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ASSOCIATES**



**An Update of Selected  
Dental Utilization Data for  
Santa Cruz County**

**April 2018**

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# INTRODUCTION



This report was prepared by Barbara Aved Associates (BAA), a Sacramento-based health consulting firm, for Dientes Community Dental Care, to benefit the continuing efforts of healthcare providers, community leaders, policy makers and advocates to improve oral health in Santa Cruz County.

The report updates selected data presented in the comprehensive report *Central Coast Oral Health Needs Assessment* BAA produced for Dientes in April 2016—that formed the basis for the subsequent broad community response reflected in the group’s *Oral Health Access Strategic Plan 2017-2020*.

While access to oral health services in Santa Cruz County has improved as a result of this community leadership and commitment, opportunities continue to exist for strengthening it. There is an increasing recognition of the importance of oral health to overall general health and a growing appreciation for the psychosocial impact of oral health influencing how people appear, work, enjoy life, speak, chew and socialize. Evidence continues to build for the association between periodontal disease and adverse health outcomes and the cost savings that are possible for those who receive preventive services and even those who can receive early treatment.

## METHODS



The Office of Statewide Health Planning and Development provided the data on emergency department visits for dental conditions using discharge data when an oral condition was the primary diagnosis.<sup>1</sup> The oral conditions were identified using the ICD-10 diagnosis codes; the codes were updated in October 2016 from the ICD-9 codes that were used in the earlier needs assessment. Some of the dental conditions are considered to be *preventable* (referred to as *ambulatory care sensitive conditions* in our original report), and are therefore regarded as potentially avoidable as they reflect conditions that would “likely or possibly benefit from better prevention or primary care.”<sup>2</sup> The Association of State and Territorial Dental Directors provided the ICD-10 dental codes OSHPD used to pull the data for this report, including the set considered preventable.<sup>3</sup>

We retrieved population-based utilization data from the California Health Interview Survey (CHIS)—the largest state health survey in the U.S.—to examine dental service utilization among the overall Santa Cruz population. The most recently available comparative data were retrieved from Applied Survey Research Santa Cruz County Community Assessment Project (2015) and the American Dental Association Health Policy Institute.

Data on Denti-Cal utilization came from the Department of Health Care Services (DHCS) Medi-Cal Dental program. DHCS staff does not prioritize what it considers “ad hoc” requests for dental data—as made by this study to update the earlier needs assessment—and consequently receipt of data required a 10-month wait using the Public Records Act to request it and intervention by Assemblymember Mark Stone’s office to receive it.

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<sup>1</sup> Oral conditions as a secondary diagnosis were not analyzed due to very small occurrences.

<sup>2</sup> Shortridge EF, Moore, JR. Use of Emergency Departments for Conditions Related to Poor Oral Health Care. Rural Health Research & Policy Centers, and NORC Walsh Center for Rural Health Analysis. Final Report, August 2010.

<sup>3</sup> Recommended Guidelines for Surveillance of Non-Traumatic Dental Care in Emergency Departments. Association of State and Territorial Dental Directors. July 2017. Personal communication August 2017. Non-traumatic dental conditions are defined as “range of oral health needs that arise from common dental conditions, such as tooth decay and periodontal disease, and ordinarily do not require care in an emergency department.”

# FINDINGS



## I. Emergency Department Use for Preventable Dental Care

Dental care, and in particular care for non-traumatic dental conditions, provided in emergency departments has been identified as both an indication of lack of access to the traditional primary care dental system, and an expensive and mostly ineffective alternative source of care. EDs generally provide only palliative care for oral problems (e.g., antibiotics and pain medication), addressing the symptoms, but not the cause of the problems.<sup>4</sup>

### Emergency Department Dental Visits by Santa Cruz County Residents

In FY 2016-17, there were 74,320 ED visits made by Santa Cruz County residents for all reasons. Of the ED visits, 821 (1.1%) were due to a primary oral condition diagnosis; the majority (60.9%) of these were made for a dental condition considered *preventable* (Table 1).<sup>5</sup> The highest proportion of preventable ED visits occurred among the age group 21-64, underscoring the especially high need for linkage to a dental home for non-senior adults.

**Table 1. ED Visits Made by Residents of Santa Cruz County<sup>1</sup> by Age Group, FY 2016-17**

	Age 0-5		Age 6-20		Age 21-64		Age 65+		All Ages	
All Reasons	8,083		12,321		42,848		11,128		74,320	
All Oral Conditions	106	1.3%	113	.92%	534	1.2%	68	.61%	821	1.1%
Preventable Oral <sup>2</sup> Conditions	25	0.3%	57	.46%	386	0.9%	32	.29%	500	.67%
Preventable Oral as a % of all Oral	23.6%		50.4%		72.3%		47.1%		60.9%	

<sup>1</sup>County residents treated in Santa Cruz County.

<sup>2</sup> Primary ICD-10 Codes.

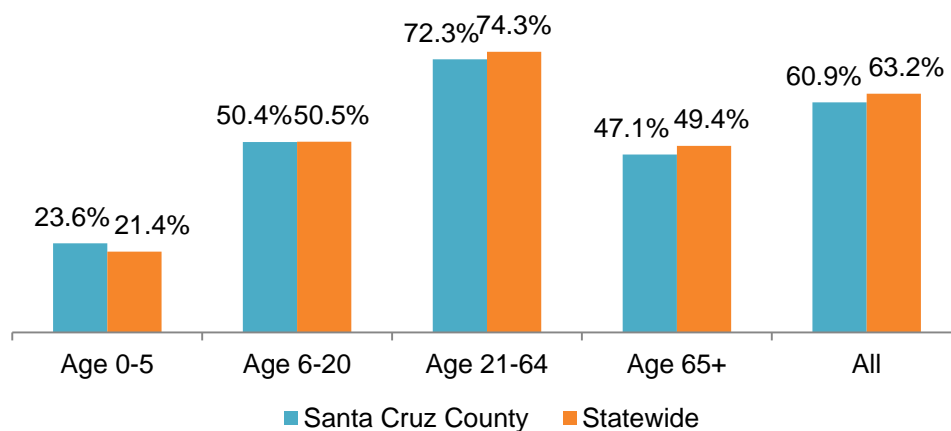
Source: Office of Statewide Health Planning and Development, Healthcare Information Resource Center.

<sup>4</sup> Recommended Guidelines for Surveillance of Non-Traumatic Dental Care in Emergency Departments. Association of State and Territorial Dental Directors. July 2017.

<sup>5</sup> Data for ED visits considered avoidable should not be compared to previous years when ICD-9 Codes were used.

Overall, Santa Cruz County residents' use of the ED for preventable dental conditions generally mirrored use statewide in FY 2016-17. Children age 0-5 in Santa Cruz County visited the ED at a slightly higher rate, 23.6%, than the statewide average, 21.4% (Figure 1).

**Figure 1. Percent of ED Visits for a Preventable Dental Condition<sup>1</sup> as a Percent of all ED Oral Visits Made by Residents of Santa Cruz County<sup>2</sup> and Statewide, FY 2016-17**



<sup>1</sup> Primary ICD-10 Codes .

<sup>2</sup> County residents treated in Santa Cruz County.

Source: Office of Statewide Health Planning and Development, Healthcare Information Resource Center.

### Emergency Department Dental Visits at County EDs

In FY 2016-17, there were 500 ED visits coded as a preventable dental condition at the 2 hospital ED facilities in Santa Cruz County (Table 2).

**Table 2. Number of ED Visits Made by Children and Adults to a Santa Cruz County ED<sup>1</sup> for a Preventable Dental Condition<sup>2</sup>, FY 2016-17**

Facility	Children 0-20	Adults 21+	Total
Dominican Hospital	40	271	311
Watsonville Community Hospital	42	147	189
<b>Total</b>	<b>82</b>	<b>418</b>	<b>500</b>

<sup>1</sup> By county of facility.

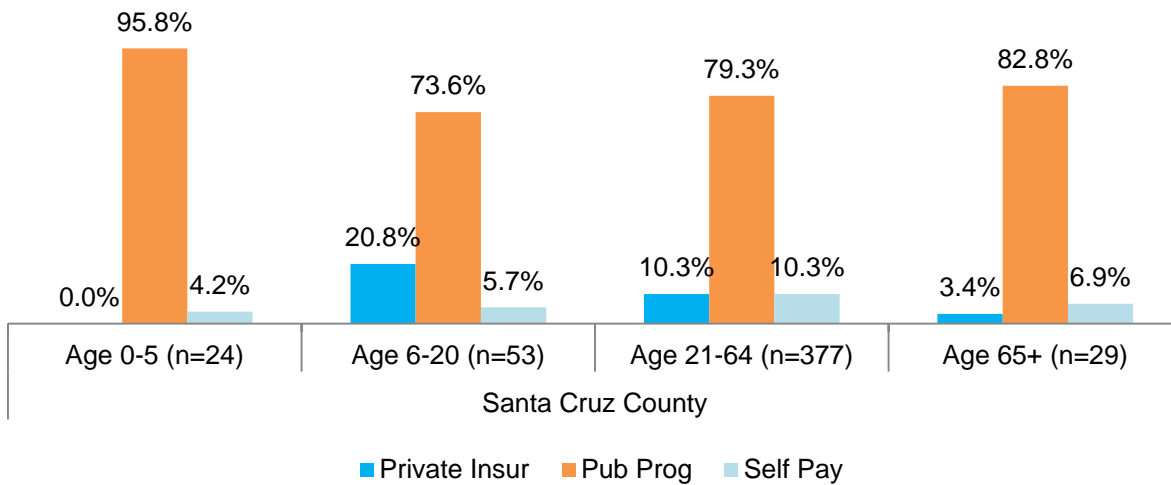
<sup>2</sup> Primary ICD-10 Codes.

Source: Office of Statewide Health Planning and Development, Healthcare Information Resource Center.

## Emergency Department Dental Visits by Payer Source

Public programs—nearly entirely represented by Medi-Cal for the non-senior populations—picked up the tab for the clear majority of Santa Cruz County residents’ ED preventable dental visits in FY 2016-17 (Figure 2). Just over 10% of the adult visits fell into the self-pay category—generally people without dental insurance but not qualified to receive Medi-Cal dental benefits—a category for which facilities are sometimes never paid. The biggest impact where prevention would have paid off relative to Medi-Cal was among children age 0-5.

**Figure 2. Payer Source for ED Visits Made by Santa Cruz Residents<sup>1</sup> for a Preventable Dental Condition,<sup>2</sup> by Age Group, FY 2016-17**



<sup>1</sup>County residents treated anywhere.

<sup>2</sup> Primary ICD-10 Codes.

Source: Office of Statewide Health Planning and Development, Healthcare Information Resource Center.

## II. Utilization of Dental Services

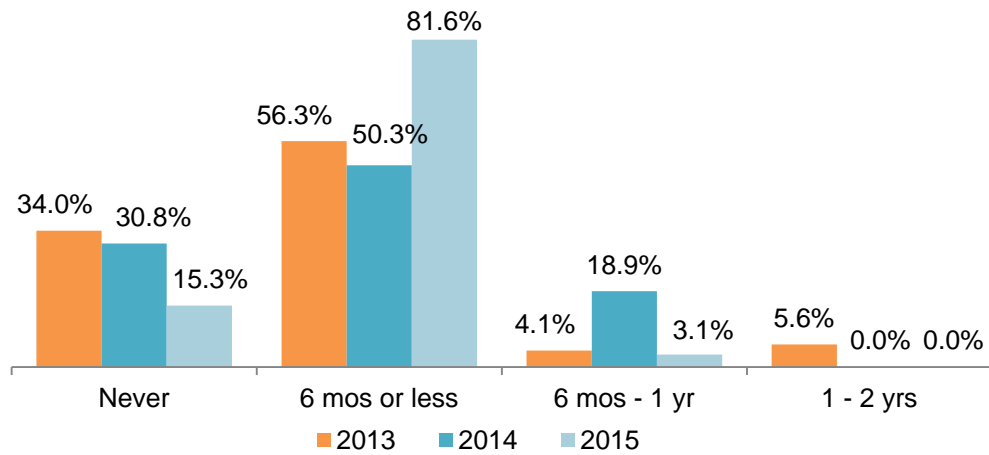
### Population-Based Utilization

#### Children

Overall, the proportion of all children in Santa Cruz County visiting the dentist appears to be improving. According to the CHIS, 81.6% of Santa Cruz respondents reported taking their child age 1-11<sup>6</sup> to a dentist within the past 6 months (Figure 3 on the next page). The proportion of children who had *never* visited the dentist dropped from 34% in 2013 to 15.3%--a 55% improvement.

<sup>6</sup> For this measure, the CHIS question asks parents to include “any child up to age 11 with teeth so it is possible the age group contains some children <1.”

**Figure 3. Time Since Last Dental Visit, Santa Cruz County, Children**

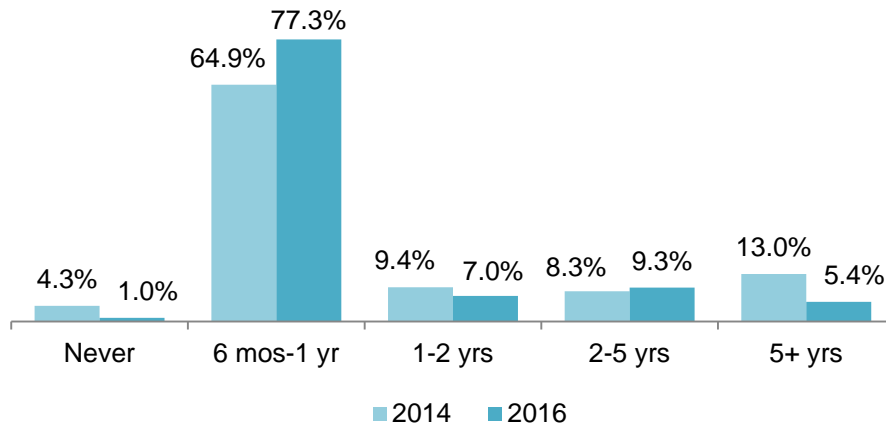


Source: California Health Interview Survey, multiple years.  
 Note: some data statistically unstable due to small sample size

## Adults

In 2016, over three-quarters (77.3%) of Santa Cruz County adults reported making a dental visit within the past year, up from two-thirds (64.9%) in 2014—a 19% improvement. The percentage who reported never making a visit, or not having one in more than 5 years, also dropped between 2014 and 2016; greater awareness of oral health benefits and expanded access could be important reasons for the improvement.

**Figure 4. Time Since Last Dental Visit, Santa Cruz County Adults**

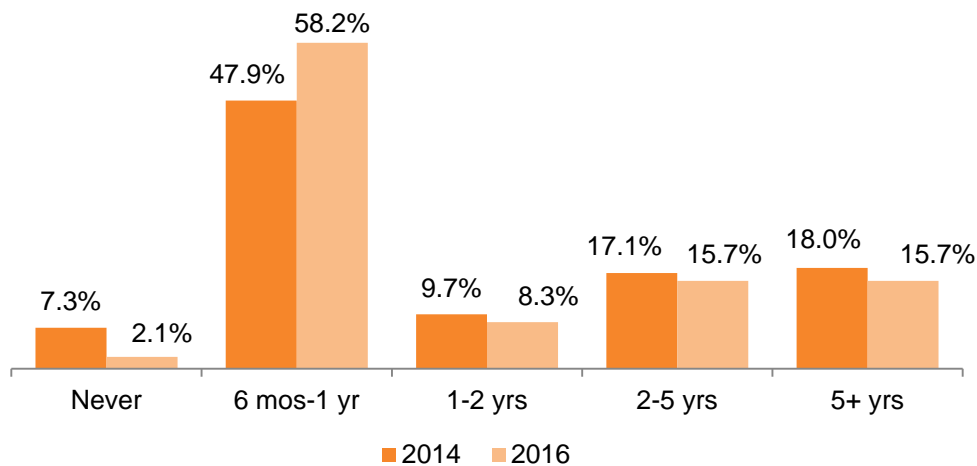


Source: 2014 and 2016 California Health Interview Survey  
 Note: some data statistically unstable due to small sample size



Improvement in the use of dental care occurred at a slightly higher rate for low-income Santa Cruz County adults (Figure 5)—a 21.5% change in annual dental visits between 2014 and 2016—than for adults in the county in general.

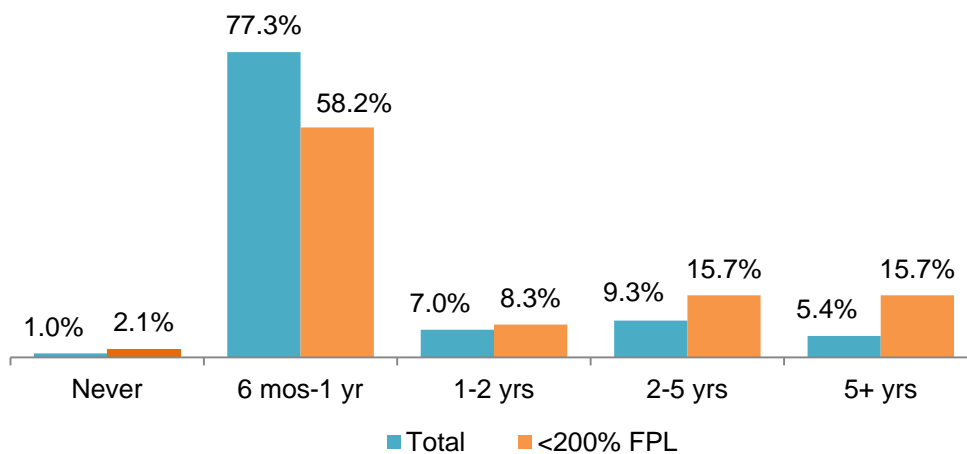
**Figure 5. Time Since Last Dental Visit, Santa Cruz County, Adults Living Under 200% Federal Poverty Level**



Source: 2014 and 2016 California Health Interview Survey  
 Note: some data statistically unstable due to small sample size

While annual dental visits for all Santa Cruz County adults was more favorable in 2016 than 2014, those living under 200% of the federal poverty level reported 24.7% fewer visits, 58.2% vs. 77.3% (Figure 6).

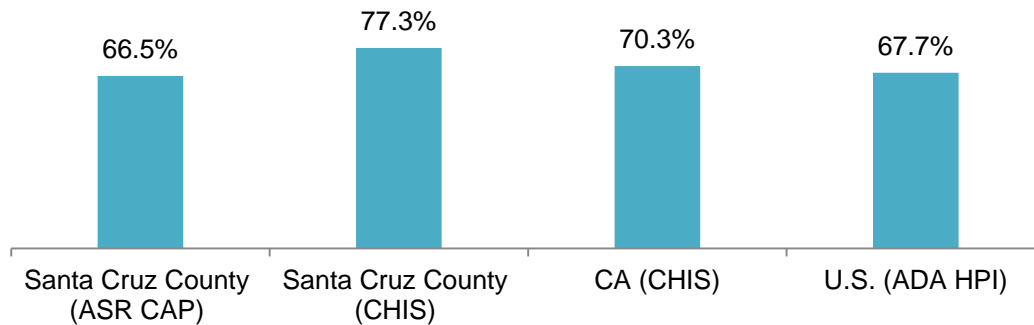
**Figure 6. Time Since Last Dental Visit, Santa Cruz County, Total Adults and Adults Living Under 200% Federal Poverty Level**



Source: 2016 California Health Interview Survey  
 Note: some data statistically unstable due to small sample size

Although all of the adult groups represented in Figure 7 are not strictly comparable, other than the Santa Cruz County Community Assessment Project survey findings, population-based telephone surveys show that, overall, adults in Santa Cruz County visit the dentist at moderately higher rates than adults state- and nationwide.

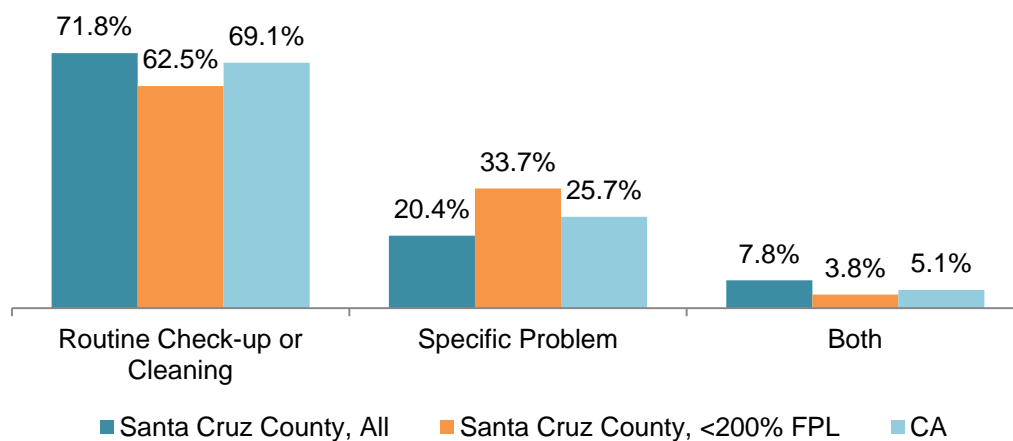
**Figure 7. Percentage of Adults with Dental Care in the Last Year, Santa Cruz County, CA and U.S.\***



\* Respondents answering "yes" when asked, "In the past 12 months, have you had dental care?"  
 Sources: Applied Survey Research Santa Cruz County Community Assessment Project (2015); Santa Cruz County and California CHIS (2016), ADA Health Policy Institute analysis of Harris Poll survey data (2015).

As Figure 8 makes clear, in 2016 poorer adults in Santa Cruz County visited the dentist for a specific dental problem more often than the general population of adults, 33.7% vs. 20.4%--a 65% difference.

**Figure 8. Reason for Adults' Last Dental Visit, Santa Cruz County and California**



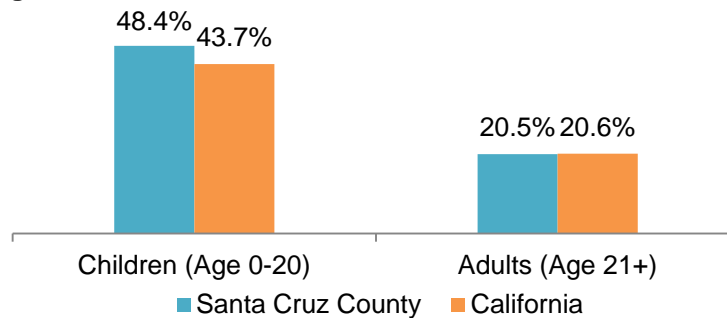
Source: 2016 California Health Interview Survey  
 Note: some data statistically unstable due to small sample size

## Denti-Cal Utilization

### Annual Dental Visit

In FY 2015-16, an interim period between our baseline needs assessment report and the current update, DHCS began to use different parameters for reporting utilization than in prior years (and varying fiscal periods). Annual Dental Visit now represents the appropriate indicator for reporting Denti-Cal utilization. (The DHCS performance measure for ADV is the percentage of beneficiaries who had at least one dental visit during the measurement period.) This makes tracking from year to year more challenging as well as trying to make comparisons between fiscal and calendar years. In 2015-2016, Santa Cruz County children’s utilization was 48.4%, more favorable than statewide at 43.7%. (Note that in 2014, using different eligibility criteria, county children age 0-20 utilization was 58.6% compared to state utilization at 52.5%). Adults in the county visited the dentist at essentially the same rate as adults in the rest of the state, 20.5% (Figure 9)—essentially reflecting the drop that occurred in Medi-Cal dental benefits in 2009.

**Figure 9. Annual Dental Visit, Children and Adults, 2015-2016**



Note: Beneficiaries who were eligible for at least 90 days continuously between Oct 2015 and Sep 2016.  
Source: Department of Health Care Services Medi-Cal Dental Services Division.

The Denti-Cal utilization data in Table 3 were the most recent data at the time of our request, June 2017). The table displays the number of child and adult beneficiaries in Santa Cruz, the number who utilized at least one dental service and the utilization rate. The data are broken out by type of provider.

**Table 3. Number of Denti-Cal Beneficiaries, Users, and Utilization Rate, 2016**

Age Group	Beneficiaries <sup>1</sup>	Total		FQHC-Only		Non-FQHC Only	
		Users	Utilization	Users	Utilization	Users	Utilization
Age 0-3	9,383	3,093	33.0%	1,515	16.2%	889	9.5%
Age 4-5	5,357	2,629	49.1%	854	15.9%	817	15.3%
Age 0-5	14,740	5,722	38.8%	2,369	16.1%	1,706	11.6%
Age 6-20	27,336	13,214	48.3%	2,743	10.0%	4,954	18.1%
Age 21-64	45,195	8,859	19.6%	2,412	5.3%	3,441	7.6%
Age 65+	6,196	1,557	25.1%	312	5.0%	702	11.3%
Total <sup>2</sup>	93,467	29,352	31.4%	7,836	8.4%	10,803	11.6%

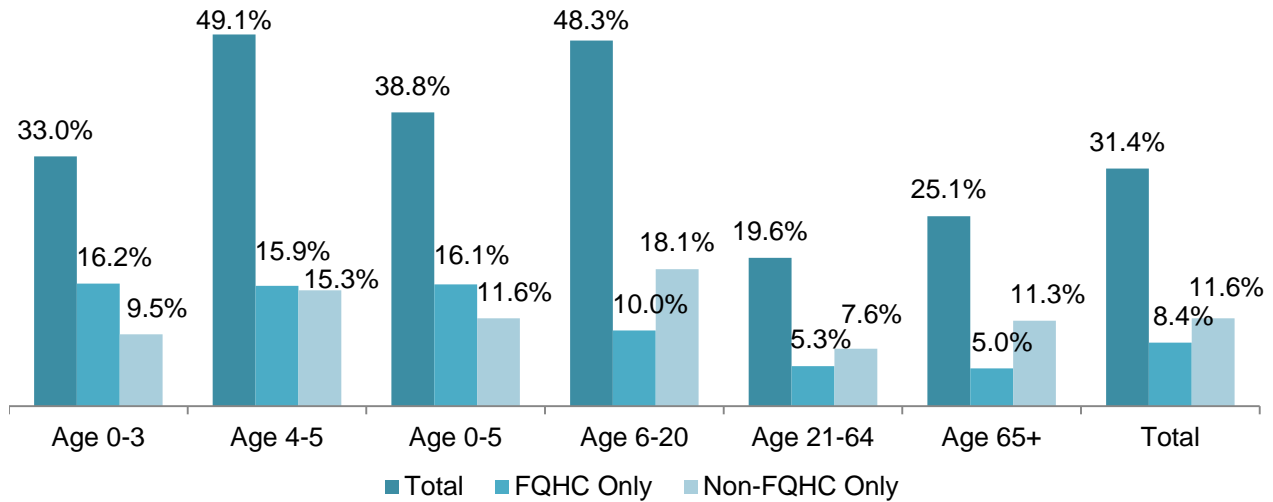
Source: Medi-Cal Dental Division, April 11, 2018.

<sup>1</sup>Includes unduplicated beneficiaries with no continuous eligibility requirements.

<sup>2</sup>To avoid duplication, total does not include age group 0-3.

Children age 0-5 with Denti-Cal made a higher percentage of dental visits to an FQHC-only provider than to private dentists; after age 6, private dentists saw a greater proportion of each age group (Figure 10).

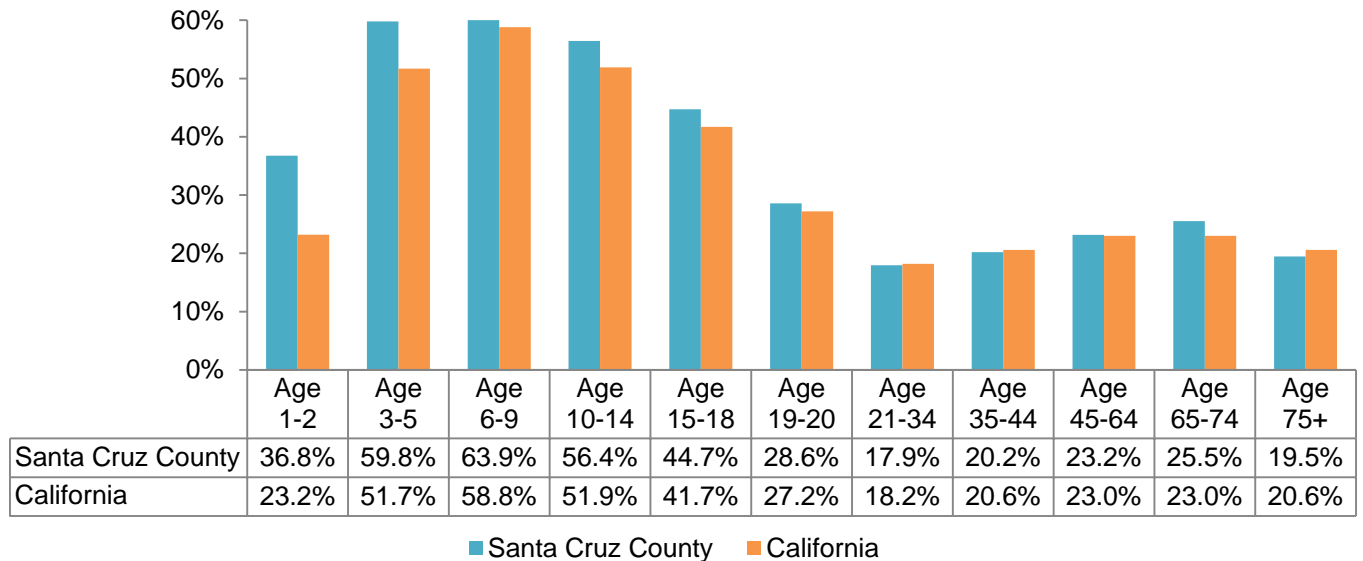
**Figure 10. Denti-Cal Utilization Rates by Type of Provider Utilized by Age Group, 2016**



Source: Medi-Cal Dental Division,

As Figure 11 indicates, in 2016 Santa Cruz County children and adults had more favorable Denti-Cal utilization rates than California rates at every age group except for individuals age 75 and older.

**Figure 11. Denti-Cal Utilization Rate, Santa Cruz County Compared to Statewide, 2016**



Source: DHCS Medi-Cal Dental Division.

## Denti-Cal Utilization by Zip Code

Table 4 shows a summary of the Denti-Cal utilization rates by selected zip code for children (age 0-20) and adults (age 21+) in Santa Cruz County, sorted by highest utilization rates. The ranking did not change between the 2014 and 2015 assessments.

**Table 4. Denti-Cal Beneficiaries and Utilization, Selected Santa Cruz Zip Codes, 2016<sup>1</sup>**

Zip Code	Children			Zip Code	Adults		
	Beneficiaries	Total Users	% Utilization		Beneficiaries	Total Users	% Utilization
95073 & 95076	21,330	10,980	51.5%	95062	6,117	1,066	17.4%
95062	3,895	1,650	42.4%	95073 & 95076	18,865	3,227	17.1%
950 (all others)	7,589	2,959	39.0%	950 (all others)	9,672	1,529	15.8%
95060	3,544	1,328	37.5%	95060	7,192	1,054	14.7%
95065 & 95066	1,621	514	31.7%	95065 & 95066	2,242	302	13.5%
951-988	431	101	23.4%				

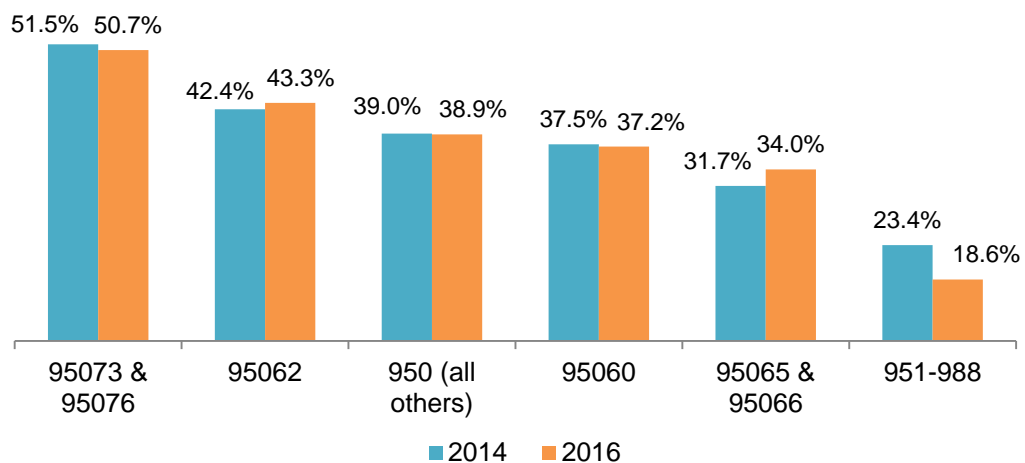
Source: DHCS Medi-Cal Dental Division, April 11, 2018.

<sup>1</sup>Zip codes are in rank order by age group for each county. Three-digit zip codes indicates where DHCS suppressed data. The "all others" next to the 3-digit zip code indicates that all other zip codes with those beginning with 3 digits are included in that data set. This differentiates it from the more specific zip codes.

Note: the data for all tables were pulled by the beneficiary's county of residence. The data were not based on place of service or claims data.

Children's utilization remained relatively consistent from 2014 to 2016 in all of the zip codes examined except the 951- and 988- areas, where there was about a 20% drop between the two periods (Figure 12).

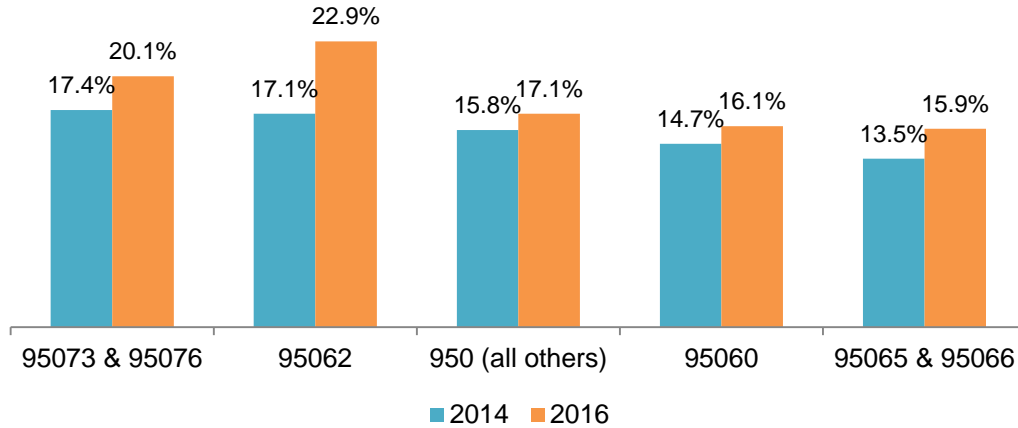
**Figure 12. Utilization of Children age 0-20 by Selected Zip Codes, Santa Cruz County, 2014 and 2016**



Source: DHCS Medi-Cal Dental Division.

Among the adult population, utilization rose in each zip code from 2014 to 2016 with the greatest increase in the zip code 95062 (Figure 13).

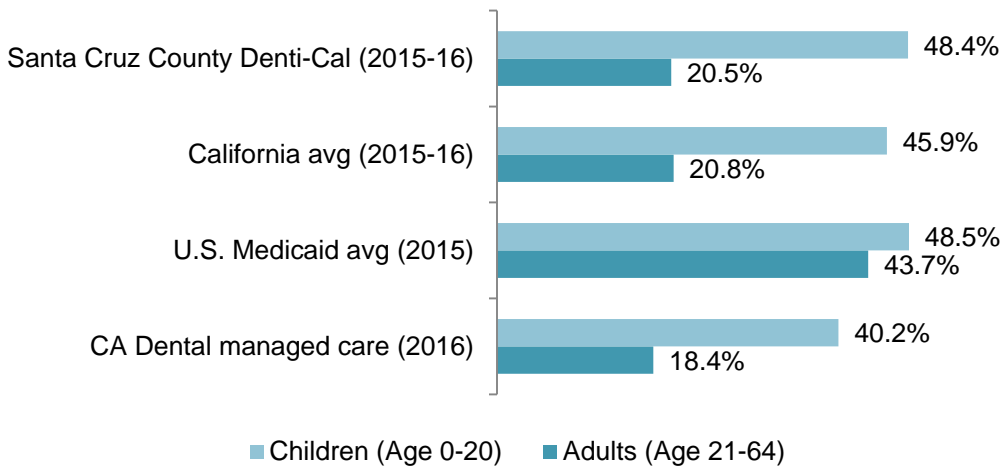
**Figure 13. Utilization of Adults Age 21+ by Selected Zip Codes, Santa Cruz County, 2014 and 2016**



Source: DHCS Medi-Cal Dental Division.

Figure 14 displays dental utilization in the various local, statewide and national programs for children and adults. Although the age ranges for some of these programs differs somewhat, the data provide a picture of the similarity to relatively more favorable comparison, on average, of Santa Cruz County dental utilization with state and U.S. experience. Although California’s Medi-Cal managed care rate is only applicable to the dental *managed care* program, and not the traditional Denti-Cal fee-for-service system used statewide, we show it as another basis of comparison.

**Figure 14. Dental Utilization, Various Populations of Children and Adults**



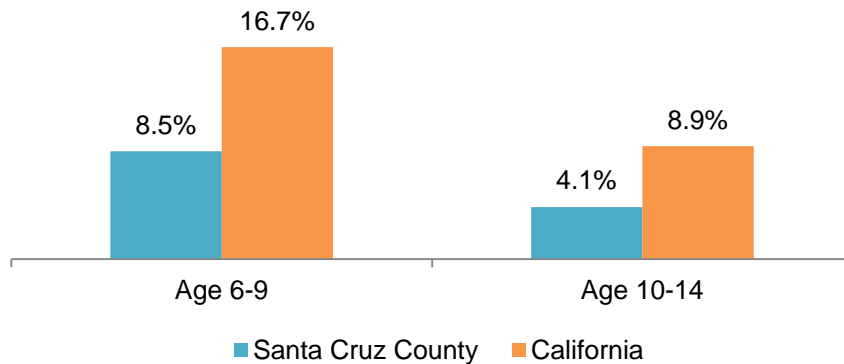
Sources: DHCS Medi-Cal Dental Division; Delta Dental; U.S. Centers for Medicare and Medicaid Services.

### III. OTHER IMPORTANT DENTAL-RELATED ISSUES

#### Use of Sealants

Dental sealants—a thin, plastic coating painted on the chewing surfaces of the back teeth—act as a barrier to help protect teeth from bacteria and acids. In 2015, Santa Cruz County children received significantly fewer sealants than children statewide, putting them at higher risk for tooth decay (Figure 15).<sup>7</sup>

**Figure 15. Children’s’ Use of Dental Sealants, 2015**



Source: Department of Health Care Services Medi-Cal Dental Services Division.

#### Fluoride Varnish

Fluoride varnish is a dental treatment that can help prevent tooth decay or stop it from getting worse by strengthening tooth enamel (the outer coating on teeth). Pediatricians and other primary care providers such as family practice physicians and nurse practitioners are trained to apply fluoride varnish (and can be reimbursed by Medi-Cal for it) because many young children do not see or have access to a dentist until they are older. In Santa Cruz County, the number of children 0-5 with Medi-Cal who received a fluoride varnish treatment from a non-dentist rose from 206 in 2012 to 764 in 2016, possibly reflecting increased efforts to train primary care providers in oral health (Table \_\_).<sup>8</sup> It is not clear why no children older than age 6 were reported.

**Table \_\_. Fluoride Varnish by Non-Dentists, Santa Cruz County**

Age Group	Number of Users	
	2012	2016
Age 0-5	206	764
Age 6+	0	0

Source: DHCS Medi-Cal Dental Division.

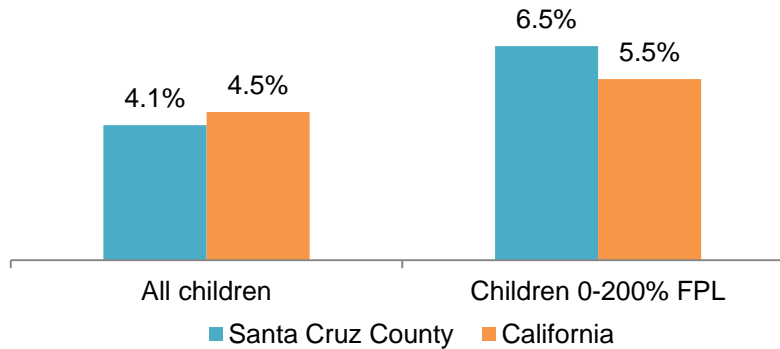
<sup>7</sup> Note: the Denti-Cal data website that shows utilization of sealants by county for 2016 for some reason does not show Santa Cruz County though it does include most other counties; California’s 2016 sealant rates are 17.2% for age 6-9 and 9.2% for age 10-14.

<sup>8</sup> Data by type of primary care provider (for example, pediatricians vs. nurse practitioners) was not available from DHCS.

## Use of a Baby Bottle during Sleep

On average, fewer Santa Cruz County parents report putting their child to sleep with a bottle in the mouth, a practice which can cause serious tooth decay, than parents statewide (Figure 16). A higher percentage of low-income parents, however, report their children taking a nap or being put to bed with a bottle.

**Figure 16. Percent of Parents Who Routinely Use a Bottle for Children Under Age 6 during Sleep or Nap**

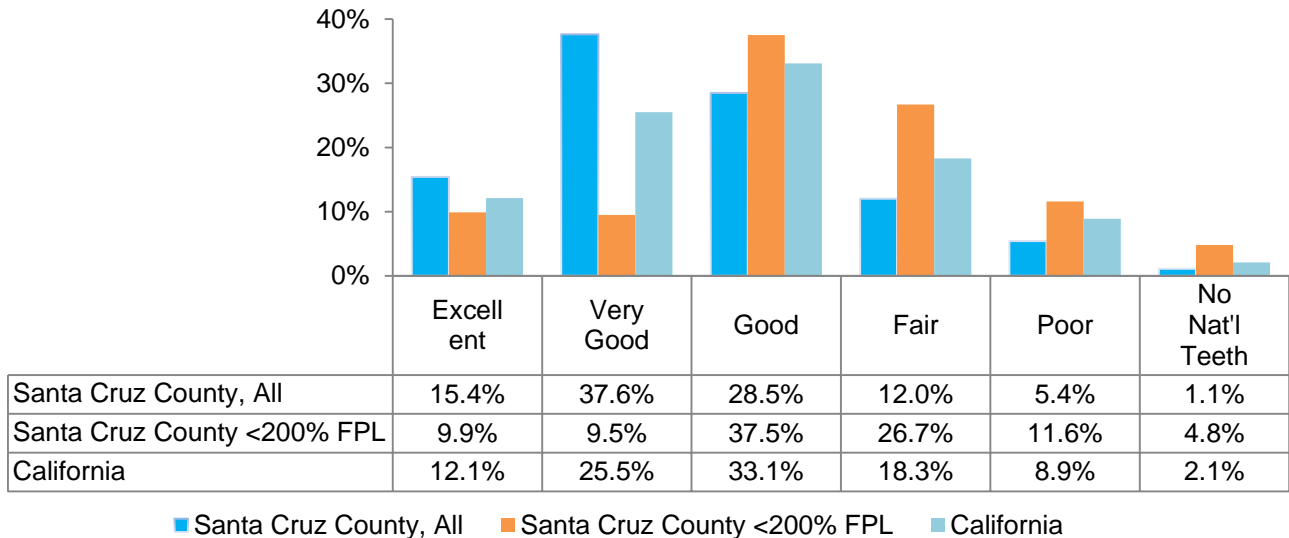


Source: 2016 California Health Interview Survey

## Condition of Adult Teeth

Adults with Medi-Cal report higher rates of average, poor and bad self-perceived oral health status compared to adults with other forms of health insurance.<sup>9</sup> While 15.4% of Santa Cruz County adults overall reported the condition of their teeth in 2016 as excellent and 37.6% as very good, only 9.9% and 9.5%, respectively, of low-income adults were able to report such conditions (Figure 17).

**Figure 17. Adults' Self-Reported Condition of Teeth, 2016**



Source: 2016 California Health Interview Survey

<sup>9</sup> Yarbrough C et al. *Key Differences in Dental Care Seeking Behavior between Medicaid and Non-Medicaid Adults and Children*. American Dental Association. Health Policy Institute Research Brief, September 2014.