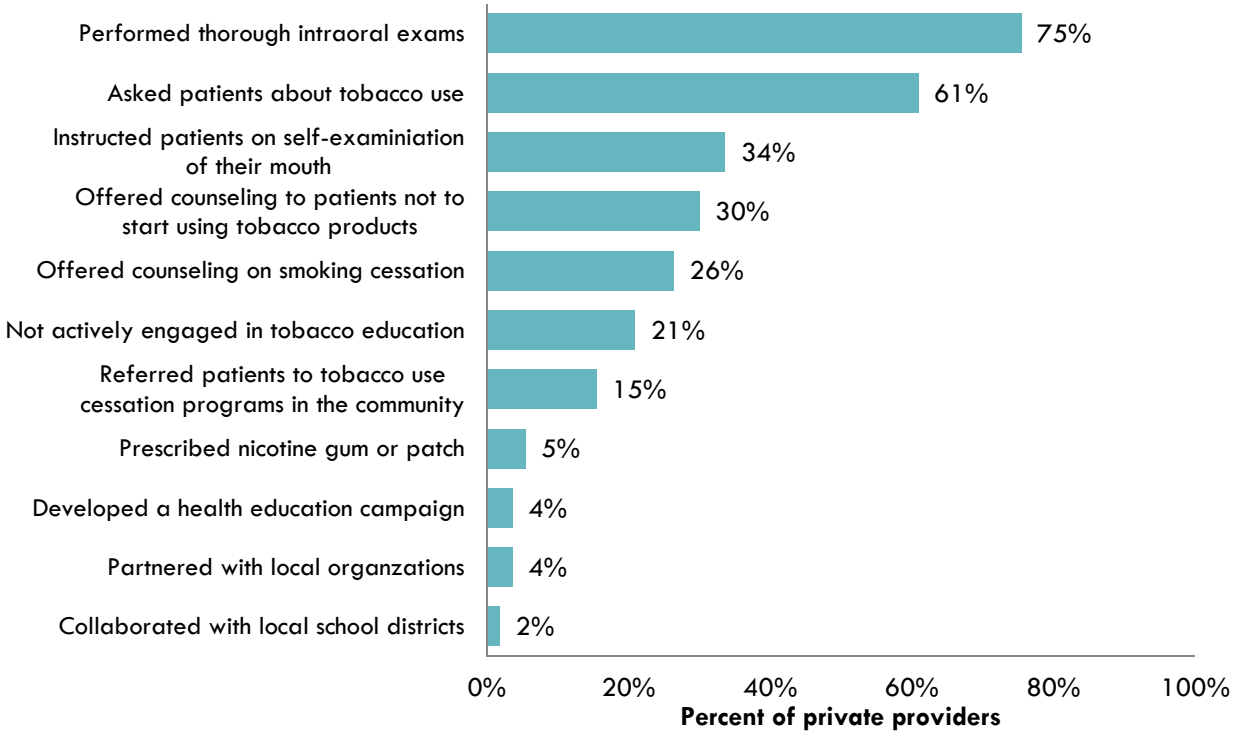
All six CHCs recently surveyed participate in some type of tobacco related education and cessation activities (Figure 10-12), though 21% of private dental providers in a separate survey reported not being actively engaged in tobacco cessation education activities (Figure 10-13). Both CHCs and dental providers reported that the two most common activities are asking patients about their tobacco use and performing intra oral exams. In addition, both CHCs and private dental providers report supporting or participating in community-based tobacco education activities or offering outside referral to cessation programs at lower rates (Figures 10-12 and 10-13). No CHCs reported collaborating with school districts, prescribing nicotine gum or patch, or instructing patients on self-examinations of their mouth (Figure 10-12).

Figure 10-12. Ways in which community health clinics support tobacco use prevention or addressed tobacco use among dental patients



Source: County of Santa Clara Public Health Department, 2018 Dental Clinic Tool[39]

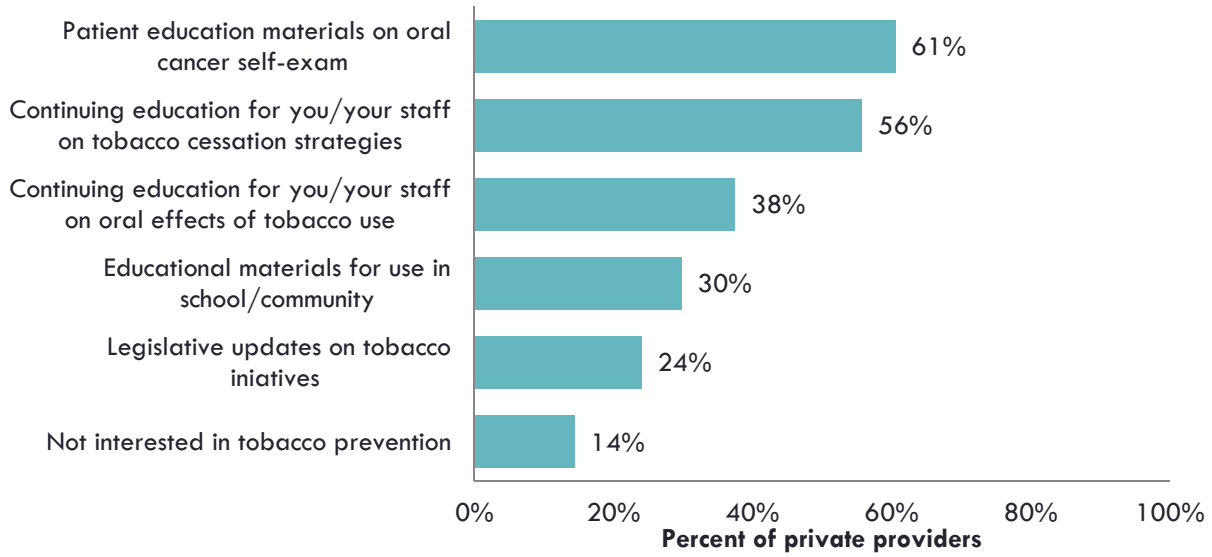
Figure 10-13. Ways in which private dental providers support tobacco use prevention or addressed tobacco use among patients



Source: County of Santa Clara Public Health Department, 2018 Dental Provider Survey[37]

Most of the providers in this survey show interest in participating in tobacco prevention strategies. Figure 10-14 shows private dental providers' suggestions to strengthen tobacco prevention programs and activities at their practices. These suggestions include a combination of trainings and continuing education courses for providers and their staff, as well as providing materials and updates for patient education and policy initiatives. The providers identified providing patients with educational materials on how to conduct an oral cancer self-exam as the most helpful strategy (Figure 10-14).

Figure 10-14, Dental providers' suggestions to help them conduct an active tobacco prevention program



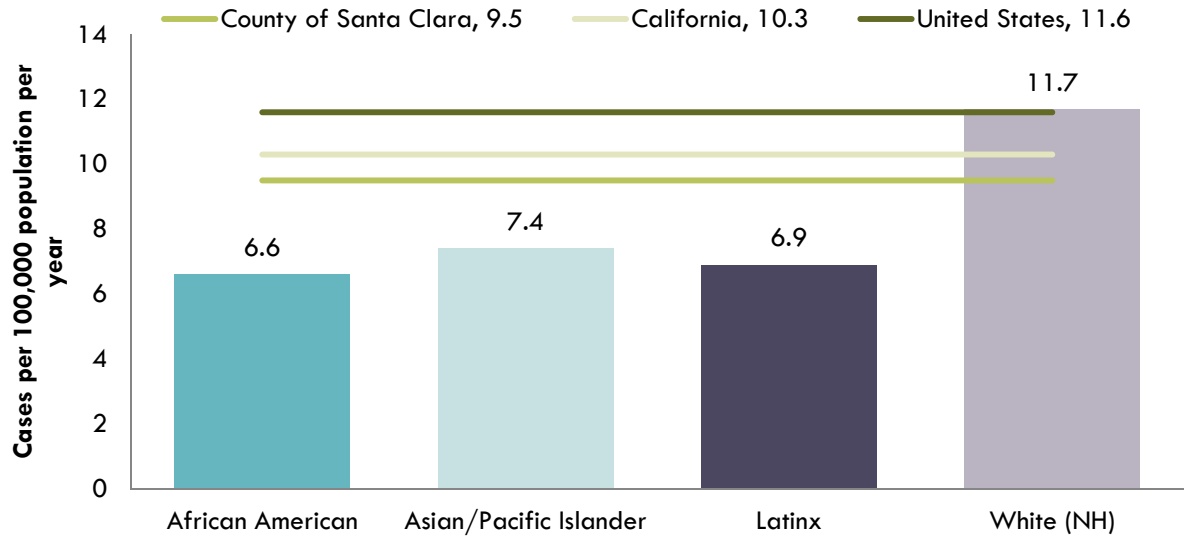
Source: County of Santa Clara Public Health Department, 2018 Dental Provider Survey[37]

Oral and pharyngeal cancer screening and detection

In California, the five-year survival rate of people with oral cancer when diagnosed at an early stage is significantly higher (85%) than once it has spread to lymph nodes (65%), or other parts of the body (40%).[189] Only 23% of oral and pharyngeal cancers were detected at the earliest stage in 2011, which is lower than the United States percentage of 31%.[30] Forty-two (42) out of 542 regions in California had significantly elevated proportions of oral and oropharyngeal cancers cases diagnosed at an advanced stage, including one region in the County of Santa Clara. The area defined as Gilroy/Morgan Hill, Rucker/San Martin had 76% of cases diagnosed at an advanced stage.[190]

Oral cavity and pharynx cancer incidence rates have remained stable in the County of Santa Clara for the past 5 years with an incidence rate of 0.6 cases per 100,000 people per year. The average annual count of these cancers in the county is 186 cases.[191] The rate of these cancers in the county is slightly lower than both the California and United States rates, though White residents have a higher incidence rate compared to other race/ethnicities (Figure 10-15).

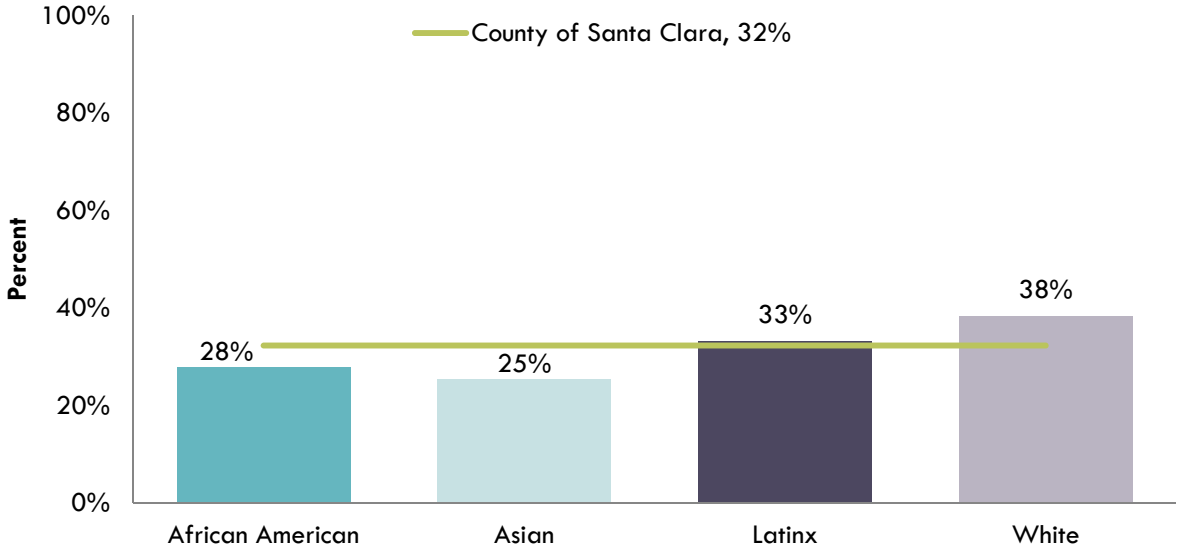
Figure 10-15. Age-adjusted incidence rate of oral cavity and pharynx cancer, 2011-2015



Notes: Incidence rates are age-adjusted to the 2000 US standard population
Source: Centers for Disease Control, National Cancer Institute; State Cancer Profiles, 2011-2015 Incidence Rates Table[191]

Among adults in the County of Santa Clara who visited a dental provider in the past year, 32% received education about self-examinations for oral cancer. Fewer African American and Asian adults received this information compared to White adults (Figure 10-16).

Figure 10-16. County of Santa Clara residents who visited a dental provider in the past 12 months and received education about self-examinations for oral cancer, by race/ethnicity



Source: County of Santa Clara Public Health Department, 2018 Adult Oral Health Intercept Survey[31]

Water systems and fluoridation

Importance for oral health

The presence of the supplemental fluoride in drinking water at optimal levels is beneficial for oral health, and is a cost-effective and safe way to prevent tooth decay and cavities.[41] When sizeable sources of water are fluoridated, all recipients are afforded certain health-related protections, including protection from future tooth decay, the reversal of newly formed cavities, strengthened tooth enamel, and reduced dental treatment costs.[192] A 2018 study demonstrated the benefits of community water fluoridation showing that the incidence of dental caries was significantly lower in counties where over 75% of the population was served by community water fluoridation. Researchers concluded that fluoridation reduces tooth decay by around 30-39% in primary dentition (baby teeth) and 12-24% in permanent dentition.[193] Community water fluoridation is a highly cost-effective way to promote good oral health, reduce tooth decay and disease, and deliver fluoride to people of all ages, education levels, and income levels.[194,195]

Water fluoridation in California and the County of Santa Clara

California is ranked 34th in water fluoridation, with 64% of persons served by community water systems receiving fluoridated water in 2012.[196] While San Jose was previously the largest metropolitan area in the United States not providing fluoridated tap water to residents, the County of Santa Clara Public Health Department and several partners has made possible the onset of fluoridated water delivery by the Santa Clara Valley Water District (SCVWD) in 2016.[197] The SCVWD plans to fluoridate water at all three of its treatment facilities by late 2020, ensuring that a larger percentage of residents served by the San Jose Water Company (SJWC) receive fluoridated water.[197] Section 116409-116415 of the California Public Health and Safety Code[198] recently allowed $4 million in County of Santa Clara funds to be provided to SJWC for mandatory fluoridation projects, which will also increase delivery of fluoridated water in the area.[199]

The County of Santa Clara Public Health Department has chosen to prioritize water fluoridation efforts in lower-income areas, namely in East San Jose, due to their observably higher oral health disease burden. Currently, areas in San Jose which do not have full fluoridation status are also areas with higher concentrations of children living in or near poverty, and are the focus of water fluoridation efforts.

Water fluoridation and dental care

Along with consideration of access to care barriers, provider capacity, and higher risks for dental disease in different geographical areas based on socio-economic status, it's important to consider dental provider knowledge of their patients' fluoridation status. This information will provide a more complete picture of how to support additional public health programming to compensate for the lack of water fluoridation.

Of the five CHCs recently surveyed that serve children, one knows the fluoride levels for their child patients' residences only, two clinics know the fluoride levels for their child patients' residences and schools, and two are not sure of their child patients' fluoridation status.[39] Among private dental providers surveyed, 44% know the fluoride level of the water systems or wells for their patients' residences and schools, 31% know this information for their patients' residences only, and 24% do not know this information.[37]

CHCs and private dental providers receive water fluoridation information from multiple sources, though one CHC and 15% of private dental providers do not know where to receive this information, only 3% of private dental providers report not needing this information:[37,39]

- Local water treatment plant (1 CHC, 42% of private dental providers)
- State health department (1 CHC, 17% of private dental providers)
- Local health department (4 CHCs, 31% of private dental providers)
- Santa Clara Water District (1 CHC)
- Santa Clara Dental Society (1 CHC)
- Patients/parents (7% of private dental providers)
- Private lab (1% of private dental providers)

Dentists can prescribe fluoride supplements for children who live in sub-optimally fluoridated areas, which points to the value of knowing patients' water fluoridation status. Most private providers recently surveyed provide dietary fluoride supplements for children living in sub-optimally fluoridated areas, though rates of providing these services vary.[37] Three CHCs that serve children in the County of Santa Clara provide dietary fluoride supplements to children ages 0 to 17 who live in sub-optimally fluoridated communities.[39]

There have been and continue to be major successes in the County of Santa Clara regarding water fluoridation. The focus on fluoridating areas in San Jose where residents are of lower socioeconomic status and are therefore likely at higher risk of dental disease and tooth decay is an important step toward improving county-wide oral health. Providers at community health centers and private clinics can make improvements to ensure that they know the fluoridation status of all of their patients, especially child patients, and have the training and resources to provide supplemental fluoride to the appropriate patients.

CHAPTER 11 : PROGRAMS AND RESOURCES

Stemming from a long history of efforts to improve oral health in the County of Santa Clara, and expanded due to a recent Medi-Cal 2020 waiver (California's Medicaid 1115 waiver) application process, work in the County encompasses many stakeholders contributing to oral health in diverse ways. Organizations, programs, and other resources are working to improve oral health collaboratively through dental care provision, health promotion and education, provider training and development, care coordination, funding, and advocacy and policy.

While not necessarily encompassing all oral health activities in the county, this chapter provides an overview of programs, organizations, and resources related to oral health in the County of Santa Clara. An overall understanding of the work currently being done can help inform plans to improve oral health in the county through identifying the gaps as well as the strengths in the community and infrastructure.

In addition to the programs and organizations themselves (which are described in brief in Table 11-1 and in more detail in Appendix C), understanding major oral health funding streams is key to painting a picture of the oral health landscape in the county. Passed by California voters in November 2016, Proposition 56 increased the excise tax on tobacco products in 2017 from 87 cents to $2.87 per cigarette pack. Revenue from this tax was allocated for the Oral Health Program at the State Office of Oral Health and for supplemental payments for Medi-Cal dental care.[200] Guidelines for the use of Proposition 56 money also encourage coordination and reporting on AB 1433 (Kindergarten Oral Health Assessment).[100] Under Proposition 56, the County of Santa Clara received funding for the creation of a Local Oral Health Plan, which includes the present needs assessment and strategic plan, and will be allocated specific funding for water fluoridation efforts.

In addition to Proposition 56, statewide oral health funding can come from the Dental Transformation Initiative (DTI) and other domains of California's Medi-Cal 2020 waiver. While the County of Santa Clara received funding through this waiver process for the four domains (PRIME, Whole Person Care, the Global Payment Program, and the Drug Medi-Cal Organized Delivery System), the county did not receive funding for the DTI. However, the DTI proposal writing and planning process, led by the County of Santa Clara and Santa Clara Valley Health & Hospital System, brought together many partners and stakeholders, expanding the oral health system of care as a result. This application and planning process included input from not only a range of dental, medical, and other service providers, but also community members from underrepresented populations. Initiatives coming from this process have focused on improving care coordination, screening and education, bridging services to dental homes, inter-disciplinary

collaboration, school health clinics, virtual dental homes, integration of dental into pediatric medical clinics, creating the dental call center, and evaluation/surveillance/quality monitoring.[201]

Overall, as a result of the historical and newly invigorated oral health efforts in the county, there are strong collaborations between stakeholders and great efforts to improve oral health in the County of Santa Clara. Few, if any, organizations are working independently on oral health issues. Much of these joint efforts are being spearheaded by the Collaborative for Oral Health, an umbrella organization that brings together stakeholders from across the county to strategize around improving oral health for all residents. The work being done by organizations in the county spans multiple areas of oral health – e.g. providing screenings, educating youth and families, and funding other oral health programming. The majority of organizations are focused on providing care to and improving the oral health of low-income and underserved populations. In addition, there is a strong focus on the oral health of children and their families, especially regarding dental screenings and oral health education. Fewer organizations are focused on the oral health of other priority populations, including adults experiencing homelessness, older adults, youth in custody, and transitional age youth. Given the wide variety of work currently happening in the county and the strong relationships that exist, there may be great opportunity for this collaborative work to strengthen and grow.

Table 11-1. Programs and organizations working in the oral health field in the County of Santa Clara

Program/Organization Target population	Dental care: screening & prevention	Dental care: treatment	Health promotion & education	Provider training & development	Care coordination	Funding opportunities	Advocacy & policy
Child Health and Disability Prevention (CHDP) Children and youth age 0 to 21 on Medi-Cal or who are low-income[202]	✓		✓	✓	✓		
Collaborative for Oral Health County of Santa Clara residents[133]				✓	✓		✓
Community health centers (CHCs) Low-income and underserved individuals	✓	✓					
Chronic Disease and Injury Prevention (CDIP) Low income and vulnerable communities[133]			✓				✓
Dental provider schools Licensed dentists who choose to become member	✓	✓		✓			

	Dental care: screening & prevention	Dental care: treatment	Health promotion & education	Provider training & development	Care coordination	Funding opportunities	Advocacy & policy
FIRST 5 Families with a child, prenatal to age five[133]	✓		✓		✓	✓	✓
Head Start and Early Head Start Low-income families with infants, toddlers, and preschool age children (0 to 5) in the County of Santa Clara and parts of San Benito County[133,203]	✓		✓		✓		
The Health Trust Low income children, young adults, adults, seniors			✓			✓	✓
Healthier Kids Foundation (HKF) Low income children and youth up to age eighteen[133]	✓				✓		✓
Public Health Nursing (PHN) Pregnant women, new parents and babies, high-risk infants, children 0-5 in the child welfare system, adults and seniors with chronic disease or complex medical needs[133]			✓		✓		

	Dental care: screening & prevention	Dental care: treatment	Health promotion & education	Provider training & development	Care coordination	Funding opportunities	Advocacy & policy
San Andreas Regional Center People with developmental and intellectual disabilities, seizure disorders, autism, cerebral palsy, and brain injuries acquired before age eighteen[133]			✓	✓	✓		
Santa Clara County Dental Society Licensed dentists who choose to become member[133]	✓		✓	✓			✓
Santa Clara County Dental Foundation Low-income and underserved populations[133]	✓		✓				
County of Santa Clara Juvenile Probation Department Youth in custody 21 and under[133]	✓	✓	✓		✓		
Santa Clara Valley Medical Center (SCVMC) County of Santa Clara residents, especially low-income residents and underserved populations[133,201]	✓	✓	✓		✓		

Program/Organization Target population	Dental care: screening & prevention	Dental care: treatment	Health promotion & education	Provider training & development	Care coordination	Funding opportunities	Advocacy & policy
School based health centers (SBHCs) Students at public schools	✓	✓					
Virtual Dental Home (VDH) Low-income and underserved populations/patients at CHCs	✓	✓			✓		
Women, Infants, and Children (WIC) Low-income pregnant, postpartum, and breastfeeding women, infants, and children up to age 5 who are at nutritional risk[204]			✓				

CHAPTER 12 : SUMMARY

This needs assessment was comprised of both quantitative and qualitative data which provide an overview of the oral health and needs of residents in the County of Santa Clara. Chapters 2-7 utilized quantitative data from existing data sources and surveys to provide an overview of county demographics, oral health status, utilization, and dental insurance coverage of children and adults. Chapter 8 included qualitative data collected from focus groups and key informant interviews to dig deeper into the barriers and facilitators of oral health care and practices of children and adults, with special attention on priority populations. Chapters 9-11 utilized a combination of quantitative and qualitative data to describe the dental workforce capacity, oral health prevention strategies, programs and resources of the County of Santa Clara.

While there are many important findings from this needs assessment, key takeaways that can be used in oral health intervention planning include:

- As a whole, County of Santa Clara residents generally have better oral health outcomes compared to California and the United States, but disparities by race/ethnicity and socioeconomic status exist. Latinx residents consistently have worse outcomes than residents of other races/ethnicities. Residents with lower household incomes and educational attainment have worse outcomes compared to their counterparts.
- Priority populations experience lower rates of utilization due to unique barriers to accessing oral health care, including the cost of care, transportation, navigating systems of care, and dental providers lacking the capacity to treat patients with behavioral challenges or past trauma. Unique interventions are required in order to overcome these barriers.
- Increasing the capacity of community health centers and encouraging more private providers to accept Medi-Cal would improve access to care for those who need it most.
- Strong collaborations exist in the county, especially for addressing the oral health care needs of children, and there is room to build on these collaborative relationships to improve services for all county residents.
- There is momentum and interest in shifting oral health work upstream by focusing on prevention and early intervention, which would positively impact outcomes countywide, especially for underserved populations and those needing preventive care most.

The summary of findings from this needs assessment was presented at a community-wide strategic planning retreat on August 28, 2018. Based on the results of this retreat and subsequent work by the Strategic Planning Design Team and workgroups, a strategic plan was developed to address the gaps identified in this needs assessment. The full strategic plan can be found here: (put link to strategic plan here). The following are the key goals of the strategic plan:

1. **Increase Access to Dental Services**
   Goal: Dental services are more easily accessible when and where they are needed by priority populations.

2. **Promotion/Education**
   Goal: Priority populations' understanding of the importance of oral health, accessing oral health services, and maintaining good home oral health practices has increased.

3. **Integration of Medical and Dental**
   Goal: Medical providers are integrating oral health screening, education, preventive practices, and referrals in their regular patient visits.

4. **Oral Health Workforce**
   Goal: More dental providers are accepting patients on Medi-Cal and competently serving priority populations.

5. **Coordination and Policy:**
   Goal: Oral health efforts in the County are well-coordinated and institutionalized through infrastructure by local and state policies.

6. **Data and Evaluation**
   Goal: Data are regularly collected and evaluated using standardized measures, informing program and policy changes to achieve optimum oral health in the County.

APPENDIX A: METHODOLOGY

Data collection framework

In 2018, a data collection plan was designed for the County of Santa Clara Local Oral Health Needs Assessment by a consultant team in collaboration with staff from the County of Santa Clara Public Health Department. Following the data collection plan, findings presented in this needs assessment report draw from both quantitative and qualitative data sources. Quantitative sources included 1) an Adult Oral Health Intercept Survey, 2) a Dental Provider Survey, 3) a Dental Clinic Tool, and 4) existing data sources from county and state surveillance databases, public databases, and non-profit service organizations that provide or refer patients to oral health care services. Qualitative sources included 1) 10 focus groups with residents of the County of Santa Clara and 2) 15 key informant interviews with community leaders, experts, and service providers in the County of Santa Clara.

Oral health indicators were identified and divided into themes, and data sources were identified for each. Table A-1 aligns each oral health indicator theme with the method or data source used to assess its current status. Table A-2 shows which data sources designed for this needs assessment collected information on an identified priority population. Each data source is described in greater detail below.

Table A-1: Overview of needs assessment data collection plan

Oral health indicator theme	Method/data source
Demographic & socio-economic characteristics	• Existing secondary data sources
Oral health status	• Existing secondary data sources • Adult Oral Health Intercept Survey
Access to oral health care	• Existing secondary data sources • Adult Oral Health Intercept Survey • Dental Clinic Administrator Data Collection Tool • Dental Provider Survey
Oral health knowledge, perceptions, behaviors, and barriers	• Adult Oral Health Intercept Survey • Focus groups • Key informant interviews
Oral health outcomes	• Existing secondary data sources • Adult Oral Health Intercept Survey
Dental disease prevention	• Existing secondary data sources • Dental Clinic Data Collection Tool • Dental Provider Survey
Programs and resources	• Existing secondary data sources • Asset mapping (e.g. geographic distribution of dental providers and water fluoridation) • Key informant interviews • Dental Clinic Data Collection Tool • Dental Provider Survey

Table A-2: Overview of data sources by priority populations

Population	Focus Groups	Key Informant Interviews	Adult Oral Health Intercept Survey	Dental Clinic Tool	Dental Provider Survey	Existing secondary data sources
Infants, Toddlers, Preschoolers (ages 0-5)	✓	✓	✓	✓	✓	✓
School-Aged Children (ages 6-11)	✓	✓		✓	✓	✓
Adolescent/Teens (ages 12-17)	✓			✓	✓	✓
Young Adults (TAY) (ages 18-24)	✓		✓	✓	✓	✓
Foster Youth (Proxy: Social workers)	✓	✓				✓
Custodial/Justice-Involved Youth	✓	✓				✓
Adults			✓	✓	✓	✓
Older adults, 65 and older	✓	✓	✓	✓	✓	✓
Pregnant women	✓		✓	✓	✓	✓
Homeless individuals	✓	✓				✓
Language: Vietnamese	✓		✓			
Language: Spanish	✓		✓			
Language: Mandarin	✓		✓			
Geographic location	✓	✓	✓	✓	✓	✓

Adult Oral Health Intercept Survey

Between July 20th and August 20th, 2018, 953 complete Adult Oral Health Intercept Surveys were collected. Approximately three-fourths (n=730) of the surveys were collected in person via paper surveys distributed by the consultant team, county staff, and staff at community-based organizations (CBOs). Data collection took place at over 25 locations county-wide, including community events, highly-trafficked public areas, and CBO program sites. In addition, secure links to an online survey (hosted on SurveyMonkey) were shared with selected organizations for distribution to email lists and members, which yielded the remaining fourth (n=223) of the surveys.

The surveys were available in English and Spanish on paper and online, and Vietnamese and Mandarin Chinese on paper only. For each completed survey, the respondent received a $5 gift card. All survey participants were informed of the purpose, benefits, and risks before proceeding with the survey.

Survey respondents were selected using the following criteria:

- Sample universe: All adults (>18 years) residing in the county
- Sample size: 953 completed surveys (digital and paper combined)
- Sampling strategy: Convenience sampling, with particular attention to geographic and racial/ethnic representation, and membership in an identified priority population. Potential service locations or events were identified by the Design Team during a June 2018 meeting, and final events and host sites were determined by the consultant team based on feasibility and potential to achieve highest return.

Sampling sourcing: Representatives for the locations/events selected for sampling were contacted by email or phone and invited to participate in the survey administration. A letter or phone call from Design Team members or county representatives was sometimes requested to facilitate the process.

The survey addressed the following topics:

- Knowledge of best practices in oral health
- Current oral health behavior
- Current oral health status and outcomes
- Access to oral health care
- For parents of children 0-5: all of the above as they relate to the oral health of children

Respondent demographics: The average age of survey respondents is 39 years, which a range of ages 18-87 years. Other demographic characteristics are as follows:

Table A-3: Adult Oral Health Intercept Survey respondent demographic data

Demographic characteristic	Percent (%)
Race/ethnicity	
African American	4
Asian/Pacific Islander	22
Hispanic/Latinx	51
White	23
Gender	
Female	78
Male	22
Survey language	
English	67
Spanish	27
Vietnamese	5
Chinese	1
City of residence	
Campbell	3
Cupertino	2

Demographic characteristic	Percent (%)
Gilroy	7
Los Altos	0
Los Altos Hills	2
Los Gatos	2
Milpitas	9
Monte Sereno	1
Morgan Hill	1
Mountain View	5
Palo Alto	0
San Jose	53
Santa Clara	13
Saratoga	1
Sunnyvale	3
Unincorporated area of county	0
Education	
Less than high school	16
High school graduate	21
Some college	28
Bachelors degree or higher	35
Annual household income	
Less than $15k	18
$15k-$25k	10
$25k-$35k	9
$35k-$50k	12
$50k-$75k	16
$75k or more	36

Key informant interviews

Between July 17th and August 8th, 2018, fifteen semi-structured interviews with systems-level administrators and executives, program directors, and clinical staff were conducted by senior staff on the consultant team. Interviews were recorded for analysis purposes, with the consent of the interviewee.

Interviewees were selected using the following criteria:

- Sample universe: All stakeholders, service providers and organizational leaders in organizations, programs, or government departments with current or potential integration of oral health services, programming or policy
- Sample size: 15 completed interviews
- Sampling strategy: Sampling with particular attention to expertise on identified priority populations, and geographic and racial/ethnic representation (either the individuals themselves or the residents they or their organization serves). Potential stakeholders were identified by the Design Team, county staff, and the consultant team. Fifteen final stakeholders were selected by the consultant team based on feasibility and access, and in some cases referrals from originally identified stakeholders.

Sampling sourcing: Individuals selected for inclusion were contacted by email or phone, and invited to participate in the interview; in some cases a county representative facilitated an introduction. All interviewees were informed of the purpose, benefits, and risks before proceeding with the interview, and provided written consent to participate.

Main areas of inquiry during the interviews included:

- Knowledge of organizational infrastructure of oral health
- Perceptions of Strengths, Weaknesses, Opportunities and Threats as it relates to the oral health of the community and the local oral health plan (LOHP)
- Knowledge of oral health status/behavior of key priority populations
- Knowledge of gaps in service for constituents and customers, oral health disparities and access to care barriers
- Potential for oral health integration and program planning

Focus Groups

Starting in July 2018, the consultant team conducted ten focus groups with a total of 127 community members. Focus group discussions were recorded for analysis purposes, with the consent of the participants.

Focus groups were conducted in English, Spanish, and Vietnamese, and included the following priority populations:

- Transitional age youth (TAY) (English)
- Parents of children ages 0-5/Pregnant Women (One group in English, one in Spanish, and one in Vietnamese)
- Senior care-takers of children ages 0-5 (Spanish)
- Seniors (Bilingual English/Spanish group)
- Seniors (English)
- Homeless adults (English)
- Juvenile justice-involved youth (English)
- Foster youth (Social Workers and Independent Living Program staff participants served as proxy) (English)

Sampling included the following criteria:

- Sample universe: All members of identified priority populations in the county
- Sample size: 10 completed focus groups, with 127 total participants, with an average of 13 participants per group

- Sampling strategy: Sampling with particular attention to identified priority populations, and geographic and racial/ethnic representation. Potential focus groups sites were identified by the Design Team during a June 2018 meeting; final focus group compositions were determined by the consultant team based on input and collaboration with local organizations and programs, and the availability of participants.

Sampling sourcing: Organizations selected to host the focus groups were contacted by email or phone, and invited to participate in the needs assessment process; in some cases a county representative facilitated an introduction. All participants were informed of the purpose, benefits, and risks before proceeding with the focus group, and provided written consent to participate.

Main areas of inquiry during the focus groups included:

- Experiences with oral health care
- Barriers to access and treatment

Participants demographics: The average age of survey respondents is 48 years, which a range of ages 17-100 years. Other demographic characteristics are as follows:

Table A-4: Focus group participant demographic data

Demographic characteristic	Percent (%)
Race/ethnicity	
African American	4
Asian/Pacific Islander	31
Hispanic/Latinx	45
Native American/Alaska Native	4
White	16
Gender	
Female	72
Male	27
Non-binary	1
Language spoken at home	
English	50
Spanish	29
Vietnamese	15
Other	6
Country of birth	
U.S.	50
Mexico	19
Vietnam	13
India	8
Other	10
City of Residence	
Campbell	1
Gilroy	18

Demographic characteristic	Percent (%)
Milpitas	5
Morgan Hill	11
San Jose	65
Length of time in county	
Less than 1 year	9
1-3 years	12
4-6 years	6
7-9 years	10
10+ years	63

Note: Demographic data was excluded for Social Workers/Independent Living Program staff, since they served as proxy for their clients (foster youth).

Dental Provider Survey

Beginning in July 2018, the consultant team distributed the County of Santa Clara Dental Provider Survey (hosted on SurveyMonkey) to dental providers across the county. The Santa Clara County Dental Society and Mid-Peninsula Dental Society assisted with distribution to their members. The tool was sent to over 2000 dental providers, an approximate 13% response rate (N=266) was received by the closing date of August 1st, 2018. Not all respondents answered every question; 112 surveys were used in the final analysis.

The survey addressed the following topics:

- Characteristics and capacity/hours of facility/service location
- Services provided including fluoride therapy, treatments and specialty care, services to pregnant women and children 0-5, and tobacco cessation interventions
- Demographics and socio-economic background of patients served
- Insurance accepted, including Medi-Cal
- Linguistic/cultural capacity and needs
- Prevalence of dental caries experience by patients ages 0-5
- Perception of access to care barriers and potential solutions
- Water fluoridation and fluoride treatments

Dental Clinic Tool

Beginning in July 2018, the consultant team distributed the County of Santa Clara Dental Clinic Tool (hosted on SurveyMonkey) to County of Santa Clara community health center dental administrators. The tool was sent to six dental administrators, and we received a 100% response rate (N=6) by the closing date of August 13th, 2018. Although not all 6 respondents answered every question, all were included in the final analysis.

Data was provided by:

- Foothill Community Health Center

- North East Medical Services
- Gardner Family Health Network
- CityTeam Dental Clinic
- Indian Health Center
- Santa Clara Valley Medical Center

The tool addressed the following topics:

- Characteristics and capacity/hours of clinic/service location and wait time
- Dental workforce characteristics and distribution
- Services provided including fluoride therapy, treatments and specialty care, services to pregnant women and children 0-5, and tobacco cessation interventions
- Extent of services to pregnant women and children 0-5
- Demographics and socio-economic background of patients served
- Insurance accepted, including Medi-Cal
- Linguistic/cultural capacity and needs
- Perception of access to care barriers and potential solutions
- Water fluoridation and fluoride treatments

Secondary data sources

Where possible and appropriate, findings from existing secondary data sources were included in the needs assessment report. Secondary data sources are cited where appropriate in the text and figures. These sources include, but are not limited to:

- U.S. Census Bureau, American Community Survey
- County of Santa Clara Public Health Department
- Behavioral Risk Factor Survey
- California Healthy Kids Survey
- California Department of Health Care Services
- California Department of Public Health
- Maternal and Infant Health Assessment (MIHA) survey
- California Office of Statewide Health Planning and Development
- County of Santa Clara Homeless Census & Survey
- County of Santa Clara Probation Department
- Santa Clara County Dental Society Foundation
- Non-profit organizations providing oral health education and/or services

Data analysis

Quantitative data were coded and analyzed using SPSS software. The data was tabulated in order to be presented at the county-level and by demographic categories, including age, race/ethnicity, Asian subgroup, educational attainment, and annual household income. Survey results were not reported for indicators which had fewer than 50 responses.

Qualitative data were coded and analyzed using *dedoose*, a web-based platform. A codebook was developed in alignment with the needs assessment focus areas and with identified priority populations. Codes were applied to focus group and interview transcripts. Coded transcripts were analyzed to identify common themes, as well as specific themes that emerged for priority populations.

APPENDIX B: INSTRUMENTS AND PROTOCOLS

Below are the complete following complete instruments, used to gather primary data for the County of Santa Clara Oral Health Needs Assessment:

- Adult Oral Health Intercept Survey
- Key Informant Interview Protocol
- Focus Group Protocol
- Dental Provider Survey
- Dental Clinic Tool

Santa Clara County Adult Oral Health Survey

You are invited to participate in the Santa Clara County Adult Oral Health Survey!

The survey should take no more than 15 minutes to complete.

There is a movement to improve oral health across California, and we are conducting this survey as part of an effort to identify oral health needs and barriers to services in your community. We will use the information you provide today to help us create a plan to improve oral health in Santa Clara County.

We are very interested in your responses, but before you begin the survey it is important that you understand:

- Only residents of Santa Clara County are requested to complete this survey
- The first 1000 respondents will be eligible to receive a $5 gift card as compensation for their time. You will be given your gift card as soon as you complete the survey.
- We will not be asking for your name, and any information you provide will not be traced to you personally
- The information you provide will be shared with the Santa Clara County Public Health Department as part of the planning process
- Participating in this study is completely voluntary
- You can end the survey at any point, and skip any questions you do not wish to answer

If you have any questions about this survey you may direct them to Hatchuel Tabernik & Associates at 510-559-3193, extension 222, or by email at santaclara-lohp@htaconsulting.com.

By continuing, you are acknowledging your consent to participate in the survey.

Thank you in advance for your time!

1. Are you at least 18 years old?

- ◯ Yes
- ◯ No → ***STOP HERE – Thank you for your time!***

2. What is your age: _____

3. What city do you live in (primary residence)?

- ◉ Campbell
- ◯ Cupertino
- ◯ Gilroy
- ◯ Los Altos
- ◯ Los Altos Hills
- ◯ Los Gatos
- ◯ Milpitas
- ◯ Monte Sereno
- ◯ Morgan Hill
- ◯ Mountain View
- ◯ Palo Alto
- ◯ San Jose
- ◯ Santa Clara
- ◯ Saratoga
- ◯ Sunnyvale
- ◯ Unincorporated area of Santa Clara County (Alum Rock, Burbank, Cambrian Park, East Foothills, Fruitdale, Lexington Hills, Loyola, San Martin, Stanford)
- ◯ I do not live in Santa Clara County → ***STOP HERE – Thank you for your time!***

4. Are you of Hispanic, Latino or Spanish origin?

- ◯ Yes
- ◯ No
- ◯ Don't know / not sure
- ◯ Prefer not to answer

5. Which one or more of the following would you say is your race? *(Check all that apply)*

- ☐ White / Caucasian
- ☐ Black / African American
- ☐ American Indian / Native American
- ☐ Other (please specify): _____
- ☐ Alaska Native
- ☐ Asian ***Please complete Question 6***
- ☐ Native Hawaiian
- ☐ Pacific Islander
- ☐ Don't know / not sure
- ☐ Prefer not to answer

6. ***Skip this question if you did not select "Asian" above***

If you marked that you are Asian, please specify how you identify *(Check all that apply)*

- ☐ Asian Indian
- ☐ Chinese
- ☐ Filipino
- ☐ Japanese
- ☐ Korean
- ☐ Pakistani
- ☐ Taiwanese
- ☐ Other (please specify): _____
- ☐ Vietnamese
- ☐ Don't know / not sure
- ☐ Prefer not to answer

7. What is the highest grade or year of school you completed?

- ◯ Never attended school or only attended kindergarten
- ◯ Grades 1 through 8 (Elementary)
- ◯ Grades 9 through 11 (Some high school)
- ◯ Grade 12 or GED (High school graduate)
- ◯ College 1 year to 3 years (Some college or technical school)
- ◯ College 4 years or more (College graduate)
- ◯ Don't know / not sure
- ◯ Prefer not to answer

8. Are you...

- ◯ Male → ***Skip to Question 12***
- ◯ Female → ***Continue to Question 9***
- ◯ Don't know / not sure → ***Skip to Question 12***
- ◯ Prefer not to answer → ***Skip to Question 12***

9. Are you currently pregnant, or have you been pregnant in the last year?

- ◯ Yes → ***Continue to Question 10***
- ◯ No → ***Skip to Question 12***
- ◯ Don't know / not sure → ***Skip to Question 12***
- ◯ Prefer not to answer → ***Skip to Question 12***

10. During any of your prenatal visits, did a doctor, nurse, or other health care worker talk with you about either of the following - please include only discussions, not literature or videos *(Check all that apply):*

- ☐ The importance of seeing a dentist during your pregnancy
- ☐ How to care for your teeth and gums during pregnancy
- ☐ Don't know / not sure
- ☐ Prefer not to answer

11. During your most recent pregnancy, did you *(Check all that apply):*

- ☐ See a dentist/ go to a dental clinic for a routine visit
- ☐ See a dentist/ go to a dental clinic because of a problem
- ☐ Don't know / not sure
- ☐ Prefer not to answer

12. When was the last time you visited the dentist or a dental clinic? *(Select only one)*

- ◯ Within the past year (0 to 12 months ago)
- ◯ Within the past 2 years (1 to 2 years ago)
- ◯ Within the past 5 years (2 to 5 years ago)
- ◯ 5 or more years ago
- ◯ Never
- ◯ Don't know / not sure
- ◯ Prefer not to answer

13. What was the main reason you last visited the dentist? *(Select only one)*

- ◯ Went in on own for check-up, examination, or cleaning
- ◯ Was called in by the dentist for check-up, examination, or cleaning
- ◯ Something was wrong, bothering or hurting me
- ◯ Went in for treatment of a condition that dentist discovered at earlier check-up or examination
- ◯ Don't know / not sure
- ◯ Prefer not to answer
- ◯ Not applicable - have never been to the dentist
- ◯ Other (please specify) _____

14. In the past 12 months, did a dentist, hygienist, or other dental professional have a direct conversation with you about the benefits of giving up cigarettes or other types of tobacco to improve your dental health?

- ◯ Yes
- ◯ No
- ◯ Don't know / not sure
- ◯ Prefer not to answer

15. In the past 12 months, did a dentist, hygienist, or other dental professional have a direct conversation with you about the dental health benefits of checking your blood sugar?

- ◯ Yes
- ◯ No
- ◯ Don't know / not sure
- ◯ Prefer not to answer

16. In the past 12 months, did a dentist, hygienist, or other dental professional have a direct conversation with you about the importance of examining your mouth for oral cancer?

- ◯ Yes
- ◯ No
- ◯ Don't know / not sure
- ◯ Prefer not to answer

17. During the past 12 months, was there a time when you needed dental care but could not get it at that time?

- ◯ Yes → ***Continue to Question 18***
- ◯ No → ***Skip to Question 19***
- ◯ Don't know / not sure → ***Skip to Question 19***
- ◯ Prefer not to answer → ***Skip to Question 19***

18. What were the reasons that you could not get the dental care you needed? *(Check all that apply)*

- ☐ Could not afford the cost
- ☐ Did not want to spend the money
- ☐ Insurance did not cover recommended procedures
- ☐ Dental office is too far away
- ☐ Dental office is not open at convenient times
- ☐ Another dentist recommended not doing it
- ☐ Afraid or do not like dentists
- ☐ Unable to take time off work
- ☐ Too busy
- ☐ I did not think anything serious was wrong / expected dental problems to go away
- ☐ Don't know / not sure
- ☐ Prefer not to answer
- ☐ Other (please specify): _____

19. In general, would you say that your oral health is:

- ◯ Excellent
- ◯ Very good
- ◯ Good
- ◯ Fair
- ◯ Poor
- ◯ Don't know / not sure
- ◯ Prefer not to answer

20. Not including teeth lost for injury or orthodontics, how many of your permanent teeth have been removed because of tooth decay or gum disease? *(Select only one)*

- ◯ 1 to 5
- ◯ 6 or more but not all
- ◯ All
- ◯ None
- ◯ Don't know / Not sure
- ◯ Prefer not to answer

21. How often during the last year have you had painful aching anywhere in your mouth?

- ◯ Very often
- ◯ Fairly often
- ◯ Occasionally
- ◯ Hardly ever
- ◯ Never
- ◯ Don't know / not sure
- ◯ Prefer not to answer

22. How often during the last year have you been self-conscious or embarrassed because of your teeth, mouth, or dentures?

- ◯ Very often
- ◯ Fairly often
- ◯ Occasionally
- ◯ Hardly ever
- ◯ Never
- ◯ Don't know / not sure
- ◯ Prefer not to answer

23. How often during the last year have you had difficulty doing your usual job(s) or attending school because of problems with your teeth, mouth, or dentures?

- ◯ Very often
- ◯ Fairly often
- ◯ Occasionally
- ◯ Hardly ever
- ◯ Never
- ◯ Don't know / not sure
- ◯ Prefer not to answer

24. Do you have any kind of insurance coverage that pays for some or all of your routine dental care, including dental insurance, prepaid plans such as HMOs, or government plans such as Medicaid (called Medi-cal or Denti-Cal in California)?

- ◯ Yes
- ◯ No
- ◯ Don't know / not sure
- ◯ Prefer not to answer

25. Is your annual household income from all sources...

- ◯ less than $10,000
- ◯ $10,000 to less than $15,000
- ◯ $15,000 to less than $20,000
- ◯ $20,000 to less than $25,000
- ◯ $25,000 to less than $35,000
- ◯ $35,000 to less than $50,000
- ◯ $50,000 to less than $75,000
- ◯ $75,000 to less than $100,000
- ◯ $100,000 to less than $125,000
- ◯ $125,000 or more
- ◯ Don't know / not sure
- ◯ Prefer not to answer

26. Do you have any children between the ages of 0 and 5 years?

- ◯ Yes → ***Continue to Question 27***
- ◯ No → ***STOP HERE – Thank you for your time!***
- ◯ Don't know / not sure → ***STOP HERE – Thank you for your time!***
- ◯ Prefer not to answer → ***STOP HERE – Thank you for your time!***

27. Are you the primary caregiver for the child / children?

- ◯ Yes → ***Continue to Question 28, on the next page***
- ◯ No → ***STOP HERE – Thank you for your time!***
- ◯ Don't know / not sure → ***STOP HERE – Thank you for your time!***
- ◯ Prefer not to answer → ***STOP HERE – Thank you for your time!***

If you are the primary caregiver for more than one child between the ages of 0-5 years, please choose the child who has the birthday that is closest to today and complete the following questions in regards to that child only.

28. How old is the child you will be answering these questions for?
(Fill in the bubbles that correspond to your child's age in years and months.)

Years:

0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○

Months:

0 ○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10 ○ 11 ○ 12 ○

29. During the past six months, did your child have a toothache when biting or chewing on more than one occasion?

○ Yes
○ No
○ Don't know / not sure
○ Prefer not to answer

30. During any well-child visits at your child's doctor's office, did a doctor, nurse, or other healthcare worker talk to you about any of the following *(Check all that apply):*

☐ The importance of taking your child to the dentist early during their first five years
☐ How to care for your child's teeth and gums during infancy and early childhood
☐ The importance of diet for your child's oral health (such as limiting sugary beverages and snacks)
☐ Did not attend any well-child visits
☐ Don't know / not sure
☐ Prefer not to answer

31. During any visits to programs which offer health education (such as First5 or WIC), did a healthcare worker or health educator talk to you about any of the following *(Check all that apply):*

☐ The importance of taking your child to the dentist early during their first five years
☐ How to care for your child's teeth and gums during infancy and early childhood
☐ The importance of diet for your child's oral health (such as limiting sugary beverages and snacks)
☐ Did not attend any programs that offer health education
☐ Don't know / not sure
☐ Prefer not to answer

32. How long has it been since your child last visited a dentist or dental clinic for any reason? Include dental hygienists and all types of oral health care specialists, such as orthodontists or oral surgeons.

○ Less than 6 months
○ 6 months to 1 year
○ 1 year to 3 years
○ More than 3 years
○ Have never been
○ Don't know / not sure
○ Prefer not to answer

33. Is there a specific dentist or dental clinic that you feel comfortable taking your child to for prevention and treatment?

○ Yes
○ No
○ Don't know / not sure
○ Prefer not to answer

34. If you answered "Yes" above, has your child visited that specific dentist or dental clinic at least two years in a row (at least once each year)?

○ Yes
○ No
○ Don't know / not sure
○ Prefer not to answer
○ Not applicable

Thank you for your time!

Key Informant Interview Protocol

Name:
Organization:
Date of Interview:

You are invited to participate in an interview on oral health in Santa Clara County. We are conducting interviews as part of an effort to identify oral health needs and barriers to services across the county, and your experience and expertise will be an invaluable contribution to this process. We will use the information you provide to help us create a plan to improve oral health in Santa Clara County.

1. Can you give me a little bit of background on your agency and your role?

2. Within Santa Clara County, are there any specific geographic areas that you primarily serve?

3. What population do you work with? Who are your clients?

4. Can you tell describe how your agency is involved in Oral Health?
    a. Is it treatment, prevention, education, and/or policy?

5. Can you say a little bit about the strengths of the work your agency is doing related to Oral Health? Any key accomplishments/successes to note?

6. Can you say a little bit about weaknesses/challenges in the work your organization is doing related to Oral Health? How would you like to improve the work you do around oral health?

7. Are there barriers to integrating oral health in your agency/programmatic work? Do you have suggestions as to how these barriers could be addressed?

8. [*Optional question, when appropriate*] What are some barriers to accessing oral health care that are specific to the population(s) you work with? [*Probe for particular populations*] Are there barriers to daily good oral health practices for the population you work with? What are some strategies that might address these barriers?

9. When you think of the oral health resources in Santa Clara County (of the "oral health system" in the county)?
    a. What are the strengths of the system?
    b. What do you see as the gaps in the system?
    c. What are the opportunities to improve the system?
    d. What are the barriers to improving the system?

10. Are there specific programs or services that are needed in Santa Clara County?

11. Can you identify any ways to integrate oral health into existing programs and services? Or into existing systems of care?

12. Are there specific populations that face more significant barriers/challenges to accessing oral health services in Santa Clara County? What are those populations? (*Probe: Is there a particular population related to geography, age, ethnicity, income or something else that has the most challenges?*) Can you think of any strategies to address the barriers faced by the populations you've listed?

13. Is there anything else that we haven't discussed that you think it is important to consider as we plan to improve oral health in Santa Clara County?

Focus Group Master Protocol

1. **Before we begin the discussion, let's take just a minute to help me get to know who is in the room. Going around the circle, please tell us:** If you have ever been to a dentist and, if you have, when was the first time you visited a dentist.
    a. Raise hand if you had a good experience? Not such a good experience? *(Facilitator should say the count out-loud for the sake of the recording)*

2. **Improving experience with dentist**: If you have had a good experience going to the dentist, what made it a good experience? If you have had a bad experience, what made it a bad experience? For both: what would make your experience better? *For each demographic, probe things particular to them, e.g. translation; mobility/transportation for seniors, etc.)*

3. **How often do you think you need to go to the dentist?**

4. **Accessing the dentist/identifying barriers** (if not covered previously): For those of you who go to the dentist, where is your dentist (determine if it is a FQHC)? How often do you actually go to the dentist? If not 2x/year: why not? (Probe: location, accessibility, transportation, language, fear, treatment, cost…) Tell us about the cost: do you have Medi-Cal (Denti-Cal) or any other kind of insurance? Is paying for dentist an issue for you?

5. **Improving access/going to the dentist:** What would make it easier for you to go to the dentist? *Explore where the dentist is, issues re: payment, knowledge that Medi-Cal covers dentist visits, etc.*

6. **Assess knowledge of good oral health practices.** What do you think is important to do to have good oral health? (*Brushing 2x/day, flossing, avoiding sugary food and beverages, seeing a dentist by age 1, seeing a dentist while pregnant).*
    a. Which ones of these do you do fairly consistently? Which ones not so much?
    b. Why/why not? ***This question can be difficult – most people will say that they are doing good OH practices.***

7. **Motivation/information.** Have you received information about good oral health practices from your dentist/ oral health provider/other sources? What's the best way for you to receive information? What would motivate you to practice some of the things you've been told about good oral health?

(Explore different ways of getting information and what would motivate them, e.g. if their primary care provider told them, social media, schools if they have children, billboards, etc.) ***Need to mention different things and see how they respond, e.g. your doctor talking to you, a billboard, texting, etc.***

8. **Tobacco Consumption.** What do you know about the effects of smoking on your teeth and gums? (if appropriate, ask about their tobacco consumption)

9. **Ask about some specific interventions and programs** (e.g. FV/dental sealants at school; primary care providers sharing information, etc.) what would help you to receive better and easier care? Have you ever been to a health fair that they offered education about teeth and screening? How

Focus Group Master Protocol

did it work? What would make it work better? Do you think a mobile dental clinic would help? If so, what are the things that you need? Education, exams at the site….

10. **Final question:** If you had a magic wand and you could change one thing that would help you better access good OH either at the dentist or at home, what would it be?

11. **Is there anything you would like to share that hasn't already been addressed?**

Santa Clara County
PUBLIC HEALTH

Santa Clara County Dental Provider Data Tool

As part of an Oral Health Needs Assessment in Santa Clara County, we are requesting administrative data about your practice. Dental care providers play a crucial role in oral health care, and your experience and expertise will be an invaluable contribution to this assessment, to developing a Local Oral Health Plan, and ultimately to improving oral health in Santa Clara County.

Before you begin completing this data request, please read the following:

- **While thorough and accurate data about your practice is important to this process, your participation is completely voluntary.**
- **Whether or not you choose to participate, neither your funding nor your relationship with any partner organization or county department will be impacted.**
- **The information you provide will be shared with the Santa Clara Department of Public Health as part of the planning process.**
- **Although the responses you provide will be identifiable, all data will be presented in aggregate.**

By continuing, you are indicating that you have read and understood the above information and consent to participate.

We ask that you please enter your data by 7/31/2018.

If you have any questions about this data request you may direct them to Hatchuel Tabernik & Associates at 510-559-3193, extension 222, or by email at santaclara-lohp@htaconsulting.com.

Thank you in advance for your assistance!

Santa Clara County
PUBLIC HEALTH

Santa Clara County Dental Provider Data Tool

Location of Practice

* 1. Is your practice located in Santa Clara County?

- ◯ Yes
- ◯ No

Santa Clara County
PUBLIC HEALTH

Santa Clara County Dental Provider Data Tool

Practice Information

Please answer all questions to the best of your ability. If you do not know the answer to a question, you may leave it blank and write in an explanation, where possible.

2. Practice Information

Name of Practice	
Address	
City/Town	
Zip	
Phone	
Fax	

3. Do you work for a Community Dental Clinic (e.g., Federally Qualified Health Center, Indian Health Center, etc)?

- ◯ Yes
- ◯ No

4. Which of the following is the primary setting for your current practice?

- ◯ Private general practice
- ◯ Private pediatric practice
- ◯ Public health clinic
- ◯ Other, including other specialty practice (please specify)

5. Please provide the total number of FTE (full-time equivalent) in each category at your clinic (including yourself). **Note: A secretary or receptionist who provides chair side assistance at least 50% of the time should be counted as a dental assistant for .5 FTE and a secretary or receptionist for .5 FTE.*

General dentists	
Pediatric dentists	
Orthodontists	
Other specialists	
Dental hygienists	
Dental assistants	
Secretary/Receptionists	
Dental lab technicians	
Other	

6. What specialty services are provided by any staff in your practice?*(Check all that apply)*

- [ ] Surgery
- [ ] Pediatric
- [ ] Orthodonticts
- [ ] Endodontics
- [ ] Periodontics
- [ ] Other (please specify)

7. In your practice, what languages are offered for patients through staff or translation services?*(Check all that apply)*

- [ ] Spanish
- [ ] Mandarin
- [ ] Vietnamese
- [ ] Tagalog
- [ ] Other (please specify)

Santa Clara County
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Santa Clara County Dental Provider Data Tool

Patient Demographics

Please answer all questions to the best of your ability. If you do not know the answer to a question, you may leave it blank and write in an explanation, where possible.

8. Approximately what percentage of your active patients are in the following age groups? (*Total should add up to 100%*)

% Under 3 years

% 3-5 years

% 6-11 years

% 12-17 years

% 18-25 years

% 26-64 years

% 65 years and older

% Don't know/Not sure

9. What is the approximate racial/ethnic breakdown of your active patients, by percentage?*(Total should add up to 100%)*

% Hispanic/Latino	
% Black/African American	
% Asian/Pacific Islander	
% White/Caucasian	
% American Indian/Alaskan Native	
% Other	
% Don't know/Not sure	

10. What is the approximate annual household income breakdown of the active patients seen at your practice, by percentage? *(Total should add up to 100%)*

% Less than $10,000	
% $10,000 to less than $25,000	
% $25,000 to less than $50,000	
% $50,000 to less than $75,000	
% $75,000 to less than $100,000	
% $100,000 or more	
% Don't know/Not sure	

11. Do you treat pregnant women?

- ◯ Yes
- ◯ No

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12. What are your reasons for not treating pregnant women?

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13. Approximately what percentage of your patients are pregnant women?

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Santa Clara County Dental Provider Data Tool

Access to Dental Care

Please answer all questions to the best of your ability. If you do not know the answer to a question, you may leave it blank and write in an explanation, where possible.

14. Approximately what percentage of people in the area your practice serves would you estimate have difficulty obtaining the dental care they need?

15. For those who have difficulty obtaining the dental care they need, please rank what you think are the THREE MOST IMPORTANT barriers.

	MOST important	2nd most important	3rd most important
Lack of transportation	○	○	○
Lack/shortage of dentists in the community	○	○	○
Few dentists in the area accepting Medi-Cal/Denti-Cal patients	○	○	○
Lack of public dental clinics	○	○	○
Lack of money/inadequate insurance benefits to pay for dental care	○	○	○
Fear of dentist	○	○	○
Cannot take time off work to visit the dentist	○	○	○
No child care available	○	○	○
Dental care is low priority for population/low dental IQ	○	○	○
Too long of a wait to see the dentist	○	○	○
People don't know how or where to obtain dental care	○	○	○
Cultural or language barrier	○	○	○
Parents unable to take time off work to take child to the dentist (for child patients)	○	○	○
Parents don't think children have a dental problem (for child patients)	○	○	○
Parents don't want children to miss school (for child patients)	○	○	○
Don't know	○	○	○
Other (specify)	○	○	○

If other, please specify

16. What resources are available in your area for those who have difficulty obtaining the dental care they need? (*Check all that apply*)

- [ ] Local dentists see selected number of patients free of charge
- [ ] Public dental clinic, e.g., community health center, local health department
- [ ] Denti-Cal
- [ ] Local dental society program
- [ ] No provisions that I know of
- [ ] Other (please specify)

17. Approximately what percentage of your patients were seen for a preventative visit in 2017?

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Denti-Cal Insurance

Please answer all questions to the best of your ability. If you do not know the answer to a question, you may leave it blank and write in an explanation, where possible.

18. Did you bill Denti-Cal for at least one patient in the last 12 months?

- ◯ Yes
- ◯ No

Santa Clara County
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Santa Clara County Dental Provider Data Tool

19. If you are not accepting Denti-Cal patients, please rank your THREE MOST IMPORTANT reasons for this:

	MOST important	2nd most important	3rd most important
Too many missed / no show appointments	○	○	○
Reimbursement rates too low	○	○	○
Cumbersome paperwork	○	○	○
Poor payment response	○	○	○
Patients don't appreciate the dental treatment I provide	○	○	○
Other (specify)	○	○	○

If other, please specify

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Santa Clara County Dental Provider Data Tool

Please answer all questions to the best of your ability. If you do not know the answer to a question, you may leave it blank and write in an explanation, where possible.

20. What percentage of your patients is currently on Denti-Cal?

21. Please provide the total # of patients billed to Denti-Cal in 2017.

22. Do you try to limit the number of Denti-Cal patients you see?

- ◯ Yes
- ◯ No

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Santa Clara County Dental Provider Data Tool

23. How do you limit the number of Denti-Cal patients seen?*(Check all that apply)*

- [ ] Only treat patients of record or their family members
- [ ] Treat referrals only
- [ ] Treat emergencies only
- [ ] Limited days or hours
- [ ] Treat only certain ages
- [ ] Other (please specify)

Santa Clara County
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Santa Clara County Dental Provider Data Tool

Prevention & Education

Please answer all questions to the best of your ability. If you do not know the answer to a question, you may leave it blank and write in an explanation, where possible.

24. Which of the following educational / prevention-based guidelines or activities is your practice performing on a regular basis? *(Check all that apply)*

- [ ] Caries risk assessment on children 0-5
- [ ] Caries risk assessment on children 6-18
- [ ] Caries risk assessment on adults
- [ ] Oral health education
- [ ] Motivational interviewing approach
- [ ] Care coordination
- [ ] School-based oral health education, screenings and services
- [ ] Community-based oral health education such as health fairs
- [ ] Virtual dental home
- [ ] None of the above
- [ ] Other (please specify)

25. In which of the following ways has the clinic supported tobacco use prevention or addressed tobacco use for patients of all ages? *(Check all that apply)*

- [ ] Offered counseling on smoking cessation
- [ ] Referred patients to tobacco use cessation programs in the community
- [ ] Offered counseling patients not to start using tobacco products, including vaping products
- [ ] Prescribed nicotine gum or patch
- [ ] Performed thorough intraoral exams
- [ ] Instructed patients on self-examination of their mouth
- [ ] Partnered with local organizations
- [ ] Developed a health education campaign
- [ ] Collaborated with local school districts
- [ ] Asked patients about tobacco use, including vaping products
- [ ] Not actively engaged in tobacco education
- [ ] None of the above
- [ ] Other (please specify)

26. Which of the following would help you to conduct an active tobacco prevention program? (*Check all that apply*)

- [ ] Continuing education for you/your staff on tobacco cessation strategies
- [ ] Continuing education for you/your staff on oral effects of tobacco use
- [ ] Patient education materials on oral cancer self-exam
- [ ] Educational materials for use in school/community
- [ ] Legislative updates on tobacco iniatives
- [ ] Not interested in tobacco prevention
- [ ] Other (please specify)

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Santa Clara County Dental Provider Data Tool

Fluoridation

Please answer all questions to the best of your ability. If you do not know the answer to a question, you may leave it blank and write in an explanation, where possible.

27. Do you know the fluoride levels of the water systems or wells supplying the residences and schools in which most of your patients live?

- ◯ Yes, for both residence and school
- ◯ Yes, but for residence only
- ◯ Yes, but for school only
- ◯ No
- ◯ Not sure

28. Where do you receive information on the fluoride levels of your patients' water supplies? (*Check all that apply*)

- ☐ Local water treatment plant
- ☐ State health department
- ☐ Local health department
- ☐ Private lab
- ☐ Patients/parents
- ☐ Don't know where to get information
- ☐ Don't need information
- ☐ Other (please specify)

29. For approximately what percentage of your child patients (ages 0-17 years) who live in suboptimally fluoridated communities are dietary fluoride supplements prescribed?

- None
- 1%-10%
- 11%-30%
- 31%-50%
- 51%-70%
- More than 70%
- Don't know
- Not applicable - I do not treat child patients

30. Approximately what percentage of your child patients (ages 0-5 years) receive a Caries Risk Assessment?

- None
- 1%-10%
- 11%-30%
- 31%-50%
- 51%-70%
- More than 70%

31. Approximately what percentage of all your child patients (ages 0-5 years) receive topical fluoride treatments at six month intervals?

- None
- 1%-10%
- 11%-30%
- 31%-50%
- 51%-70%
- More than 70%

32. Approximately what percentage of your child patients (ages 0-5 years) that have been deemed high-risk receive topical fluoride treatments at three month intervals?

- None
- 1%-10%
- 11%-30%
- 31%-50%
- 51%-70%
- More than 70%

33. Approximately what percentage of your child patients 0-5 years old have had the experience of tooth decay in the last year?

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Santa Clara County Dental Provider Data Tool

About You

34. In what year did you receive your DDS or DMD degree?

35. Are you...?

- Male
- Female
- Don't know / not sure
- Prefer not to answer

36. Are you of Hispanic, Latino or Spanish origin?

- Yes
- No
- Don't know / not sure
- Prefer not to answer

37. Which one or more of the following would you say is your race?*(Check all that apply)*

- [ ] White / Caucasian
- [ ] Black / African American
- [ ] American Indian / Native American
- [ ] Alaska Native
- [ ] Asian
- [ ] Native Hawaiian
- [ ] Pacific Islander
- [ ] Don't know / not sure
- [ ] Prefer not to answer
- [ ] Other (please specify)

38. You marked that you are Asian, are you... ? (Check all that apply)

- [ ] Asian Indian
- [ ] Chinese
- [ ] Filipino
- [ ] Japanese
- [ ] Korean
- [ ] Pakistani
- [ ] Taiwanese
- [ ] Vietnamese
- [ ] Don't know / not sure
- [ ] Prefer not to answer
- [ ] Other (please specify)

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Santa Clara County Dental Provider Data Tool

39. Lastly, please share any suggestions that you may have for improving access to preventative dental services and/or dental care in Santa Clara County.

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Santa Clara County Dental Clinic Data Tool

As part of an Oral Health Needs Assessment in Santa Clara County, we are requesting administrative data from your clinic. Dental clinics play a crucial role in oral health care, and your experience and expertise will be an invaluable contribution to this assessment, to developing a Local Oral Health Plan, and ultimately to improving oral health in Santa Clara County.

Before you begin completing this data request, please read the following:

- **While thorough and accurate data about your clinic is important to this process, your participation is completely voluntary.**
- **Whether or not you choose to participate, neither your funding nor your relationship with any partner organization or county department will be impacted.**
- **The information you provide will be shared with the Santa Clara Department of Public Health as part of the planning process.**
- **Although the responses you provide will be identifiable, all data will be presented in aggregate.**

By continuing, you are indicating that you have read and understood the above information and consent to participate.

We ask that you please enter your data by Tuesday, 7/31/2018.

If you have any questions about this data request you may direct them to Hatchuel Tabernik & Associates at 510-559-3193, extension 222, or by email at santaclara-lohp@htaconsulting.com.

Thank you in advance for your assistance!

Santa Clara County
PUBLIC HEALTH

Santa Clara County Dental Clinic Data Tool

* 1. Is your clinic located in Santa Clara County?

- ◯ Yes
- ◯ No

* 2. Does your clinic provide dental services?

- ◯ Yes
- ◯ No

Santa Clara County
PUBLIC HEALTH

Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

3. Clinic Information

Name of Clinic	
Address	
City/Town	
Zip	
Phone	
Fax	

4. Name of Dental Director

5. Name of person completing survey (if other than Dental Director)

6. Title of person completing survey (if other than Dental Director)

7. Does your clinic have satellite facilities?

- ◯ Yes
- ◯ No

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Santa Clara County Dental Clinic Data Tool

8. Please complete the following information about your first satellite facility where dental services are provided:

Name of Satellite #1	
Address	
City	
Zip	
Phone	
Fax	
Name of Dental Director	

9. Do you have another satellite facility where dental services are provided to enter?

- ◯ Yes
- ◯ No

Santa Clara County
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Santa Clara County Dental Clinic Data Tool

10. Please complete the following information about your second satellite facility where dental services are provided:

Name of Satellite #2	
Address	
City	
Zip	
Phone	
Fax	
Name of Dental Director	

11. Do you have another satellite facility where dental services are provided to enter?

- ◯ Yes
- ◯ No

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Santa Clara County Dental Clinic Data Tool

12. Please complete the following information about your third satellite facility where dental services are provided:

Name of Satellite #3	
Address	
City	
Zip	
Phone	
Fax	
Name of Dental Director	

13. Do you have more than three satellite facilities where dental services are provided?

- ◯ Yes
- ◯ No

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14. How many satellite facilities do you have in total, including any named above, where dental services are provided?

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Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

15. Does your clinic provide both medical and dental services?

- ◯ Yes
- ◯ No

Santa Clara County
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Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

16. What percentage of active patients that are seen in the medical side of your clinic, are seen at the dental clinic as well?

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Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

17. Please answer the following about your dental clinic during 2017. Select a typical week. (Use your appointment book if available)

Total number of hours per week spent treating patients in the clinic:

Percentage of hours per week treating patients (above) devoted to treating children:

Number of new child patients per week treated in this clinic:

Number of individual patients (of all ages) seen per week:

Number of patient visits per week (all ages):

Number of individual children seen per week:

Number of child visits per week:

18. How many operatories does this clinic use?

Santa Clara County
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Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

19. On average, how long do children have to wait before they are seen for a dental exam?

- ◯ 0-14 days
- ◯ 15 - 30 days
- ◯ 31 - 60 days
- ◯ 61 - 90 days
- ◯ 91 - 120 days
- ◯ 121 days or more

20. On average how long do adults have to wait before they are seen for dental services?

- ◯ 0 - 14 days
- ◯ 15 - 30 days
- ◯ 31 - 60 days
- ◯ 61- 90 days
- ◯ 91 - 120 days
- ◯ 121 days or more

Santa Clara County
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Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

21. Please estimate how many unduplicated dental patients your clinic served in each of the years below.

2014:

2015:

2016:

2017:

22. Assuming **no** additional paid staff were added, could this clinic see more patients if (*Check all that apply*):

- [ ] Volunteer dentists and dental hygienists staffed the clinic part of the time?
- [ ] Independent contractors who generated their own salary staffed the clinic part of the time?
- [ ] Days or hours of operation were extended?
- [ ] Additional operatories were added (i.e. there is a space to accommodate them)?
- [ ] Other (please specify)

23. Could more patients be seen or more treatment provided if more of the following **paid** staff or independent contractors were working at your clinic? (C*heck all that apply*):

- [ ] Dentists
- [ ] Dental hygienists
- [ ] Dental assistants
- [ ] Dental lab technicians
- [ ] Receptionists
- [ ] Other (please specify)

24. Please provide the total number of FTE (full-time equivalent) individuals in each category at your clinic (including yourself).
**Note: A secretary or receptionist who provides chairside assistance at least 50% of the time should be counted as a dental assistant for .5 FTE and a secretary or receptionist for .5 FTE.*

General dentists

Pediatric dentists

Orthodontists

Other specialists

Dental hygienists

Dental assistants

Secretary/Receptionists

Dental lab technicians

Other

25. Do(es) your hygienist(s) place sealants in children?

- ◯ Yes
- ◯ No
- ◯ N/A

26. What days and hours is this clinic typically open and providing dental care each week? Please exclude lunch breaks or other times care is not being offered. For example, you may write "8am-12pm, 1pm-6pm" or "10am-12pm, 1pm-5pm, 6pm-9pm."

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Sunday

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Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

27. What is the approximate racial/ethnic breakdown of the active patients seen at the dental clinic, by percentage? (*Total should add up to 100%*)

% Hispanic/Latino

% Black/African American

% Asian/Pacific Islander

% White/Caucasian

% American Indian/Alaskan Native

% Other

% Don't Know/Not sure

28. Approximately what percentage of all of this clinic's active patients are in the following age groups? (*Total should add up to 100%*)

% Under 3

% 3-5

% 6-11

% 12-17

% 18-24

% 25-64

% 65 and older

% Don't Know/Not sure

29. What is the approximate annual household income breakdown of the active patients seen at the dental clinic, by percentage? *(Total should add up to 100%)*

% Less than $10,000

% $10,000 to less than $25,000

% $25,000 to less than $50,000

% $50,000 to less than $75,000

% $75,000 to less than $100,000

% $100,000 or more

% Don't Know/Not sure

30. Approximately what percentage of your active patients are pregnant women?

31. Approximately what percentage of your active patients is currently on Denti-Cal?

32. Approximately what percentage of your active patients is uninsured?

Santa Clara County
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Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

33. Do you know the fluoride levels of the water systems or wells supplying the residences and schools in which most of your child patients live?

- ◯ Yes, for both residence and school
- ◯ Yes, but for residence only
- ◯ Yes, but for school only
- ◯ No
- ◯ Not sure

34. Where do you receive information on the fluoride levels of your patients' water supplies? (*Check all that apply*)

- ☐ Local water treatment plant
- ☐ State health department
- ☐ Local health department
- ☐ Private lab
- ☐ Patients/parents
- ☐ Don't know where to get information
- ☐ Don't need information
- ☐ Other (please specify)

35. In general, does your clinic prescribe dietary fluoride supplement to this clinic's child patients (ages 0-17 years) who live in sub-optimally fluoridated communities?

- Yes
- No
- N/A
- Don't know

36. Approximately what percentage of this clinic's child patients (ages 0-5 years) receive a Caries Risk Assessment?

- None
- 1%-10%
- 11%-30%
- 31%-50%
- 51%-70%
- More than 70%
- Don't know

37. Approximately what percentage of this clinic's child patients (ages 0-5 years) receive topical fluoride treatments every six months?

- None
- 1%-10%
- 11%-30%
- 31%-50%
- 51%-70%
- More than 70%
- Don't know

38. Approximately what percentage of this clinic's child patients (ages 5-17 years) receives sealants?

- None
- 1%-10%
- 11%-30%
- 31%-50%
- 51%-70%
- More than 70%
- Don't know

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Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

39. When addressing tobacco use among children/adolescents (ages 5-17 years) in this clinic, are you primarily concerned with (*Select one*):

- ◯ Smoking only (including vaping)
- ◯ Smokeless tobacco only
- ◯ Both smoking and smokeless tobacco use
- ◯ Parental tobacco use in the home
- ◯ Do not actively address tobacco issues in our office
- ◯ Other (please specify)

40. In which of the following ways has the clinic supported tobacco use prevention or addressed tobacco use for patients of all ages? (*Check all that apply*)

- [ ] Partnered with local organizations
- [ ] Developed a health education campaign
- [ ] Collaborated with local school districts
- [ ] Asked patients about tobacco use, including vaping products
- [ ] Offered counseling on smoking cessation
- [ ] Performed thorough intraoral exams
- [ ] Referred patients to tobacco use cessation programs in the community
- [ ] Offered counseling to patients not to start using tobacco products, including vaping products
- [ ] Prescribed nicotine gum or patch
- [ ] Instructed patients on self-examination of their mouth
- [ ] Not actively engaged in tobacco education
- [ ] None of the above
- [ ] Other (please specify)

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Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

41. For those children who have difficulty obtaining the dental care they need, please rank what you think are the THREE MOST IMPORTANT barriers.

	MOST important	2nd most important	3rd most important
Lack of transportation	○	○	○
Lack/shortage of dentists in the community	○	○	○
Few dentists in the area accepting Medi-Cal patients	○	○	○
Lack of public dental clinics	○	○	○
Lack of money/inadequate insurance benefits to pay for dental care	○	○	○
Fear of dentist	○	○	○
No child care available for siblings	○	○	○
Parents unable to take time off to take child to the dentist	○	○	○
Dental care is low priority for population/low dental IQ	○	○	○
Too long of a wait to see the dentist	◉	○	○
People don't know how or where to obtain dental care	○	○	○
Cultural or language barrier	○	○	○
Parents don't think children have a dental problem	○	○	○
Parents don't want children to miss school	○	○	○
Don't know	○	○	○
Other (specify)	○	○	○

If other, please specify

Santa Clara County
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Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

42. Has your clinic either started seeing, reactivated seeing, or increased the number of Denti-Cal children being seen as a result of the changes in reimbursement rates?

- ◯ Yes, started seeing Denti-Cal children for the first time
- ◯ Yes, reactivated seeing Denti-Cal children
- ◯ Yes, increased the number of Denti-Cal children seen
- ◯ No
- ◯ Not aware of increase in reimbursement rates

43. Did your clinic bill Denti-Cal for at least one child patient in the last 12 months?

- ◯ Yes
- ◯ No

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Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

44. Please rank your THREE MOST IMPORTANT reasons for not seeing child Denti-Cal patients at this clinic.

	MOST important	2nd most important	3rd most important
Too many missed/ no show appointments	○	○	○
Reimbursement rates too low	○	○	○
Cumbersome paperwork	○	○	○
Poor payment response	○	○	○
Patients don't appreciate the dental treatment our clinic provides	○	○	○
Other (specify)	○	○	○

If other, please specify

Santa Clara County
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Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

45. Approximately what percentage of the children (ages 5-17 years) seen in this clinic receive Denti-Cal?

- ◯ None
- ◯ 1%-10%
- ◯ 11%-30%
- ◯ 31%-50%
- ◯ 51%-70%
- ◯ More than 70%
- ◯ Don't know

46. Do you try to limit the number of Denti-Cal children seen in this clinic?

- ◯ Yes
- ◯ No

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Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

47. How do you limit the number of Denti-Cal children seen?*(Check all that apply)*

- [ ] Only treat patients of record or their family members
- [ ] Treat referrals only
- [ ] Treat emergencies only
- [ ] Limited days or hours
- [ ] Treat only certain ages
- [ ] Other (please specify)

Santa Clara County
PUBLIC HEALTH

Santa Clara County Dental Clinic Data Tool

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

48. Which of the following do you consider appropriate activities for schools in promoting dental health? *(Check all that apply)*

- [ ] Annual dental screenings to detect untreated dental disease
- [ ] Referral of students with dental problems to dentists
- [ ] Fluoride mouth rinse or fluoride tablet program (in non-fluoridated communities)
- [ ] The practice of brushing and flossing in the classroom
- [ ] Mouthguard protection in school sports programs
- [ ] Dental health education
- [ ] Offering school lunches and vending machine snacks that help maintain oral health
- [ ] Providing a safe environment to prevent unintentional injuries
- [ ] Dental sealant program
- [ ] Dental treatment services in a school-based clinic
- [ ] Schools shouldn't be involved in the above listed activities
- [ ] Don't know
- [ ] Other (please specify)

49. Which of the following educational / prevention-based guidelines or activities is your dental clinic performing on a regular basis? *(Check all that apply)*

- Caries risk assessment on children 0-5
- Caries risk assessment on children 6-18
- Caries risk assessment on adults
- Oral health education
- Motivational interviewing approach
- Care coordination
- School-based oral health education, screenings and services
- Community-based oral health education such as health fairs
- Virtual dental home
- None of the above
- Other (please specify)

50. Does your dental clinic engage in the following outreach activities to encourage patient enrollment into insurance, such as Medi-Cal, which covers oral health? (Check all that apply)

- Offer one-time application assistance
- Assist with application through the entire eligibility process
- Train clinic staff on Medi-Cal eligibility processes
- Refer individuals to a County office or other enrollment units
- None of the above
- Other (please specify)

Santa Clara County
PUBLIC HEALTH

If your clinic has multiple sites, questions should be answered at the organizational level, not for each individual site.

Please answer all questions to the best of your ability. If you do not know the answer to a question, or the question does not apply to you, you may leave it blank. Please write in an explanation, where possible.

51. How can the California Department of Health Services and/or the Santa Clara Department of Health Services help promote better dental health among children throughout California and in your county? Please rate each of the following.

	Support/ promote WITH financing	Support/ promote WITHOUT financing	Support legislation	Do nothing	No opinion/ don't know
Support dental examinations for children entering school for the first time	○	○	○	○	○
Support school-based oral health promotion/oral disease prevention programs	○	○	○	○	○
Support school-based dental sealant programs for low-income children	○	○	○	○	○
Support community dental clinics for low-income children	○	○	○	○	○
Support school-based dental screening and referral programs	○	○	○	○	○
Support school-based dental clinics for low-income children	○	○	○	○	○
Expand community water fluoridation	○	○	○	○	○
Support mouthguard programs for children engaged in school sports activities	○	○	○	○	○

Other (please specify)

Santa Clara County
PUBLIC HEALTH

52. What suggestions do you have to improve children’s access to preventive dental services and/or dental care?

APPENDIX C: ORAL HEALTH PROGRAM, ORGANIZATION, AND RESOURCE DESCRIPTIONS

Program/resource	Target population	Description
Child Health and Disability Prevention (CHDP)	Children and youth age 0 to 21 on Medi-Cal or who are low-income[202]	Providers enrolled in the CHDP program provide oral health screenings/assessments, health education, referrals to necessary treatment, assistance with establishing a dental home, and care coordination to ensure continuity of care for those undergoing treatment (e.g. appointment scheduling, transportation, access to services) when notified by the provider.[133] CHDP also trains pediatric primary care providers on providing fluoride varnish, on referring patients for dental treatment, and on assisting patients with establishing a dental home.
Chronic Disease and Injury Prevention (CDIP)	Low income and vulnerable communities[133]	CDIP runs the following programs that are related to oral health: Active & Safe Communities, Healthy Food & Beverage Environments, Tobacco-Free Communities, and Nutrition Education Obesity Program.[205–207] These programs focus on key factors that contribute to oral health disease – e.g. sugar consumption, nutrition, and tobacco – including the intersection of all of these. Many activities are a part of this work including nutrition education in K-8 classrooms, partnering with school districts to improve nutritional standards, community-based health education, and tobacco education. CDIP also collaborates with external partners such as Healthier Kids Foundation and FIRST 5 to share educational materials.[133] In addition to the individual and community-based education described above, CDIP is also involved in policy work to reduce consumption/access to sugar sweetened beverages and increasing insurance coverage for pre-diabetes/diabetes work.[133]
Collaborative for Oral Health	County of Santa Clara residents	In place since 2017 and stemming from a need for more medical and dental integration, the collaborative is chaired by Dr. Shakalpi Pendurkar, and meets monthly.[133,208] The collaborative has been able to work on better integrating dental and medical, determining how to use Proposition 56 funding, improving oral health education and access to preventive services, and integrating oral health into overall health for residents. Members include approximately three dozen stakeholders from multiple sectors including both dental and medical: Santa Clara County Dental Society, SCC PHD, FIRST 5, Kaiser, community health centers (FQHCs and community clinics), governmental representatives, nonprofit organizations, and private dentists.[208]

Program/resource	Target population	Description
Community Health Centers (CHCs)	Low-income and underserved populations	Multiple CHCs (FQHCs, FQHC Look-Alikes, and community clinics) provide dental care, including comprehensive dentistry, enrollment, outreach, care coordination, and early intervention, in the County of Santa Clara. These include Foothill Community Health Center, Gardner Family Health Network, Indian Health Center, School Health Clinics of Santa Clara County, North East Medical Services, CityTeam San Jose, and Health/Tooth Mobile. Many of these centers have multiple sites and are co-located or integrated with medical clinics. Community health centers in the County of Santa Clara often collaborate with other organizations and agencies, including schools and the county hospital system, to provide services.
Dental provider schools	Dental provider students	Dental hygiene and assistant programs are offered in the County of Santa Clara at Foothill College[209,210] and Carrington College.[211] Dental assistant programs are also offered at San Jose City College,[212] Gavilan College,[213] and Silicon Valley Career Technical Education.[214] The dental hygiene programs offer free and low-cost teeth cleanings. Nearby counties have two dental schools that train dentists and provide low cost care (UCSF School of Dentistry, University of the Pacific Arthur Dugoni School of Dentistry).[215]
FIRST 5	Families with a child, prenatal to age five[133]	FIRST 5 provides oral health screenings in collaboration with the Healthier Kids Foundation in multiple locations, including, but not limited to FIRST 5 Family Resource Centers and early learning settings, and in homes through public health nursing. Children who have an oral health concern are referred and connected to a dental home for further assessment and treatment, such as comprehensive oral health and sedation services through its partnership with Gardner Family Health Network and Western Dental.[133] Through collaboration with The Health Trust, FIRST 5 provides oral health outreach and education in homes, schools, and community settings. These efforts inform families about positive oral health practices and connect children and families to dental insurance.[133,216] FIRST 5 has been a strong supporter of community water fluoridation and has contributed over $1 million to fluoridation in San Jose. FIRST 5 also promotes oral health through the distribution of the children's books *Potter the Ottter: A Tale About Water* and *Potter the Otter Visits the Dentist*.

Program/resource	Target population	Description
Head Start and Early Head Start	Low-income families with toddlers and preschool age children (ages 0 to 5) in the County of Santa Clara and parts of San Benito County[133,203]	Provides oral health education, referrals for dental exams, and referrals for follow-up treatment in their center-based and home-visiting programs. Family Services Staff work directly with families to ensure that children in the program meet the health requirements, including connection to a dental home within 90 days, dental exam with preventive care (x-rays, cleaning, fluoride), and necessary dental treatment initiated within 90 days of child entering the program. Head Start and Early Head Start centers also base tooth brushing as a part of their daily schedule. Finally, staff help families access dental care by partnering with the Santa Clara County Dental Society or using Head Start funds as a last resort when cost of treatment if prohibitive.[133]
Healthier Kids Foundation (HKF)	Low income children and youth ages 0 to 18	HKF focuses on bringing preventive and treatment dental care to low income children by providing dental screenings and referrals for services and treatment through a case management program at 900 sites, which are primarily in 5 school districts on the east and south side of the county. The case managers are also able to help children and their families apply for Medi-Cal.[133,217]
The Health Trust	Low income children, young adults, adults, seniors	A health-equity focused foundation in Silicon Valley, The Health Trust, in partnership with FIRST 5, provides health education to community members through outreach events, workshops, and a community health worker program.[216] The Health Trust also leads water fluoridation campaign efforts in the County of Santa Clara.[218]
Public Health Nursing (PHN)	Pregnant women, new parents and babies, high-risk infants, children 0-5 in the child welfare system, adults and seniors with chronic disease or complex medical needs[133]	Public health nursing programs such as Black Infant Health, Nurse Family Partnership, PHN Regional Services, FIRST 5 PHN (collaboration between FIRST 5, Department of Behavioral Health Services, and Department of Family and Children Services), and California Children's Services provide public health nursing and home visiting services, which may include oral health education and dental care referrals.[133]
San Andreas Regional Center	People with developmental and intellectual disabilities, seizure disorders, autism, cerebral palsy, and brain injuries acquired before age eighteen[133]	The Regional Center provides referrals to dentists and registered dental hygienists in alternative practice (RDHAP) familiar with working with the target population (for both general and sedation dentistry), facilitates and assists with paying for treatment when necessary, connects clients to in-home dental care using dental hygienists, trains direct care staff in residential care homes on oral health, maintains and provides a database of oral health education materials, and conducts ongoing networking to find appropriate resources to serve the needs of their population.[133]

Program/resource	Target population	Description
Santa Clara County Dental Society	Licensed dentists who choose to become members of the local division of the California Dental Association and the American Dental Association	This professional organization represents more than 1,700 dentists, about 80% of the licensed dentists in most of the County of Santa Clara (excluding Mountain View and Palo Alto). The association provides clinical and practice management programs, a job bank for dentists and auxiliary dental personnel and referral to dentists for community members. Society members provide annual dental screenings for approximately 6,000 students in local schools during National Children's Dental Health Month in February.[133]
Santa Clara County Dental Foundation (SCCDF)	Underserved residents referred through selected local non-profit agencies	Connected with the Santa Clara County Dental Society, the SCCDF's mission is to improve oral health by providing resources and collaborating to improve access to care, support SCCDS members in their service to the community, promote oral health education and work with partners who share this mission. The SCCDF works with several non-profit agencies serving victims of domestic violence, refugees, veterans and individuals recovering from addiction problems to provide pro bono dental services for their clients needing dental care. The SCCDF also provides scholarships to dental assisting and dental hygiene students at local schools.[219]
Santa Clara County Juvenile Probation Department	Youth in custody 21 and under	At the two juvenile detention facilities in the county, nurses provide dental assessments upon arrival and a dentist, who is on-site weekly, provides necessary dental care. Some dental treatment services are available only through referral or transfer (e.g. root canals). Youth also participate in oral hygiene education while in custody as well. Upon release, there is limited follow-up and outreach, which may include referrals to community dentists and assistance with Medi-Cal applications.[133]
Santa Clara Valley Medical Center (SCVMC)	County of Santa Clara residents, especially low-income residents and underserved populations	SCVMC is a county safety net for oral health, regardless of insurance, including education, prevention, treatment, and emergency services at 10 clinics. This includes a wide variety of dental services and initiatives (general, emergency, pediatric, some surgical specialties) at most of the clinics, a mobile dental clinic, a dental program for foster youth (in progress), and integration of medical, dental, and social services. Examples of the integration efforts include placing a registered dental assistant in the pediatrics department where they provide fluoride varnish, and incorporating dental into the Reception, Assessment, and Intake Center.[133] SCVMC dental network of clinics has centralized care coordination in the form of a call center.[133,201]

Program/resource	Target population	Description
School based health centers	Students at public schools	There are ten school based health centers in the County of Santa Clara, primarily serving students in San Jose, which provide dental prevention and/or treatment.[169] The centers that provide dental care are run by three organizations: Foothill Community Health Center (an FQHC),[220] School Health Clinics of Santa Clara County (an FQHC),[221] and Health Mobile (a mobile community clinic)[222]
Virtual Dental Home (VDH)	Low-income and underserved populations	An initiative started by University of Pacific Center for Special Care, VDH is a community-based oral health telehealth delivery system in which people receive services in community settings through telehealth teams. This system links diagnostic, preventive, and early interventions dental services that happen in community settings with dental offices. Indian Health Center is in the process of implementing/expanding their virtual dental home program into several locations.[133]
Women, Infants, and Children (WIC)	Low-income pregnant, postpartum, and breastfeeding women, infants, and children up to age 5 who are at nutritional risk[204]	At their thirteen sites (7 run by the County of Santa Clara and 8 run by community health centers), WIC provides clients with nutrition and health education, breastfeeding education and support, checks to buy health foods and referrals to community services.[133]

APPENDIX D: GLOSSARY OF TERMS

Affordable Care Act (ACA): The landmark health reform legislation passed in March 2010 that made numerous improvements to both Medicaid and the Children's Health Insurance Program by changing the structure and availability of health insurance coverage and expanding Medicaid coverage to millions of low-income Americans.[223]

Best Practice: In public health, a best practice is an intervention that has shown evidence of effectiveness in a particular setting and is likely to be replicable to other situations.[224]

Care Coordination: As defined by authors of a systematic review of care coordination definitions, care coordination is "the deliberate organization of patient care activities between two or more participants (including the patient) involved in a patient's care to facilitate the appropriate delivery of health care services. Organizing care involves the marshalling of personnel and other resources needed to carry out all required patient care activities and is often managed by the exchange of information among participants responsible for different aspects of care."[225]

Care Coordinator: A health professional trained to help one manage health care by coordinating different aspects of the care and, as feasible, addressing patients' barriers to care.

Caries: Also referred to as tooth decay or cavities, dental caries is a bacterial disease caused by a buildup of plaque (sticky film) that leads to the destruction of the tooth structure. If left untreated it can lead to cavities in the tooth's surface and other dental issues.[226]

Caries Experience: A way to define oral health status, caries experience refers to any current or past evidence of having dental caries as defined by having at least one decayed, extracted/missing or filled tooth due to caries.[227]

Community Health Center (CHC): Includes Federally Qualified Health Centers (FQHCs), FQHC look-alikes, and community clinics. CHCs provide a range of health services to underserved residents of a specific geographic region. They are often patient-directed and involve the local community in the governance of the center.[228]

Community Health Workers: A trusted member of the community, or someone who has unique connections and understanding of a community, who works as a frontline public health worker to build local capacity, provide health education, conduct outreach, and advocate for the community.[229]

Crowns: An artificial covering for a tooth that has been broken, weakened, or damaged. It is strong, can be made of various materials, and resembles a natural tooth.[230]

Dental Home: The ongoing relationship between a dentist and a patient, inclusive of all aspects of oral health care delivered in a comprehensive, continuously accessible, coordinated, and family-centered way. The dental home should be established no later than 12 months of age to help children and their families institute a lifetime of good oral health. A dental home addresses anticipatory guidance and preventive, acute, and comprehensive oral health care and includes referral to dental specialists when appropriate.[115]

Denti-Cal: The Medi-Cal Dental program which provides dental insurance coverage to people who qualify for and are enrolled in Medi-Cal, i.e. low-income children, adults and seniors, and individuals who are disabled, in the foster care system, are pregnant, or have specific diseases (regardless of income).[79,231]

Early Childhood Caries (ECC): an infectious and chronic disease that destroys tooth structure leading to loss of chewing function, pain, and infection in children up to five years of age. Severe Early Childhood Caries refers to "atypical," "progressive," "acute," or "rampant" patterns of dental caries, signifying a disease of higher acuity. Early childhood caries is often caused by poor diet and overuse of bottles with infants and is generally considered to be preventable.[232]

Extraction: The removal a tooth from its socket in the bone when there is too much damage for the tooth to be repaired.[233]

Federal Poverty Level (FPL): A threshold that is used by the Census Bureau and other governmental agencies to determine who is in poverty. The poverty threshold varies by family size and composition, but not geographically. For example, the poverty threshold for a family of four (with 2 children under the age of 18) was $24,339 in 2016, regardless of the cost of living in the region.[73]

Federally Qualified Health Centers (FQHCs): FQHCs are community-based health care providers that care for underserved populations. They receive funds from the federal government which require them to meet a stringent set of requirements, including ensuring that care is affordable and incorporating community input into the center's governing.[234]

Federally Qualified Health Center (FQHC) Look-Alike: Community-based health care providers for underserved populations that meet the requirements of an FQHC, but do not receive federal funding.[235]

Fillings: A treatment done on a tooth that has a cavity, or small hole, to repair the damage. The decayed tooth tissue is removed and then replaced with a filling material.[236]

Fluoride Varnish: A coating of fluoride that is applied to tooth surfaces every three to six months in order to prevent or stop decay. Fluoride varnish can be applied by both dental and medical professionals.[237]

Free and Reduced Price Meal (FRPM) program: A program that offers free or reduced meals to students from households with incomes at or below a certain level. Children who are eligible for the FPRM program have a family income under 130% (for free meals) and 131-185% (for reduced price meals) of the Federal Poverty Level.[77]

Gum Disease: An infection of the gums, the tissue that holds teeth in place. It is also known as periodontal disease and is often caused by poor home oral health practices that lead to a buildup of plaque, a sticky bacteria, on teeth. When left untreated, it can lead to sore/bleeding gums, pain when chewing, and tooth loss.[238]

Healthy People 2020 (HP 2020): National health-related goals and objectives, published every 10 years by the U.S. Department of Health and Human Services, which identify the most significant preventable threats to health and establish national goals to reduce these threats. The goals of HP 2020 are to: "1) Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death, 2) Achieve health equity, eliminate disparities, and improve the health of all groups, 3) Create social and physical environments that promote good health for all, 4) Promote quality of life, healthy development, and healthy behaviors across all life stages."[239]

Indicator: A specific, observable, and measurable (quantitative or qualitative) accomplishment or change showing progress made toward achieving a specific output or outcome in a work plan or program.[240]

Kindergarten Oral Health Requirement (AB1433): A California law passed in 2006 that was enacted to help schools support student readiness and success, creating a system through which schools can identify students who suffer from untreated dental disease and help parents connect to a dental home. This law requires that children receive a dental assessment before entering kindergarten or first grade (if they did not receive it before kindergarten).[100]

Medi-Cal: California's Medicaid program, financed equally by the state and the federal government. It is public health insurance with specific eligibility requirements, primarily serving low-income children, adults, and seniors. People who are not low-income may still qualify if they,

for example, a have a disability, are in foster care, are pregnant, or have specific diseases. Medi-Cal is an entitlement program, meaning that if an individual qualifies, they receive benefits.[79]

Oral and Pharyngeal Cancer: Cancers of the mouth and throat, which can develop on the tongue, gums, floor of the mouth, palate, lips, oral cavity, pharynx, and other areas of the mouth. The 5-year survival rate for these cancers is roughly 62%.[241]

Prenatal: Occurring or existing before birth. Prenatal care is the health care women receive from healthcare professionals, such as obstetricians or midwifes, during pregnancy.

Preventive Dental Visit: A dental visit that promotes good oral health and function by preventing or reducing the onset and/or development of oral disease. These visits could include procedures such as dental exams, cleanings, sealants, fluoride varnish application, and other preventive procedures.[242]

Primary Teeth: Also known as deciduous teeth, and commonly known as "baby teeth", these are the first set of teeth in the development of dentition. Primary teeth contribute to a child's ability to speak clearly and chew naturally. They will be replaced with permanent teeth when they are ready to erupt.[243]

Priority Populations: Populations that are underserved and/or uniquely impacted by an identified health issue. Priority populations may be defined by demographic characteristics, geography, or other identifying characteristic.

Public Health Nurse (PHN): A specialty practice within nursing and public health that focuses on the health needs of entire populations. The work done by a PHN often emphasizes primary prevention and can include the application of specific interventions, program planning, community collaboration, health education, advocacy, and policy development.[244]

Registered Dental Hygienist (RDH): RDHs have completed an accredited Dental Hygiene program and passed a written examination. They work closely with dentists to meet the oral health needs of patients by performing services such as patient screening, applying sealants and fluoride varnish, taking x-rays, and providing oral health education and counseling.[245]

Root Canal: A treatment, also called endodontics, which is needed when a tooth's blood or nerve supply is infected. When done on the primary teeth of children, it is often referred to as a "baby root canal."[246]

Sealants: "Dental materials that dentists apply to the pit and-fissure surfaces of teeth. The sealant material penetrates pits and fissures and then hardens, acting as a physical barrier that stops or inhibits the ingress of bacteria and nutrients."[117]

Sedation: A state of relaxation or loss of consciousness induced in order to safely complete dental procedures. It is achieved by a dentist administering a sedative through inhalation (nitrous oxide), orally (a pill), or intravenously (by injection).[247]

Space maintenance: A restoration procedure by which an appliance is passively used to hold teeth in place after the loss or removal of teeth.[248]

Strategic Plan: A guiding document that shapes the work being done by an organization, program, or department by setting forth the vision, mission, guiding principles, values, and strategic priorities. A strategic plan also outlines measureable goals and objectives, and includes implementation steps.[249]

Tooth Decay: Damage that happens when bacteria causes the tooth's surface, the enamel, to weaken. This damage can lead to cavities, pain, infection, and tooth loss.[250]

Virtual Dental Home (VDH): A community-based "dental home" at which people are able to receive basic dental care in community settings where they live or receive other non-oral health services. This system links dental care providers located in remote offices with community-based practitioners to promote oral health, with a focus on preventive care.[251]

Water Fluoridation: The addition of supplemental fluoride to drinking water in the community, which is a cost effective and safe way to prevent tooth decay and cavities.[192]

APPENDIX E : ACKNOWLEDGEMENTS

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Thank you to all the community partners that shared their data on select populations and programs; assisted in coordinating and hosting focus group and survey distribution; and, participated as a key informant interviewee: Collaborative for Oral Health, County of Santa Clara Public Health Department, County of Santa Clara Probation Department, FIRST 5 Santa Clara County, Gardner Family Health Network, Healthier Kids Foundation, Indian Health Center of Santa Clara Valley, Ranch Medical and Dental Clinics, San Andreas Regional Center, Santa Clara County Dental Society/Foundation, Santa Clara County Office of Education, Santa Clara Family Health Plan, Santa Clara Valley Medical Center Valley Homeless HealthCare Program, Santa Clara Valley Medical Center Ambulatory Support Services, Santa Clara Valley Health and Hospital System.

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We are deeply grateful to all the community members who contributed their time and effort on participating in the needs assessments.

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