Solano County Oral Health Needs Assessment

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SOLANO PUBLIC HEALTH

VIBE SOLANO

Acknowledgments

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Executive Summary

Proposition 56 (Prop. 56), the California Healthcare, Research and Prevention Tobacco Tax Act of 2016, allocated funding for a variety of legislated projects, including dedicated funding for a statewide program to improve the oral health of Californians through local prevention, education, and organized community efforts. A critical initial step is conducting a comprehensive oral health needs assessment to guide planning and action at the local level. Solano County Public Health, Health Promotion & Community Wellness Bureau/VibeSolano commissioned ASR to conduct the needs assessment, which included a focus group and key informant interviews with community stakeholders, an analysis of county and state oral health data, and input and review from the Solano County Oral Health Advisory Committee (SOHAC). The assessment identified the most pressing oral health needs in Solano County. Key findings, summarized below, will inform and guide the development of an action plan to improve oral health outcomes in Solano County.

Key Findings

The greatest oral health needs in Solano County, according to key stakeholders and an analysis of local oral health data, include the following:

Oral Health Education and Public Awareness

Oral health public awareness and education emerged as a primary need in Solano County, according to all 11 key informants and 8 of the 10 focus group participants. There is a lack of awareness among the general population regarding the importance of oral health, the consequences of poor oral health, and the connection between oral health and overall health. Experts said that most people don't think about oral health until they have a painful condition that needs treatment.

Solano County Oral Health Needs

- Oral Health Education and Public Awareness
- Nutrition Education and Access to Healthy Food and Drinks
- Access to Preventive Dental Care
  - Insurance Coverage
  - Supply of Dentists
  - Transportation
  - Cultural and Linguistic Barriers
- System Navigation and Integration
- Community Water Fluoridation

Nutrition Education and Access to Healthy Food and Drinks

According to key informants, many people do not see the connection between nutrition and oral health and would benefit from nutrition education and policies that encourage healthy food and drink choices. However, key informants also noted that many people in Solano County lack access to healthy, fresh food, and are living in what are known as "food deserts" — places where residents are far from a supermarket or large grocery store. According to the US Department of Agriculture, there are 23 low income census tracts in Solano County that are considered food deserts. These tracts, which are concentrated in Vallejo and Fairfield, are home to 21% of the county's population.

Access to Preventive Dental Care

Access to preventive dental care (e.g., cleanings, fluoride varnish, and sealants) was also deemed a high priority need for Solano County by key informants and focus group participants. In fact, only 39% of children and 19% of adults on Denti-Cal had been to the dentist in 2016. There are several barriers to preventive dental care. For example, although nearly all children have insurance, approximately one third of adults do not. In addition, access to dental care is also hindered by the shortage of dental providers, particularly those who see children and those who accept Denti-Cal. Although there are 92 dentists per 100,000 residents in Solano County (i.e., approximately 400 dentists), there is fewer than one dentist per 100,000 residents at Federally Qualified Health Centers (i.e., approximately three FTE dentists) and only 20 Denti-Cal dentists per 100,000 beneficiaries in Solano County who were accepting new patients as of July 2018 (i.e., 24 dentists and clinics).[1] Challenges in access to care are often exacerbated by a lack of transportation. Using public transportation is difficult for populations with mobility issues and can be very time-consuming. Finally, cultural and linguistic barriers to care were cited as an issue for communities of color. Oral health services are not always offered in the patient's primary language and deemed culturally appropriate.

System Navigation and Integration

Needs assessment participants highlighted the need for greater system navigation support for residents to help them understand their insurance benefits and successfully connect them to care. Navigation services might include supported referrals, assistance making appointments and arranging transportation, and follow up calls to ensure patients make their appointments.

Additionally, participants emphasized that service providers from across sectors – dental, medical, mental health, education, and social services – need to work together towards improving oral health in the county and that existing community collaboratives should have oral health on their agenda. Greater coordination between service systems and increased co-location of services can lead to improved service efficiency and the elimination of barriers to care for families.

[1] According to the US Health Resources and Services Administration, a region is considered a "Health Professional Shortage Area" if it has fewer than 20 dentists per 100,000 residents.

Community Water Fluoridation

Finally, key informants discussed the need for community water fluoridation throughout Solano County, citing it as a cost-effective strategy to improve oral health. Currently, the water systems in Dixon, Rio Vista, and Suisun City are not fluoridated, leaving 13% of county residents without fluoridated water.

The remainder of this report provides detailed results from the assessment, including full results from the review of secondary data on key community indicators, qualitative data gathered from key informant interviews and a focus group, data from oral health screenings conducted in the county, and input from the SOHAC.

Introduction

In November 2016, California voters approved the passage of Proposition 56 (Prop. 56), the California Healthcare, Research and Prevention Tobacco Tax Act of 2016. This initiative increased the state cigarette tax by $2 per pack, a portion of which is helping fund a statewide program to improve the oral health of Californians through local prevention, education, and organized community efforts. Each locality involved in the initiative has formed an oral health advisory committee and is conducting a comprehensive oral health needs assessment to guide planning and action to improve the oral health of their community.

In Solano County, the Solano County Public Health, Health Promotion & Community Wellness Bureau/VibeSolano convened key stakeholders from the community to form a Solano County Oral Health Advisory Committee (SOHAC) to guide the development of a community health improvement plan and action plan to address the oral health needs of the county. A key component of the planning process was the implementation of an oral health needs assessment to identify key oral health issues and priorities for the county. The Health Promotion & Community Wellness Bureau commissioned ASR to conduct the Solano County needs assessment, which included a focus group and key informant interviews with community stakeholders, an analysis of county and state oral health data, and input and review from the SOHAC.

Following a description of the methods used in the assessment, this report summarizes the main findings from secondary data on key community indicators of oral health; data collected from oral health screenings conducted in the county with children and pregnant women; and qualitative data gathered on the most pressing oral health needs in the county. The findings will be used to inform the development of a Community Health Improvement Plan (CHIP), an action plan to improve oral health outcomes in Solano County through education, linkages to treatment programs, and place-based policies.

What is oral health?

Oral health refers to the health of the entire mouth, including the teeth, gums, hard and soft palates, linings of the mouth and throat, tongue, lips, salivary glands, chewing muscles, and upper and lower jaws. Good oral health means being free of tooth decay and gum disease, as well as being free of chronic oral pain, oral cancer…and other conditions that affect the mouth and throat. -California Oral Health Plan

Methods

The data in this report come from multiple sources, including a focus group with key stakeholders, key informant interviews, a review of county and state oral health data, and oral health screening data.

Secondary community indicator data were collected from multiple sources, including the California Department of Health Care Services, the California Health Interview Survey, the California Cancer Registry, the California Office of Statewide Health Planning and Development, the California Dental Association, the California Healthy Kids Survey, the California Department of Public Health, Child Start (Napa Solano Head Start), and the Health Resources and Services Administration. The data reflected the status of oral health in the county and the state in the areas of prevention and dental treatment, the oral health of entering kindergarten students, fluoridation, tobacco use, and soda consumption.

In addition to the quantitative data gathered, a focus group was held with 10 key stakeholders from Solano County public agencies (including Solano Public Health and First 5 Solano), community-based dental providers (including La Clinica), and early childhood education agencies (including Child Start and Solano Family and Children's Services). Focus group participants were asked to discuss the most pressing oral health needs in the county, the assets and resources available to address those needs, and gaps in available assets and resources. (See Appendix F for full list of participants.)

Eleven key informant interviews were conducted with representatives from Solano County public agencies (including Health and Social Services, Women, Infants, and Children [WIC], First 5 Solano, and county dental clinics), community-based health agencies (including OLE Health and Solano Coalition for Better Health), and health advocacy organizations (including ChangeLab Solutions and California Pan-Ethnic Health Network). Key informants were also asked to discuss the most pressing oral health needs in the county, with a particular focus on prevention, as well as innovative strategies to prevent oral health problems. Solano-based key informants were asked about the resources in the county available to implement these strategies. (See Appendix F for full list of participants.)

Finally, in the summer and fall of 2018, oral health screening data were gathered by a registered dental hygienist and Solano County Health Education Specialist for children attending summer pre-K academies, third grade students, and pregnant women visiting local WIC offices. The screenings identified residents with oral health problems, including cavities and mouth pain. In addition, data were collected on participants' access to dental care. Although screening data for pre-K academy attendees and pregnant women were not designed to be representative at the county level, the third grade data were based on a sample of 15 schools selected to be representative of the county overall with regards to free and reduced lunch rates and district enrollment. At the time of this report's release, only screening data for Pre-K academies and pregnant women was available; the results of the screenings for third-graders are forthcoming.

Oral Health Community Indicator Data

To help assess the oral health needs of Solano County, secondary data were gathered in five primary areas that are important indicators of oral health: preventive care and treatment, the oral health status of entering kindergartners, community water fluoridation, tobacco use, and nutrition and access to healthy foods. The indicators were selected following a review of the goals and objectives outlined in the California Oral Health Plan 2018-2028[2] and the Local Oral Health Program Logic Model.[3]

The table below summarizes outcomes on these indicators, indicating the direction of trends in Solano County; how the county fares compared to the state overall; the magnitude of the problem (how many people are affected[4]); whether the Healthy People 2020 target[5] has been met; and whether there are racial/ethnic, geographic, or socioeconomic disparities in the county.[6] More detailed data and sources for each indicator can be found in the pages following the table. According to prioritization criteria selected by the Solano County Oral Health Advisory Committee – trends, magnitude, and disparities – the following indicators were flagged because, based on available data, the problem is worsening, the problem affects many people, and/or there are significant disparities (note that for some indicators, valid data were available for only two of the three criteria):

- **Percent of adults without dental insurance (32%),**[7] which is worsening over time and affects many people (disparity data not available)
- **Number of FTE dentists at Federally Qualified Health Centers (fewer than one per 100,000 residents)**,[8] which is worsening over time, affects many people, and demonstrates geographic disparities
- **Percent of adults on Denti-Cal who did not have an annual dental visit (81%)**,[9] which has remained low over time, affects many people, and demonstrates racial/ethnic disparities
- **Percent of population not on fluoridated water (13%)**,[10] which affects many people, and demonstrates geographic disparities (trend data not available)

[2] California Department of Public Health. (2018). California Oral Health Plan 2018-2028. Retrieved from: https://www.cdph.ca.gov/Documents/California%20Oral%20Health%20Plan%202018%20FINAL%201%205%202018.pdf

[3] California Department of Public Health. (2017). Local oral health program logic model. Retrieved from: https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDCB/CDPH%20Document%20Library/Oral%20Health%20Program/Appendix%204%20-%20LOHP%20Logic%20Model%208-23-17_ADA.pdf

[4] "Many" indicates the problem affects more than 50,000 people; "some" indicates the problem affects 10,000-50,000 people; "few" indicates the problem affects fewer than 10,000 people.

[5] Healthy People 2020 targets, developed by the US Office of Disease Prevention and Health Promotion, are research-based benchmarks for improving the nation's health. See https://www.healthypeople.gov/2020/topics-objectives

[6] A dash denotes where reliable data were not available.

[7] Source: California Health Interview Survey.

[8] Source: Office of Statewide Health Planning and Development.

[9] Source: California Department of Health Care Services, Medi-Cal Dental Services Division.

[10] Sources: California Department of Public Health Drinking Water Program; US Census

- **Percent of population living in food deserts (21%)**,[11] which affects many people, and demonstrates geographic disparities (trend data not available)

As illustrated in Figure 1, disparities exist on several oral health indicators in Solano County. These disparities may be explained by the fact that certain populations are disproportionately affected by oral health needs (e.g., access to care), an observation which is described further in the qualitative data section of this report. Key disparities in oral health outcomes for Solano County residents include:

- **African-American/Black and White children are less likely to have had an annual dental visit** than Latino and Asian children (see page 18).
- **African-American/Black residents are also far more likely to visit the emergency room for dental conditions**, perhaps in part due to the disparities in preventive care (see page 22).
- Although geographic disparity data were not available for the above indicators, examining the racial/ethnic and socioeconomic makeup of the county may help identify areas of the county where these issues are most problematic. According to the US Census, **African-American/Black residents and families in poverty are most likely to live in Vallejo, Fairfield, and Suisun City** (see Appendices D and E for maps).
- **There is a shortage of dentists accepting Denti-Cal** relative to the number of dentists in the county overall. As of July 2018, **there are no Denti-Cal dentists in Rio Vista or Dixon** who are taking new patients (see page 16).
- **Suisun City, Rio Vista, and Dixon do not have fluoridated public water systems** (see page 27)**.**
- Although there are minimal ethnic disparities in the prevalence of cigarette smoking, **White and Latino adolescents are more likely to use e-cigarettes** than youth of other racial/ethnic groups (see page 30).
- Food deserts, where residents have limited access to grocery stores, are concentrated in **Vallejo and Fairfield** (see Appendix C for map).

[11] Source: US Department of Agriculture.

Figure 1. Solano County Oral Health Community Indicators

Indicator	Most Recent Year	Trends	Magnitude (Number Affected)	Compared to CA	HP 2020 Target Met?	Disparities [(Racial/Ethnic, Geo, or Socio Economic Status (SES)]
Preventive Care and Treatment						
Percent of children with dental insurance	99%	-	Few	Better	Yes	-
Percent of adults with dental insurance	68%	↓	Many	Better	Yes	-
Number of dentists	92 per 100K	↑	Many	Better	-	SES Denti-Cal: 20 / 100K
Number of FTE dentists at Federally Qualified Health Centers	.65 per 100K	↓	Many	Worse	-	Geographic Only in Fairfield, Vacaville, Vallejo
Percent of children on Denti-Cal who had an annual dental visit	39%	↔	Some	Worse	-	Racial/Ethnic White: 32% Latino: 48% Black: 35% Asian: 40%
Percent of adults on Denti-Cal who had an annual dental visit	19%	↔	Many	Same	-	No
Percent of Head Start children who had a dental exam	83%	↔	Few	Same	-	Geographic Fairfield: 85% Vacaville: 92% Vallejo: 81% *Sample too small in other cities*
Percent of Head Start children who needed treatment	26%	↑	Few	Same	-	Geographic Fairfield: 31% Vacaville: 32% Vallejo: 23% *Sample too small in other cities*

Indicator	Most Recent Year	Trends	Magnitude (Number Affected)	Compared to CA	HP 2020 Target Met?	Disparities [(Racial/Ethnic, Geo, or Socio Economic Status (SES)]
Percent of Head Start children who received needed treatment	68%	↔	Few	Worse	-	Geographic Fairfield: 72% Vacaville: 63% Vallejo: 72%
Percent of pregnant women who had a dental visit	48%	-	Few	Better	-	Racial/Ethnic White: 51% Latino: 45% Black: 43% Asian: 50%
Percent of children aged 6-9 on Denti-Cal who had sealants on a molar	14%	↔	Some	Same	No	No
Rate of Emergency Department (ED) visits for dental emergency	616 per 100K	↑	Few	Worse	-	Racial/Ethnic White: 588 / 100K Latino: 431 / 100K Black: 1594 / 100K Asian: 134 / 100K
Incidence rate of oral and pharyngeal cancer	7.2 per 100K	↓	Few	Better	-	Racial/Ethnic White: 10.5 / 100K Latino: 6.1 / 100K Black: 10.5 / 100K Asian: 7.3 / 100K
Kindergarten Oral Health						
Percent of kindergarten students who returned the Oral Health Assessment	48%	↑	Few	Better	-	Geographic Benicia: 75% Dixon: 57% Fairfield-Suisun: 14% Travis: 5% Vacaville: 51% Vallejo: 100%

Indicator	Most Recent Year	Trends	Magnitude (Number Affected)	Compared to CA	HP 2020 Target Met?	Disparities [(Racial/Ethnic, Geo, or Socio Economic Status (SES)]
Percent of kindergarten students with an Oral Health Assessment with untreated decay	15%	↓	Few	Better	Yes	**Geographic** Benicia: 15% Dixon: 17% Fairfield-Suisun: 30% Travis: *sample too small* Vacaville: 21% Vallejo: 9%
Community Water Fluoridation						
Percent of population on fluoridated water	87%	-	Many	Better	Yes	**Geographic** Only in Benicia, Fairfield, Vacaville, Vallejo
Tobacco Use						
Percent of adults who smoke	12%	↔	Some	Same	Yes	-
Percent of adolescents who smoke	2-4%	-	Few	Better	Yes	No
Percent of adolescents who use e-cigarettes	6-15%	-	Few	Same	-	**Racial/Ethnic** White: 11% Latino: 14% Black: 8% Asian: 9%
Nutrition and Access to Healthy Foods						
Adult soda consumption 7+ times/week	13%	↔	Some	Same	-	-
Percent of population living in a food desert	21%	-	Many	Better	-	**Geographic** All but 2 food deserts are in Vallejo and Fairfield

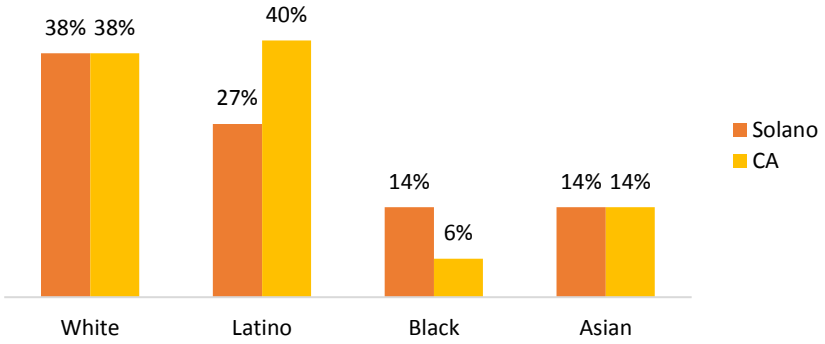
Solano County Demographic Snapshot

To provide context for the Solano County oral health community indicator data on the following pages, below is a demographic snapshot of Solano County.

According to the California Department of Finance population projections, there were 437,309 people living in Solano County in 2017.[12] Of these residents, 23% (100,927) were children under 18.

In 2017, close to 4 in 10 residents in Solano County were white, 27% were Hispanic/Latino, 14% were African-American/Black, and 14% were Asian. Compared to the rest of California, Solano County has a smaller proportion of Hispanic/Latino residents and a larger proportion of African-American/Black residents.

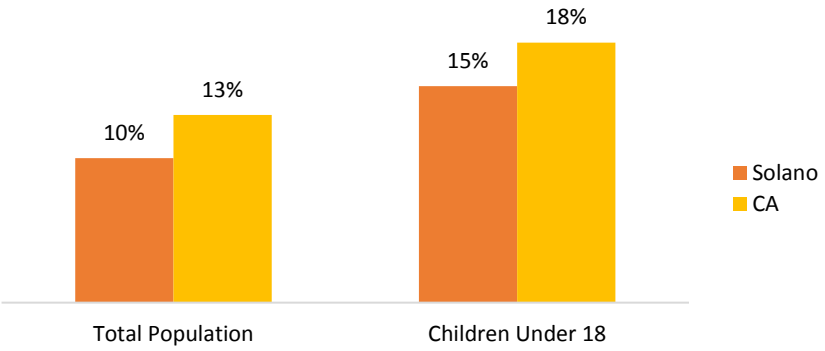
Figure 2. Race/Ethnicity of Population, 2017



Source: California Department of Finance. Note: Solano N = 437,309; California N = 39,613,019.

Approximately 10% of the total population in Solano County was in poverty in 2017, just under the poverty rate for the state overall (13%). In addition, 15% of children in the county were in poverty, compared to 18% of children statewide.

Figure 3. Percent of Population in Poverty, 2017



Source: US Census Bureau, 2017 American Community Survey 1-Year Estimates.

[12] Data available from http://www.dof.ca.gov/Forecasting/Demographics/Projections/

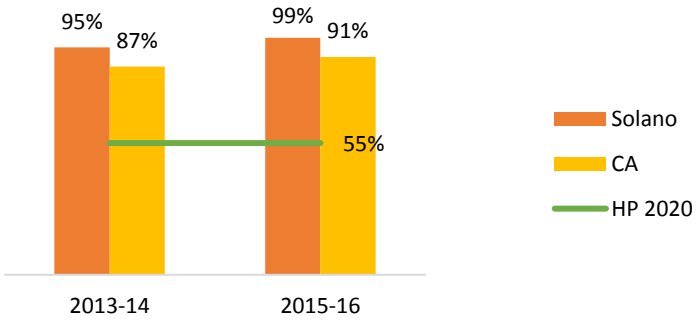
Preventive Care and Treatment

The data in this section cover a range of indicators related to preventive dental care and treatment for Solano County and California overall, including the percent of residents with dental insurance, the supply of dentists, the percent of residents who received an annual dental exams, the percent of children who received sealants, the rate at which residents utilize the emergency department for non-traumatic dental concerns, and the incidence rate of oral and pharyngeal cancer.

Dental Insurance

One of the first steps in accessing preventive dental care and dental treatment is having dental insurance. Nearly all children under 18 in Solano County have dental insurance, and the rate is slightly higher in Solano County than in the state overall (99% and 91%, respectively). The county is also meeting the Healthy People 2020 target of increasing dental insurance coverage to 55% of the population.

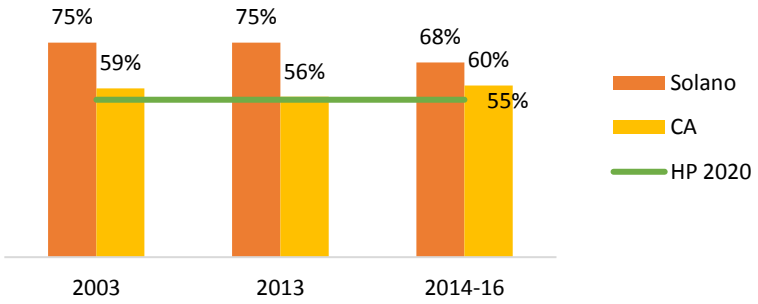
Figure 4. Percent of Children (Ages 0-17) with Dental Insurance



Source: California Health Interview Survey (CHIS).

In contrast, only 68% of adults in Solano County have dental insurance, a rate that is somewhat lower than it was in 2013 and 2003 (data from intervening years were not available). Nevertheless, the county is meeting the Healthy People 2020 target and a higher proportion of adults in the county have dental insurance compared to the state.

Figure 5. Percent of Adults (Ages 18+) with Dental Insurance

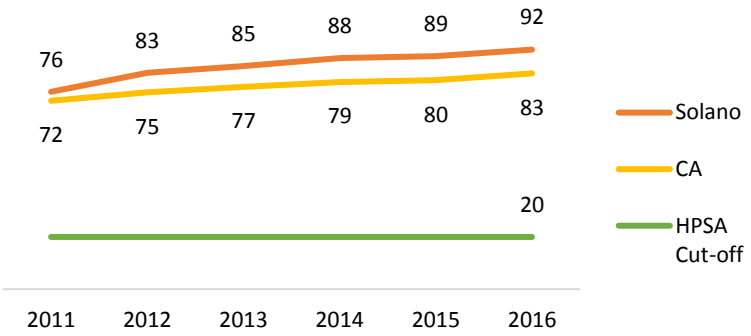


Source: California Health Interview Survey (CHIS). Note: Data were not available for 2004-2012.

Supply of Dentists

Having insurance is not always enough to ensure access to care; among other prerequisites, accessing care also depends on the availability of providers in locations where care is needed.[13] The supply of dentists in Solano County relative to the population is higher than in the state overall and has increased in recent years. The number of dentists in Solano County (approximately 400 dentists, or 92 per 100,000 residents) is well above the minimum standard of 20 per 100,000 residents defined by the US Health Resources and Services Administration, below which a region is considered a "Health Professional Shortage Area" (HPSA).[14]

Figure 6. Number of Dentists per 100,000 Residents



Source: Health Resources & Services Administration, Area Health Resources Files, as cited in Robert Wood Johnson Foundation County Health Rankings.

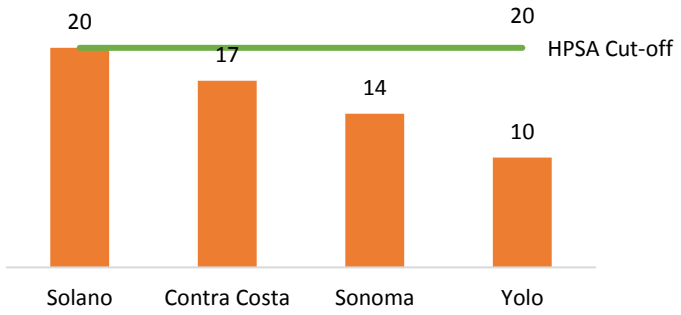
However, most dentists in the county do not accept Denti-Cal. While there are 92 dentists for every 100,000 residents in Solano County, there are only 20 dentists per 100,000 Denti-Cal enrollees who are currently accepting new Denti-Cal patients, a rate that just meets the HPSA cut-off. As of July 2018, there are 20 general dental practitioners in the county accepting new Denti-Cal patients – one in Benicia, four in Fairfield, seven in Vacaville, and eight in Vallejo (see Appendix B for map). It should also be noted that only three of these practitioners are pediatric dentists, with one each in Fairfield, Vacaville, and Vallejo. In addition, there are five Federally Qualified Health Centers (FQHCs) sites providing dental services – two in Fairfield, one in Vacaville, and two in Vallejo. This leaves residents of Rio Vista and Dixon without a dentist accepting new Denti-Cal patients (although a mobile dental clinic visits one location in Rio Vista and one location in Dixon).

Although trend data are not available, the supply of Denti-Cal dentists in Solano County can be compared to neighboring counties. As shown below, the supply of Denti-Cal dentists who were accepting new patients in July 2018, relative to the number of Denti-Cal recipients in Solano County, is actually higher than that of Contra Costa, Sonoma, and Yolo counties.

[13] Guay, A. H. (2004). Access to dental care: Solving the problem for underserved populations. *Journal of the American Dental Association, 135*, 1599-1605.

[14] Area may be designated an HPSA if it has fewer than 25 dentists per 100,000 residents if it is considered high need due to other access barriers). See https://data.chhs.ca.gov/dataset/health-professional-shortage-area-dental

Figure 7. Number of Denti-Cal Dentists and Clinics Accepting New Patients per 100,000 Enrollees, July 2018



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

While the number of FTE dentists at Federally Qualified Health Centers (FQHCs) in California has steadily increased between 2013 and 2016, these numbers have fluctuated and remained consistently low in Solano County during the same period.

Figure 8. Number of FTE Dentists at Federally Qualified Health Centers, per 100,000 Residents

Year	Solano County	California
2013	1.12	1.49
2014	0.59	1.66
2015	0.76	1.84
2016	0.65	2.05

Source: Office of Statewide Health Planning and Development. Note: FTE dentists at Federally Qualified Health Centers in Solano County: 4.7 (2013), 2.52 (2014), 3.25 (2015), 2.82 (2016). FTE dentists at Federally Qualified Health Centers in California: 571.99 (2013), 641.78 (2014), 720.63 (2015), 807.61 (2016). Rates per 100,000 residents calculated using California Department of Finance population projections.

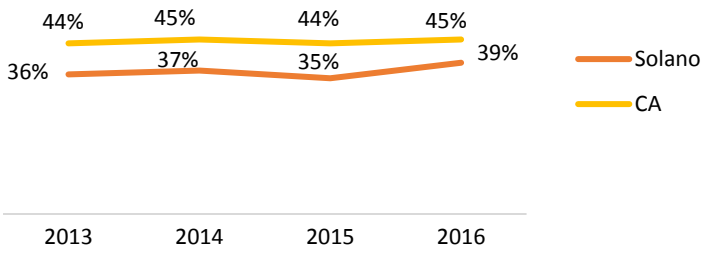
Dental Exams and Treatment

Perhaps in part due to the undersupply of dentists accepting Denti-Cal and serving patients at Federally Qualified Health Centers, a minority of Solano County low income residents had an annual dental visit in 2016. The charts presented in this section illustrate the percent of adults on Denti-Cal, children in the Head Start program, and pregnant women who received dental exams.

The percent of children (ages 0-20) on Denti-Cal in Solano County who had an annual dental visit[15] has, for the most part, remained relatively consistent from 2013-2016. Statewide rates, while higher than Solano County, have also remained stable across this time period.

[15] Defined as at least one dental visit during the measurement period.

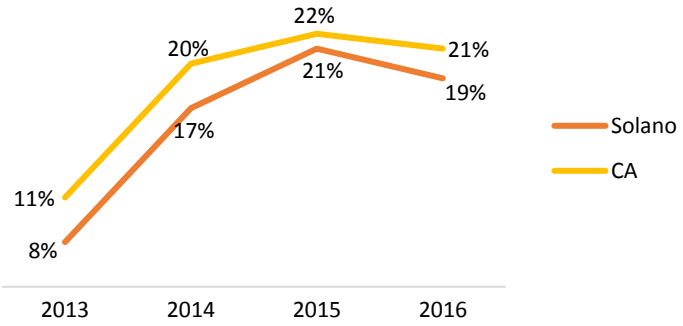
Figure 9. Percent of Children (Ages 0-20) on Denti-Cal Who Had an Annual Dental Visit



Source: CA Department of Health Care Services, Medi-Cal Dental Services Division. Note: Solano 2013 (N = 45,281), 2014 (N = 49,535), 2015 (N = 50,891), 2016 (N = 55,977). California 2013-2016 (N = N/A).

Between 2013 and 2016, the percent of adults (ages 21+) on Denti-Cal in Solano County who had an annual dental visit has remained just under the rate for the state of California. The rate in both the county and state increased between 2013 and 2015, followed by a slight decrease between 2015 and 2016.

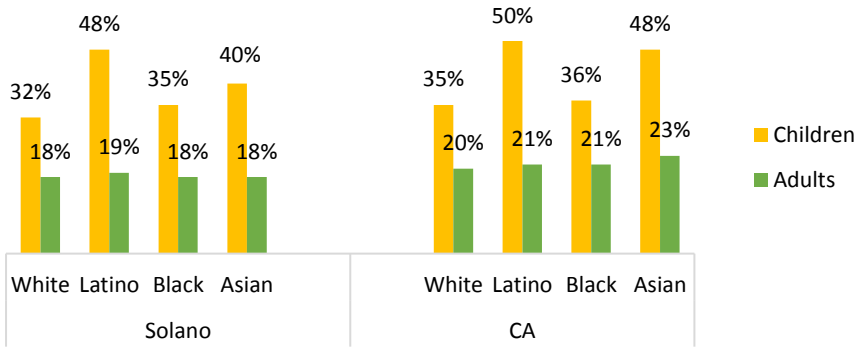
Figure 10. Percent of Adults (Ages 21+) on Denti-Cal Who Had an Annual Dental Visit



Source: CA Department of Health Care Services, Medi-Cal Dental Services Division. Note: Solano 2013 (N = 34,962), 2014 (N = 58,111), 2015 (N = 69,927), 2016 (N = 75,895). California Adults 2013-2016 (N = N/A).

In 2016, 18-19% of adults (ages 21+) of all races/ethnicities in Solano County on Denti-Cal had an annual dental visit. Racial/ethnic disparities were evident among Solano County children (ages 0-20), with 48% of Latino children and 40% of Asian children having an annual dental visit in 2016, compared to 35% of Black children and 32% of White children.

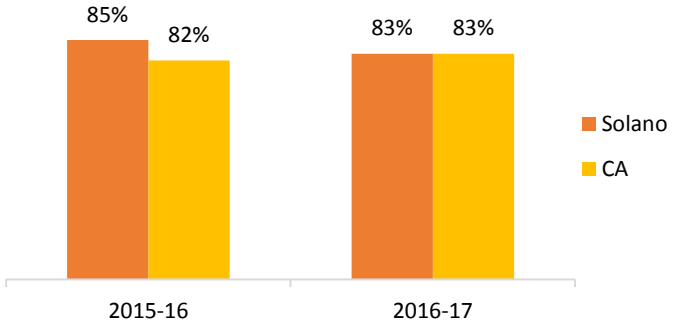
Figure 11. Percent of Denti-Cal Enrollees Who Had an Annual Dental Visit in 2016, by Race/Ethnicity



Source: CA Department of Health Care Services, Medi-Cal Dental Services Division. Note: Solano Children White (N = 8712), Hispanic/Latino (N = 19,131), Black (N = 9,780), Asian (N = 1,356). Solano Adults White (N = 20,408), Hispanic/Latino (N = 13,645), Black (N = 16,018), Asian (N = 2,832). California Children (N = N/A). California Adults (N = N/A).

Data on children's access to dental care and treatment are collected for children enrolled in Head Start preschool.[16] As shown below, approximately 83% of Head Start children in Solano County had received a dental exam in 2016-17, a rate that was relatively unchanged from the year before and similar to the rate statewide.

Figure 12. Percent of Head Start Children Who Had a Dental Exam

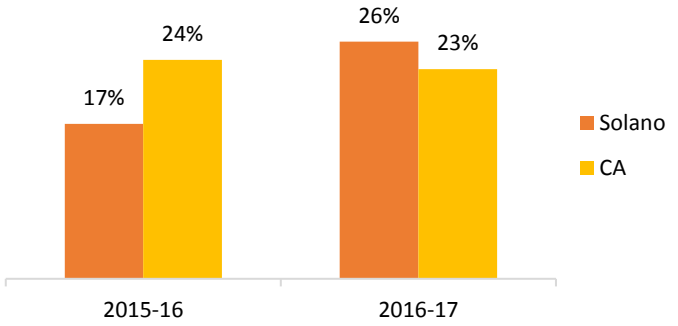


Sources: Child Start (Napa Solano Head Start); US Department of Health and Human Services, Head Start Early Childhood Learning and Knowledge Center. Note: Data for 2014-15 not available; Solano County 2015-2016 (N = 602), 2016-2017 (N = 524).

In the most recent year (2016-17), the percent of Head Start children in Solano County who needed treatment increased to 26%, a rate that was slightly higher than that of Head Start children in the state overall.

[16] Although not reflected in the data presented in this section, Child Start (Napa Solano Head Start) provides children to fluoride varnishes per year.

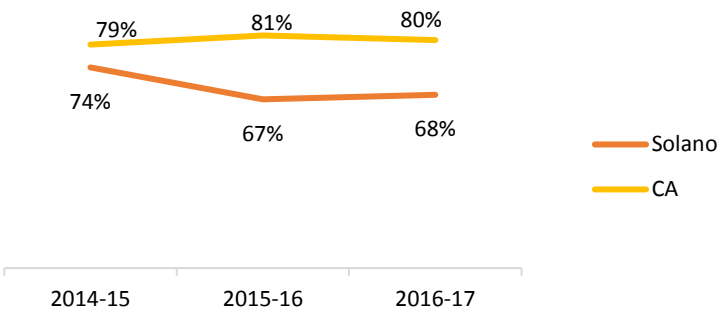
Figure 13. Percent of Head Start Children Who Needed Treatment



Sources: Child Start (Napa Solano Head Start); US Department of Health and Human Services, Head Start Early Childhood Learning and Knowledge Center. Note: Data for 2014-15 not available; Solano County 2015-2016 (N = 602), 2016-2017 (N = 524).

The percent of children in Solano County attending Head Start who received needed dental treatment has declined, from nearly three-quarters in 2014-15 to just over two-thirds in 2016-17, and is lower than the percent of Head Start children in California who received needed treatment.

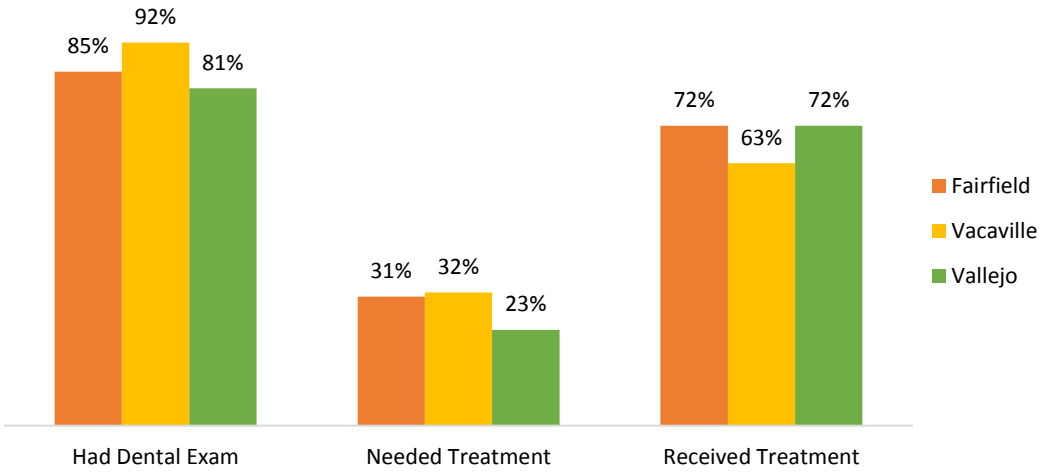
Figure 14. Percent of Head Start Children Who Received Needed Treatment



Sources: Child Start (Napa Solano Head Start); US Department of Health and Human Services, Head Start Early Childhood Learning and Knowledge Center. Note: Solano County 2014-2015 (N = 125), 2015-2016 (N = 105), 2016-2017 (N = 137).

As illustrated in the chart below, there are some geographic disparities in dental outcomes among Solano County's Head Start children. Children in Vacaville Head Start centers were more likely to have visited the dentist in the last year than children in Fairfield and Vallejo centers. Although there were some geographic differences in the percent of children who needed treatment and who received needed treatment, these differences were not statistically significant.

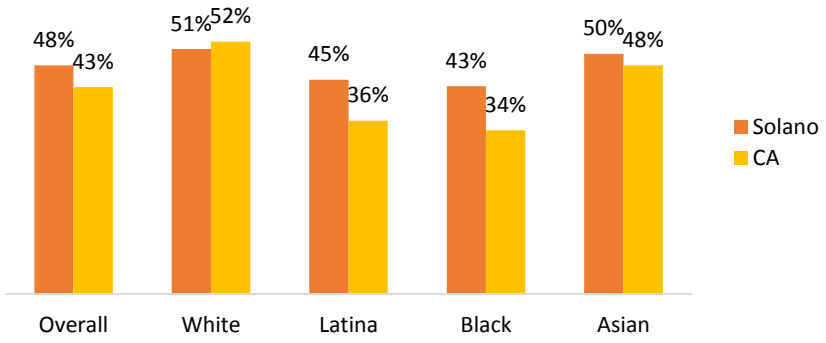
Figure 15. Dental Outcomes among Solano County Head Start Children, 2016-17, by City



Source: Child Start (Napa Solano Head Start). Note: Suisun City and Travis AFB not shown due to small sample size. Had dental Exam and Needed Treatment: Fairfield (N = 151), Vacaville (N = 144), Vallejo (N = 157); Received Treatment: Fairfield (N = 47), Vacaville (N = 46), Vallejo (N = 26).

In 2015-16, the overall percent of pregnant women who visited the dentist was slightly higher in Solano County (48%) compared to the state of California (43%). In terms of racial/ethnic differences, a higher percentage of White and Asian women in Solano County visited the dentist while pregnant compared to Black and Latina women, though these disparities in the county were not as great as in the state overall.

Figure 16. Percent of Pregnant Woman Who Had a Dental Visit, 2015-16, Overall and by Race/Ethnicity

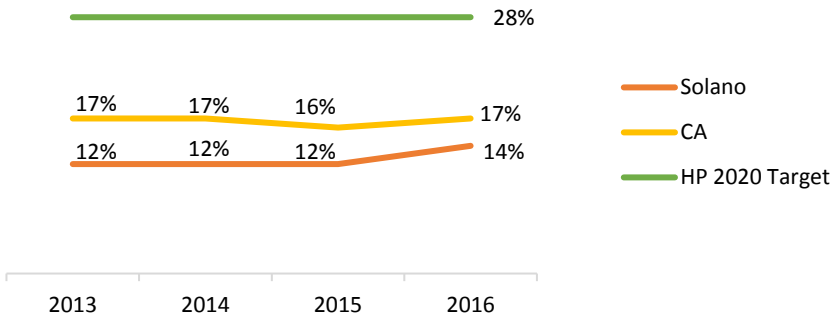


Source: CA Department of Public Health, Maternal and Infant Health Assessment (MIHA) Survey.

Sealants

The percent of children (ages 6-9) on Denti-Cal in Solano County who received sealants on a molar has remained relatively unchanged between 2013 and 2016 and has been similar to the overall statewide rate. Both the county and state rates are well below the Healthy People 2020 target of 28 percent.

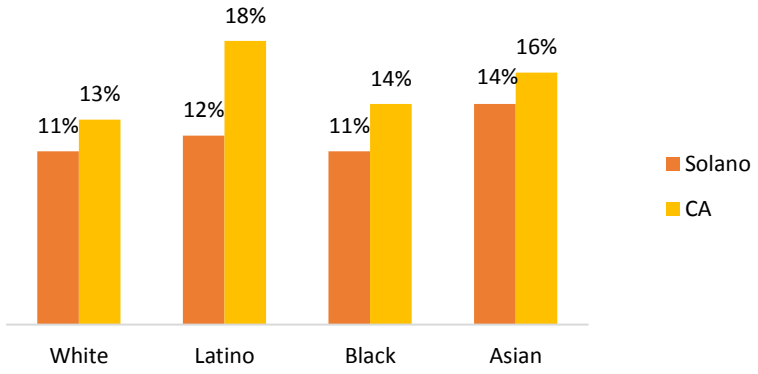
Figure 17. Percent of Children (Ages 6-9) on Denti-Cal Who Had Sealants on a Molar



Source: CA Department of Health Care Services, Medi-Cal Dental Services Division. Note: Solano 2012 (N = 9,746), 2014 (N = 10,691), 2015 (N = 11,516), 2016 (N = 11,882). California 2012-2016 (N = N/A).

There were minimal racial/ethnic differences observed in the percent of children on Denti-Cal in Solano County who had a sealant. In contrast, in the state overall, Latino and Asian children were more likely to have a sealant than White and Black children.

Figure 18. Percent of Children Ages 6-9 on Denti-Cal Who Had Sealants on a Molar in 2015, by Race/Ethnicity

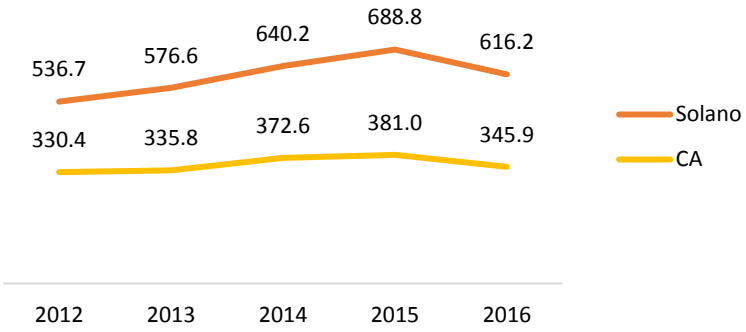


Source: CA Department of Health Care Services, Medi-Cal Dental Services Division. Note: Valid data for 2016 not available. Solano White (N = 2,179), Latino (N = 4,497), Black (N = 2,403), Asian (N = 234). California (N = N/A).

Emergency Department Visits

The rate of emergency department (ED) visits related to non-traumatic dental conditions (NTDC) between 2012 and 2016 has been higher in Solano County compared to the state of California, but has also remained relatively unchanged over this time period.

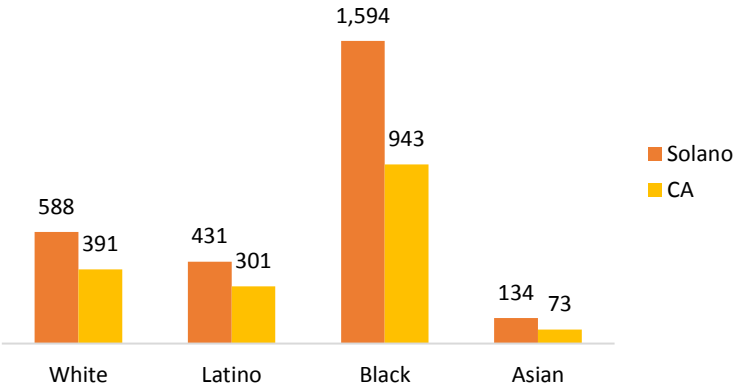
Figure 19. Rate of NTDC-Related ED Visits, Per 100,000 Residents



Source: Office of Statewide Health Planning and Development. Note: NTDCs range from caries, periodontal disease, erosion, cysts, impacted teeth, and all other non-traumatic conditions in the mouth. Damage to the mouth that is deemed to be due to trauma is excluded from this list.

The rate of NTDC-related ED visits during 2012-16 was highest among Black residents of Solano County and lowest among Asian residents. This pattern of racial/ethnic disparities is similar to that found in the state overall.

Figure 20. Rate of NTDC Related ED Visits, Per 100,000 Residents, 2012-16, by Race/Ethnicity

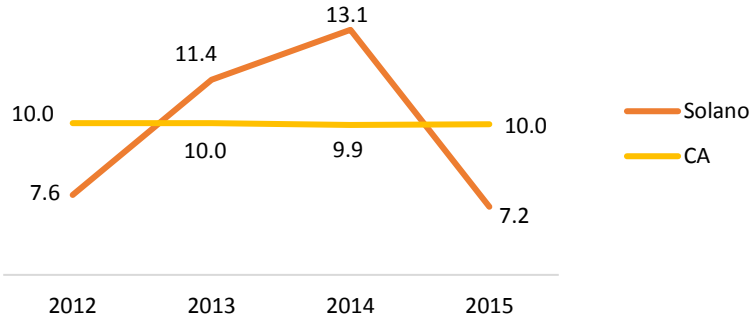


Source: Office of Statewide Health Planning and Development.

Oral and Pharyngeal Cancer

While rates of oral and pharyngeal cancer incidence remained largely the same in California between 2012 and 2015, there was a sharp increase in Solano County between 2012 and 2014, followed by a sharp decrease between 2014 and 2015.

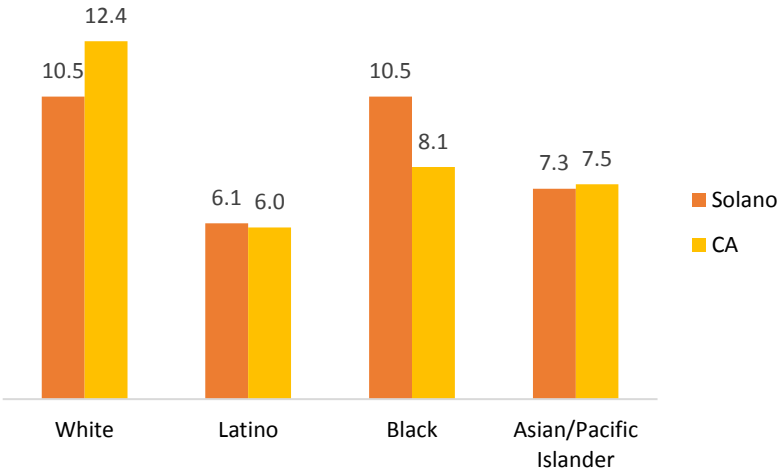
Figure 21. Incidence Rate of Oral and Pharyngeal Cancer, per 100,000 Residents



Source: California Cancer Registry. Note: Solano 2012 (N = 35), 2013 (N = 57), 2014 (N = 62), 2015 (N = 35). California 2012 (N = 3,959), 2013 (N = 4,091), 2014 (N = 4,174), 2015 (N = 4,272).

White residents in Solano County had the highest rate of oral and pharyngeal cancer in 2015, followed by Black and Asian/Pacific Islander residents; Latinos had the lowest rate.

Figure 22. Incidence Rate of Oral and Pharyngeal Cancers, per 100,000 Residents, by Race/Ethnicity, 2011-15



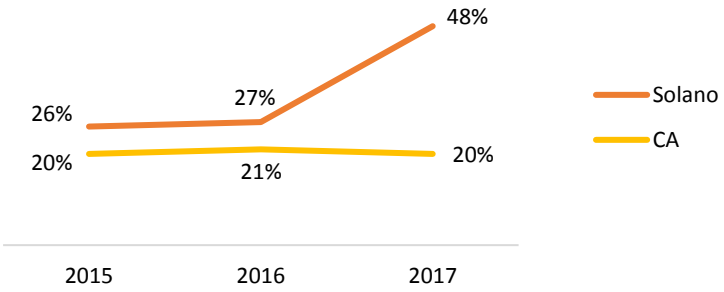
Source: California Cancer Registry. Note: Solano White (N = 149), Hispanic/Latino (N = 15), Black (N = 33), Asian/Pacific Islander (N = 30). California White (N = 13,720), Hispanic/Latino (N = 2,883), Black (N = 994), Asian (N = 2,283). California (N = N/A).

Kindergarten Oral Health

In 2005, California signed AB 1433 into law, requiring a dental checkup for all entering kindergartners. Participating schools collect information from parents on children's unmet oral health needs and report them to the state each year. The data in this section describe the rate at which parents returned this Kindergarten Oral Health Assessment and the degree of unmet oral health needs in Solano County and the state overall.

Between 2015 and 2017, a greater proportion of Solano County children returned the Kindergarten Oral Health Assessment compared to children statewide. In addition, the percent who participated in Solano County increased significantly in 2017 (from 27% in 2016 to 48% in 2017).

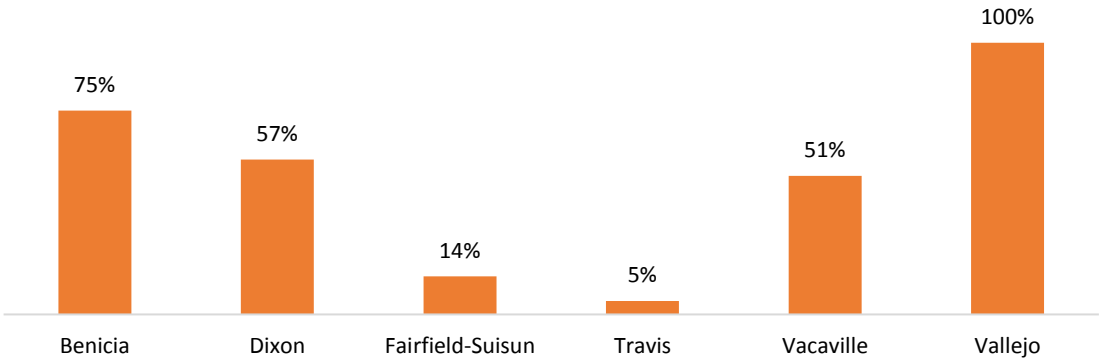
Figure 23. Percent of Students Who Returned the Oral Health Assessment



Source: California Dental Association. Note: Solano 2015 (N = 5,095), 2016 (N = 5,462), 2017 (N = 4,235). California 2015-2017 (N = N/A).

There are geographic disparities in the percent of students who returned the Oral Health Assessment in Solano County. Benicia, Dixon, and Vallejo Unified School Districts (USDs) had the highest rate of students who returned the Oral Health Assessment in the county, while Vacaville, Fairfield-Suisun, and Travis USDs had the lowest rates.[17]

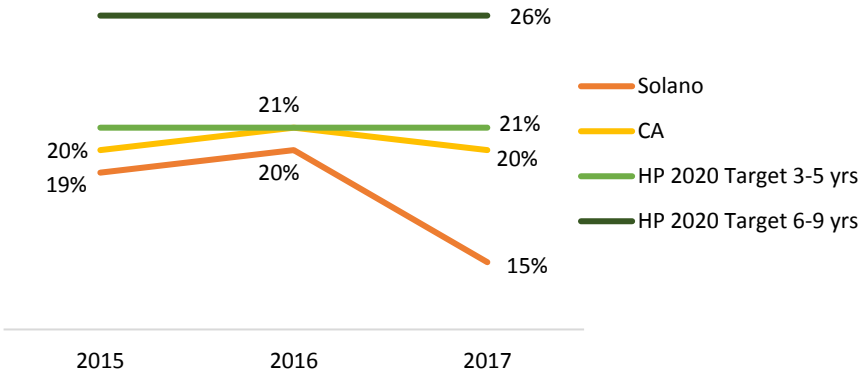
Figure 24. Percent of Students Who Returned the Oral Health Assessment in Solano County, 2017, by School District



Source: California Dental Association. Note: Benicia (N = 314), Dixon (N = 210), Fairfield-Suisun (N = 1,503), Travis (N = 384), Vacaville (N = 772), Vallejo (N = 1,052).

The percent of Solano County kindergarten students with an Oral Health Assessment who had untreated decay has remained just under the statewide rate and declined from 20% in 2016 to 15% in 2017. The county is also meeting the Healthy People 2020 target of having no more than 21% of children ages 3-5 and 26% of children ages 6-9 with untreated decay.

Figure 25. Percent of Kindergarteners with an Oral Health Assessment Who Had Untreated Decay

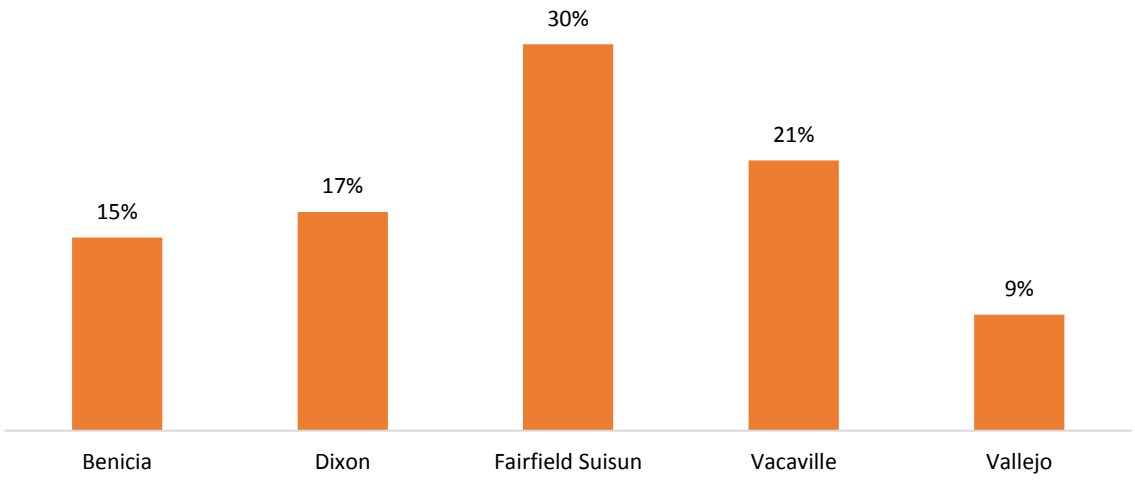


[17] Data for Rio Vista not available. The elementary school in Rio Vista, D. H. White Elementary, is in the Sacramento County River Delta School District.

Source: California Dental Association. Note: Solano 2015 (N = 5,095), 2016 (N = 5,462), 2017 (N = 4,235). California 2015-2017 (N = N/A).

Compared to other school districts in Solano County, Fairfield-Suisun USD had the highest rate of kindergartners with untreated decay, followed by Vacaville, Dixon, and Benicia USDs (however, it should be noted that just 14% of kindergartners in Fairfield-Suisun participated in the assessment). Kindergarteners in Vallejo USD had the lowest rates of untreated decay.

Figure 26. Percent of Students with an Oral Health Assessment Who Had Untreated Decay, 2017, by School District



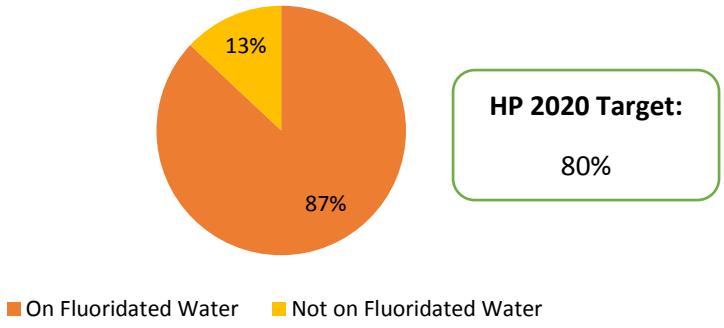
Source: California Dental Association. Note: Travis not shown due to small sample size. Benicia (N = 234), Dixon (N = 119), Fairfield-Suisun (N = 208), Vacaville (N = 397), Vallejo (N = 1,052).

Community Water Fluoridation

According to the Centers for Disease Control and Prevention, public water fluoridation is the most cost-effective way to prevent cavities.[18] However, as described below, not all public water systems are fluoridated.

In 2017, 87% of the population in Solano County lived in cities with fluoridated water, a rate that is higher than the state overall (64%) and meets the Healthy People 2020 target of 80% of residents having access to fluoridated water. The remaining 13% (approximately 57,952 people, according to the US Census) lived in the three cities that do not have fluoridated water: Dixon, Rio Vista, and Suisun City.

Figure 27. Percent of Solano County Population on Fluoridated Water, 2017



Source: California Department of Public Health Drinking Water Program; U.S. Census

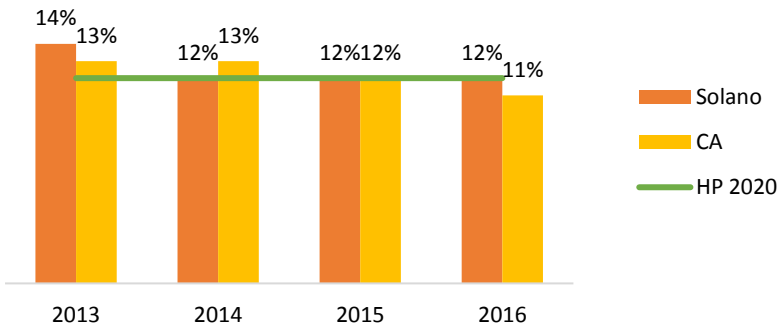
[18] Centers for Disease Control and Prevention. (2016). Working to improve oral health for all Americans: At a glance. Retrieved from: http://www.cdc.gov/chronicdisease/resources/publications/aag/oralhealth.htm

Tobacco Use

Tobacco use is a known risk factor for several oral health conditions, including oral and pharyngeal cancer, periodontal disease, tooth loss, and treatment outcomes.[19] The data in this section describe tobacco use among adolescents and adults in Solano County and in California.

The percent of adults (ages 18+) who smoke in Solano County is similar to the percent in California and has remained relatively unchanged in recent years. As of 2016, the county was meeting the Healthy People 2020 target that no more than 12% of adults smoke.

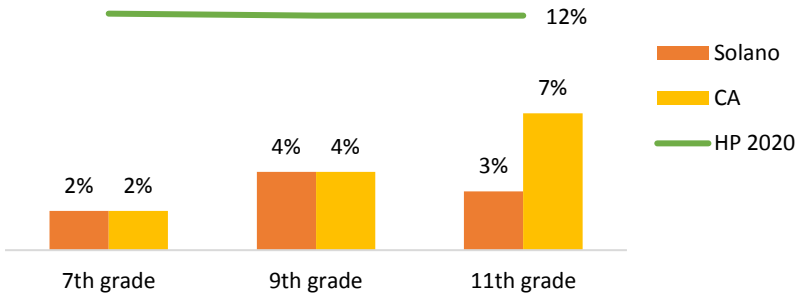
Figure 28. Percent of Adults (Ages 18+) Who Smoke



Source: Behavioral Risk Factor Surveillance System, as cited in Robert Wood Johnson Foundation County Health Rankings.

The percent of 7th and 9th graders in Solano County who smoked cigarettes in the past 30 days was similar to the percent of students in these grades statewide who smoked, but the percent of 11th graders who smoked was lower in Solano County.[20] Across grades, the county and the state are meeting the Healthy People 2020 target of having no more than 12% of adolescents smoking in the last 30 days.

Figure 29. Percent of Adolescents Who Smoked in the Past 30 Days, 2013-15

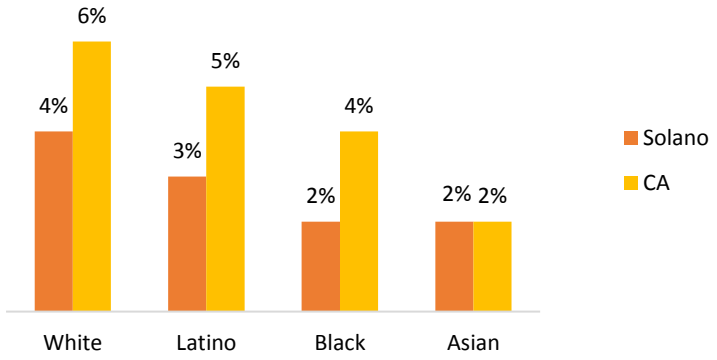


Source: California Healthy Kids Survey, as cited on kidsdata.org.

[19] Winn, D. M. (2001). Tobacco use and oral disease. *Journal of Dental Education, 65*(4), 306-12.
[20] According to the same survey, the California Healthy Kids Survey, no more than 2% of adolescents in Solano County and the state use smokeless tobacco, a rate that has not changed in recent years.

As shown in the chart below, there were minimal racial/ethnic differences in the percent of adolescents in Solano County who smoked in the past 30 days.

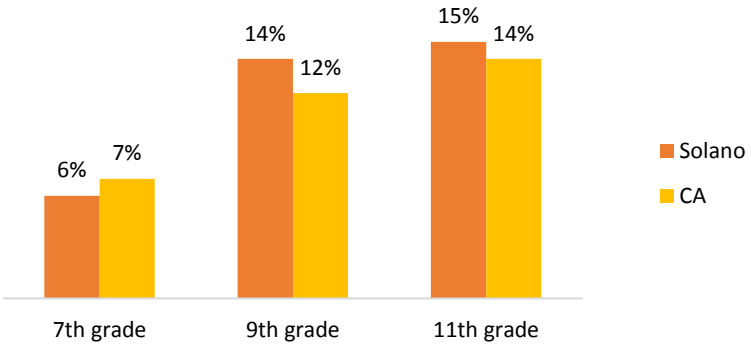
Figure 30. Percent of Adolescents Who Smoked in the Past 30 Days, 2013-15, by Race/Ethnicity



Source: California Healthy Kids Survey, as cited on kidsdata.org.

Although more research on the effects of e-cigarette use on oral health needs to be conducted, some studies suggest that the chemicals in e-cigarettes can be damaging to cells of the mouth.[21] As shown in the chart below, approximately 15% of high school students in Solano County and the state have used e-cigarettes in the past 30 days. This suggests that among Solano County high schoolers, e-cigarette use is approximately four times more common than cigarette use.

Figure 31. Percent of Adolescents Who Used E-Cigarettes in the Past 30 Days, 2013-15

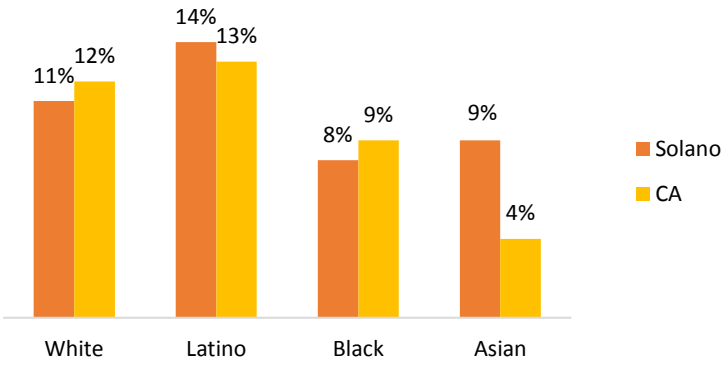


Source: California Healthy Kids Survey, as cited on kidsdata.org.

[21] Javed, F., Kellesarian, S. V., Sundar, I. K., Romanos, G. E., & Rahman, I. (2017). Recent updates on electronic cigarette aerosol and inhaled nicotine effects on periodontal and pulmonary tissues. *Oral Diseases*, *23*(8), 1052-1057; Rouabhia, M., Park, H. J., Semlali, A., Zakrzewski, A., Chmielewski, W., & Chakir, J. (2017). E-cigarette vapor induces an apoptotic response in human gingival epithelial cells through the caspase-3 pathway. *Journal of Cellular Physiology*, *232*(6), 1539-1547.

E-cigarette use was slightly more common among White and Latino students in Solano County than among Black and Asian students.

Figure 32. Percent of Adolescents Who Used E-Cigarettes in the Past 30 Days, 2013-15, by Race/Ethnicity



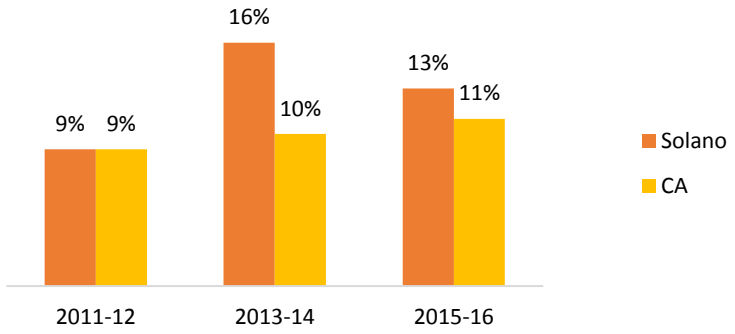
Source: California Healthy Kids Survey, as cited on kidsdata.org.

Nutrition and Access to Healthy Food and Drinks

Consuming soda and other sugar-sweetened beverages can have many potential health problems, including tooth decay and erosion.[22] While the availability of data on soda consumption is limited, the data in this section describe the percent of adults (ages 18+) in Solano County and in California drinking soda on a daily basis.

While the percent of adults who consumed soda at least seven times per week was the same for Solano County as for California in 2011-12, soda consumption was much higher in Solano County in 2013-14 than for California. The rate of soda consumption among adults decreased in the county the following year, but remained slightly higher than the rate of consumption statewide.

Figure 33. Adult (Ages 18+) Soda Consumption 7 or More Times per Week



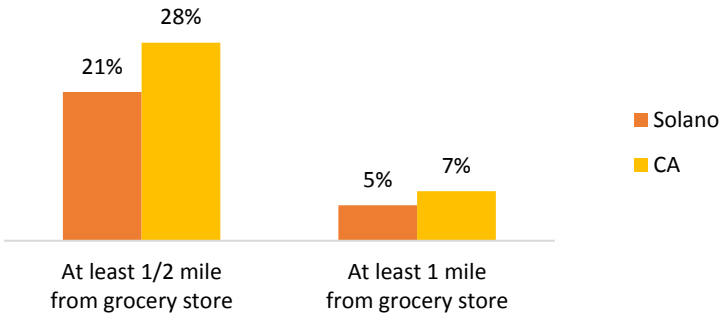
Source: California Health Interview Survey.

Consuming healthy food is more difficult in regions of the county where access to grocery stores is limited. According to the US Department of Agriculture, there are 23 low income census tracts[23] in Solano County that are considered "food deserts," meaning a significant number (at least 500 people) or share (at least 33%) of residents are at least half a mile from the nearest supermarket or large grocery store for an urban area and 10 miles for a rural area. These tracts, which are concentrated in Vallejo and Fairfield (see Appendix C for map), are home to 21% of Solano County's population (or about 93,615 people). Of these, six are tracts where a significant number of people are at least one mile from the nearest grocery store; 5% of the population lives in these census tracts (or about 22,289 people). In contrast, 28% of California's residents live in a food desert where the nearest grocery store is at least half a mile away and 7% live in an area where the nearest grocery store is at least one mile away.

[22] Bassiouny, M. A., & Yang, J. (2005). Influence of drinking patterns of carbonated beverages on dental erosion. *General Dentistry, 53*, 205-210; Marshall, T. A., Levy, S. M., Broffitt, B., Warren, J. J., Eichenberger-Gilmore, J. M., Burns, T. L., & P.J. Stumbo, P. J. (2003). Dental caries and beverage consumption in young children. *Pediatrics, 112*, 184-191.

[23] Defined by the US Department of Agriculture as any tract where the poverty rate is 20% or greater; the median family income is less than or equal to 80% of the statewide median family income; or, in metropolitan areas, the median family income is less than or equal to 80% of the metropolitan area's median family income.

Figure 34. Percent of Population Living in a Food Desert, 2015



Source: US Department of Agriculture.

Qualitative Data

This section summarizes key findings from the qualitative data gathered for the Solano County Oral Health Needs Assessment. Key informant interviews (KIIs) were conducted with 11 participants and a focus group was conducted with 10 participants, all of whom were experts in the areas of health, social services, and policy (see Appendix F for list of participants). Participants in the interviews and focus group were asked to reflect on the most pressing oral health needs in Solano County, with a particular focus on what leads to the onset of oral health problems. For each need identified, participants indicated whether certain populations in the county were disproportionately affected and recommended strategies for addressing the need. The highest priority needs are summarized below. (Data on the frequency with which each theme was mentioned can be found in Appendix G.)

Oral Health Education and Public Awareness

Oral health public awareness and education emerged as a primary need in Solano County, according to all 11 key informants and 8 of the 10 focus group participants. There is a lack of awareness among the general population regarding the importance of oral health and the consequences of poor oral health, as well as the connection between oral health and physical health. Several experts said that most people don't think about oral health until they have a painful condition that needs treatment.

> *"I see people waiting until it's gotten really bad before they go see a dentist, partly because of education and partly because of access to care."* – KII participant

Key informants detailed specific types of information to incorporate into education and public awareness campaigns. They suggested informing the public about the impact of nutrition on oral health and the consequences of poor oral health, as well as sharing information on available oral health services. In particular, key informants recommended teaching pregnant women and young mothers about the importance of caring for their teeth and their child's baby teeth and providing information about when to first take a child to the dentist. Informants also urged the teaching of good oral health prevention practices, such as proper brushing and flossing techniques, and setting good routines and habits with children. Key informants also highlighted the need for education programs that emphasize the link between oral health and overall health and wellbeing, including education and employment outcomes. Finally, key informants stated that by encouraging regular prevention practices, such as biannual checkups, through education and public awareness campaigns, people may begin to realize that most dental visits do not involve expensive or painful treatments. This may help address a related barrier to oral health care cited by several key informants: fear of visiting the dentist.

Populations disproportionately affected: This need affects nearly all residents, but many key informants recommended targeting children and parents.

Recommendations

- ***Provide school-based education:*** Recommendations include making oral health and nutrition an integral part of health education in schools and preschools, teaching about flossing, proper brushing techniques, and the role of nutrition in oral health as part of a school-based or afterschool program. Key informants also said that parents should be provided education and information via materials sent home with students. In addition, it was recommended that

education programs be provided for students of all ages (currently, most programs are provided only to the elementary school population).

> *"Start providing information and education where parents are to make sure there's access to dental education broadly."* – KII participant

- ***Provide education for families:*** Several key informants emphasized that prevention starts in the home—that parents not only need to model good health practices, but teach their children proper oral care, including proper brushing. Oral health education and dental screenings can be integrated into visits to social service agencies, home visits, perinatal groups, and prenatal medical visits as well as at hospitals (around time of birth), well-child visits, and at county dental clinics. Also, key informants mentioned providing parent-friendly educational materials (specifically, First 5 outreach materials were identified as potential models). Key informants and focus group participants suggested the delivery of oral health education may best be conducted by community health workers and cultural or religious leaders who have the trust of the community. Furthermore, education should be provided in a culturally sensitive manner and offered in multiple languages. Attendance may be improved by offering incentives (e.g., free toothbrushes).
- ***Launch public awareness campaigns:*** Public awareness campaigns about the importance of oral health and available resources can be launched through flyers, TV and radio advertisements, signage, and community outreach events. Information and educational resources should be brought to where families congregate, including churches, schools, libraries, safety net providers, doctors' offices, senior centers, markets, laundromats, community centers, family resource centers, the Employment Development Department (EDD), the mobile dental van, migrant centers, and health fairs, as well as through websites and social media.

Nutrition Education and Access to Healthy Food and Drinks

Many people do not see the connection between nutrition and oral health and lack access to healthy food and drink. Although this need was not mentioned by focus group participants, it was highlighted as a pressing need by 7 key informants. Key informants recommended teaching the public about the effects of nutrition on oral health and providing them with the information they need to become better food consumers. For example, pregnant moms and moms with young babies should be taught that breastfeeding is better for the health of the mother and child,[24] but if baby bottles are used, mothers should be instructed to not put juice, tea, or soda in the bottle and to only fill it with water if they allow the baby to sleep with it (likewise, they should be taught to not allow the baby to fall asleep while breastfeeding). Parents are also often unaware of the nutrition contents of the foods they serve their children (e.g., the amount of sugar that is often in what are perceived to be healthy foods like yogurt). Even if they do understand the importance of nutrition, many low income families lack access to healthy, fresh foods, living in what are known as "food deserts," where a significant number or share of residents do not live close to a supermarket or large grocery store. In addition, one key informant discussed the challenges in maintaining a healthy diet for people who have experienced trauma and the need to first address unresolved trauma through mental health care.

[24] American Academy of Pediatrics. (2012). Breastfeeding and the use of human milk. *Pediatrics, 129*(3), e827–e841.

> *"Residents need access to a nutritious diet that will foster good development and not just fermentable carbohydrates that sit on their teeth and cause decay."* – KII participant

Populations disproportionately affected: According to the US Department of Agriculture, there are 23 low income census tracts in Solano County that are considered food deserts, meaning a significant number (at least 500 people) or share (at least 33%) of residents are at least half a mile from the nearest supermarket or large grocery store for an urban area or 10 miles for a rural area. These tracts, which are concentrated in Vallejo and Fairfield, are home to 21% of the county's population (see Appendix C for map). In six of these tracts, where 5% of the population lives, residents are at least one mile from a large grocery store.

Recommendations

- ***Launch public awareness campaigns:*** Public awareness campaigns can be launched about the effects of nutrition on oral health and the nutrition contents of common foods, with messages that encourage people to make healthy choices.
- ***Provide nutrition education at schools and clinics***: Nutrition education can be provided for parents and children at schools and preschools, and child care providers should be educated about nutrition standards mandated by law. Efforts can be made to educate kids about nutrition as they access summer lunch programs. Nutrition education should also be integrated into visits to medical and social service providers and at county dental clinics.
- ***Make healthy foods readily available in the community:*** Conduct weekly giveaways of fruits and vegetables at health clinics, CBOs, and low income housing complexes; collaborate with food pantries and local farmers; expand the availability of farmers markets; invest in carry out corner store conversions; and offer healthy food at schools and preschools.
- ***Implement county-level policies increasing access to and consumption of healthy food and beverages:*** Restrict the advertising and sale of sugar sweetened beverages on government property and on or near school grounds. Eliminate sugar sweetened beverages from kids' meals at restaurants.[25] Prohibit fast food restaurants and mobile food vendors from being near schools. Expand nutritional standards currently in place for public child care and schools to all workplaces, schools, child care programs, and afterschool programs. Modify zoning and tax structures to attract more grocery stores. Require sugar sweetened beverage retailers to obtain a special license. Limit portion sizes for sugar sweetened beverages. Implement a tax on sugar sweetened beverages (although it should be noted that there is currently a moratorium on new sugar sweetened beverage taxes in California).

Access to Preventive Dental Care

Numerous key informants and focus group participants also mentioned access to preventive dental care as a high priority need for Solano County. Preventive care includes annual cleanings and exams as well as fluoride varnish and sealant treatments for children. As described elsewhere in this report, only 39% of children and 19% of adults on Denti-Cal had been to the dentist in 2016.[26] Without preventive dental

[25] California recently passed into law SB 1192, which requires the default beverage choice for kids' meals at restaurants to be milk or water.
[26] California Department of Health Care Services, Medi-Cal Dental Services Division.

care, children and adults are at risk for tooth decay, gum disease, and mouth pain, and older adults may suffer from tooth loss and ill-fitting dentures.

There are several barriers to preventive dental care cited by participants—including limited or no insurance coverage, a lack of providers, transportation challenges, and cultural and linguistic barriers—that disproportionately affect certain populations (e.g., low income families and communities of color).

Insurance Coverage

Limited or no insurance coverage was prioritized by 7 out of 10 focus group participants and discussed by 8 out of 11 key informants as a significant need in Solano County. Although nearly all children have dental insurance, approximately one-third of adults in Solano County do not.[27] Some low income adults may not realize they qualify for Denti-Cal dental services (Medi-Cal benefits for adults were recently restored in California[28]), some residents do not realize that Medi-Cal covers dental services, and undocumented residents may be hesitant to sign up for coverage due to fears about their information being shared with government authorities.

The affordability of dental services is a major challenge for residents who lack dental coverage, but even for those who have dental insurance, coverage may not pay for all needed dental services, resulting in prohibitively high out-of-pocket costs for patients. These high costs may cause them to avoid needed treatment or even visiting the dentist for preventive services.

Populations disproportionately affected: Low income families are disproportionately affected by this need, including low income adults who may not realize that they (and their children) qualify for coverage and those that have coverage but can't afford copayments for services. Some families are struggling to cover their basic needs and do not prioritize going to the dentist over paying rent or feeding their family. Older adults who do not qualify for Medi-Cal may not be able to afford dental coverage as it is not covered by Medicare. Many undocumented residents fear signing up for coverage or seeking services.

Recommendations

- ***Launch public awareness campaigns:*** Public awareness campaigns can help spread the word about who is eligible for insurance and what the insurance covers as well as encourage residents to sign up. Oral health services available for the uninsured can be advertised and undocumented immigrants can be informed about their oral health care options.

> *"There are stories of people going to the dentist offices and receiving partial care and being told if you want us to finish the rest come back and it's going to be $5000. It's very common that people are hesitant to go anyway and then they're hit with big bills and need to come back. For some it's been a very traumatic experience."* – KII participant

[27] California Health Interview Survey. (2014-16). Retrieved from http://ask.chis.ucla.edu

[28] Medi-Cal was expanded to cover uninsured adults in 2010, and California SB 97, passed in 2017, fully restored adult dental benefits as of January 1, 2018. (Source: California Health Care Foundation. (2013). California health care almanac. Retrieved from https://www.chcf.org/wp-content/uploads/2017/12/PDF-MediCalFactsAndFigures2013.pdf; California Dental Association. (2017, November 2). New benefits for Denti-Cal adults in 2018. Retrieved from https://www.cda.org/news-events/new-benefits-for-denti-cal-adults-in-2018)

- ***Expand services for the uninsured:*** These services can include county dental clinic services. Progress has already been made on this recommendation, as the dental clinics recently expanded their hours. Partnerships can also be fostered with local dental schools and their students to offer free or sliding-scale care.
- ***Advocate for insurance reform:*** Services covered by insurance should be expanded and universal dental insurance coverage should be advocated for. Dental insurance should be integrated into physical health insurance; a managed healthcare system that integrates all aspects of healthcare under one umbrella can be rewarded through tax breaks or start-up money. However, key informants also discussed the fact that there will need to be increased funding to provide coverage for additional oral health services.

Supply of Providers

The shortage of dental providers in Solano County, particularly for children, was prioritized as a pressing problem by all 10 focus group participants and 7 key informants. In fact, although there are 92 dentists per 100,000 residents in Solano County, there are only 20 Denti-Cal dentists per 100,000 beneficiaries in Solano County who are accepting new patients.[29] Moreover, some dentists who accept Denti-Cal will only see a limited number of Denti-Cal patients. The limited supply of dentists results in long wait times for services or the need to travel long distances to find a dentist. According to key informants, the lack of dental providers in Solano County who take Denti-Cal is likely due in part to low reimbursement rates for services and administrative barriers, problems that were also identified in a 2016 report by the Little Hoover Commission.[30] Reimbursement rates for Denti-Cal providers increased in 2017[31] and would increase even further under California's 2018-19 budget.[32] However, it may take time for these increases to encourage a greater number of dental providers to take Denti-Cal patients.

Several key informants also highlighted the need for more pediatric dentists who can work with children, understand their fears and needs, have the right-sized chair, provide the correct types of sedation, and are confident in assessing and treating tongue tied or lip tied children. One informant who works with the perinatal and 0-5 population mentioned that some dentists will not see a child until they

[29] Health Resources & Services Administration and Denti-Cal Referral List, July 2018.
[30] Little Hoover Commission. (2016). *Fixing Denti-Cal*. Retrieved from: http://www.lhc.ca.gov/sites/lhc.ca.gov/files/Reports/230/Report230.pdf
[31] California Dental Association. (2017, August 14). Rate increases and benefit restoration for Denti-Cal program. Retrieved from https://www.cda.org/news-events/rate-increases-and-benefit-restoration-for-denti-cal-program
[32] American Dental Association. (2018, July 30). California state budget increases Denti-Cal reimbursement rates. Retrieved from https://www.ada.org/en/publications/ada-news/2018-archive/july/california-state-budget-increases-denti-cal-reimbursement-rates

turn 5 despite recommendations that children see a dentist when they get their first tooth or at one year.

Populations disproportionately affected: Low income children and residents of Rio Vista and Dixon are disproportionately affected by the shortage of dental providers. One key informant also highlighted the need for more providers who can work with special needs populations.

Recommendations

- ***Provide additional training and incentives:*** Additional training and incentives should be provided for oral health providers to work in low-income communities and with children.
- ***Mandate caseload standards:*** Denti-Cal providers can be mandated to see a minimum number of Denti-Cal patients.
- ***Advocate for increasing Denti-Cal reimbursement rates:*** Providers may be more willing to accept Denti-Cal patients if reimbursement rates were increased even further.
- ***Offer school-based dental screenings, cleanings, sealants, fluoride varnishes, and referrals to treatment:*** Implementing school-based programs in preschools and elementary schools may be a cost-effective way of providing cleanings, screenings, sealants on molars, fluoride varnishes, and referrals if additional treatment is needed (portable equipment can be brought to do fillings). However, school-based programs require buy-in from school leaders, particularly the superintendent and principal, and conveying the benefits of good oral health for children's attendance and academic outcomes.
- ***Invest in community-based preventive services:*** Expand locations served by the mobile dental van. Provide education, free dental screenings, and preventive services (sealants, fluoride varnish) via home visits, medical clinics, social service agencies, WIC, and health fairs.
- ***Increase partnerships with local dental schools:*** Dental students can provide free or sliding-scale care.

Transportation

Transportation was mentioned as a significant barrier to accessing preventive dental care by 5 key informants, especially for low-income residents, persons experiencing homelessness, and older adults. Some key informants noted that patients often do not show up for their appointments and that transportation problems may be one reason. Medi-Cal will cover transportation, but accessing and navigating the service is cumbersome and inconvenient. Using public transportation is difficult for populations with mobility issues and can be very time-consuming.

Populations disproportionately affected: Low income residents, the homeless population, and older adults.

Recommendations

- ***Provide Medi-Cal transportation support:*** Assistance is needed to help patients utilize Medi-Cal's transportation services, which require an application and ride reservations.
- ***Offer free transportation options:*** Provide taxi vouchers and alternatives to public transit to help patients get to their appointments.

- ***Expand the locations served by the mobile dental van:*** By expanding the locations served by the dental van, preventive services can reach people who lack transportation to dental appointments. Specifically, key informants mentioned visiting low-income housing complexes and rural areas where migrant populations live.
- ***Co-locate services:*** Offering preventive services like fluoride varnish and sealants at schools, social service agencies, and medical clinics obviates the need for an additional trip to access dental care.

Cultural and Linguistic Barriers

Four key informants discussed additional challenges to accessing preventive dental care for communities of color. Oral health services are not always culturally appropriate and offered in the patient's primary language. In addition, key informant said that dental care providers often lack the training and skills to serve patients in a culturally competent manner. As a result, residents may be hesitant to seek preventive care and treatment. Additionally, communities of color often face higher rates of chronic diseases that have implications for their oral health. Two key informants also indicated that there are immigrant families with other cultural beliefs who may have never been to the dentist. In addition, key informants mentioned the need to challenge people's assumptions that they will have poor oral health because they've witnessed poor oral health among previous generations of family members.

Populations disproportionately affected: Communities of color, including immigrant, African-American/Black, Hispanic/Latino, and Asian/Pacific Islander communities.

Recommendations

- ***Enhance providers' ability to engage in culturally appropriate care:*** Provide cultural competency training to enhance dental care providers' capacity to provide culturally sensitive services. Solicit the help of community health workers, Promatora, cultural or religious leaders, as well as health equity advocates to improve the dental visit experience for communities of color.
- ***Offer education and dental services in different languages:*** Oral health education and educational materials are not always culturally appropriate and offered in the patient's preferred language. Translation/interpretation services among dental providers should be extended.
- ***Measure quality in oral health service provision****:* This includes assessing disparities in outcomes and holding providers accountable for reducing disparities.

System Navigation and Integration

System navigation and integration were cited as a high priority need for Solano County, according to 9 out of 10 focus group participants and 6 key informants.

> "*The lack of education is driving disparities in oral health… We need education regarding oral health care and support for navigating the system."* – KII participant

System Navigation

Key informants highlighted residents' need for greater support in using dental services in the county. Many people

are unaware that they have Medi-Cal or that Denti-Cal comes along with their Medi-Cal benefits. Additionally, they are unaware of available oral health services and need general help with navigating their dental insurance. Patients would also benefit from supported referrals, including assistance making appointments and arranging transportation as well as following up to ensure they were successfully connected to care. Key informants emphasized the need for navigators to complete training and possess subject matter expertise to ensure they can provide patients with complete and accurate information (e.g., which dentists are taking Denti-Cal and what's covered by patients' insurance). Such system navigation support may help address the problem of patients not showing up for their appointments.

System Integration

Addressing the oral health needs of the county can't be fully accomplished by one organization or one provider. Providers from across sectors – dental, medical, mental health, education, and social services – need to work together towards improving oral health in the county and existing community collaboratives must have oral health on their agenda. Greater coordination between service systems and increased co-location of services can lead to improved efficiency and the elimination of barriers to care for families. Conversely, a lack of coordination across services increases the likelihood that residents will not receive all the services they need and "fall through the cracks." As mentioned previously, key informants recommended bringing dental services, including screenings and preventive services, into schools and integrating oral health care into primary care. In addition, three key informants discussed the ways in which oral health can be integrated into the workplace: employers can support employees in taking time off work for dental appointments and ensure employees understand their dental insurance and how to use it.

Populations disproportionately affected: System navigation and integration is a particularly important concern for low income residents who are unaware of the oral health services offered by Medi-Cal or that they even have dental coverage through Denti-Cal. This need also disproportionately affects populations with conditions that hinder their ability to care for their oral health, including unresolved trauma, homelessness, mental health/substance use issues, developmental disabilities, and other special health needs such as diabetes.

Recommendations

- ***Provide navigation support at initial touch-points:*** Several key informants recommended that Medi-Cal eligibility workers inform people about their dental benefits and available services during intake, and that navigation support should be provided for vulnerable populations when accessing county services.
- ***Expand upon existing navigation support systems:*** System navigation support is available in the county through Help Me Grow and some CBOs, like Solano Coalition for Better Health, but should be expanded and emphasize oral health.
- ***Develop a catalog of oral health services:*** Develop, maintain, and regularly update a web-based resource with key information about available services.
- ***Co-locate services:*** Provide preventive services like screenings, cleanings, and fluoride varnish and sealants in schools,

> *"Work can't fully be done by one organization or one health care provider. It requires collaboration. We have some strong collaborations in Solano."* – KII participant

social service agencies, and medical clinics. One key informant also recommended integrating oral health services into wraparound care for substance use patients in treatment centers and CBOs. This population often needs support navigating in accessing services.

- ***Integrate oral health wellness policies into schools and workplaces:*** Mandate nutrition standards in afterschool and child care programs; restrict advertising and sale of sugar sweetened beverages at schools and workplaces; allow employees time off to go to the dentist and information about their dental coverage; and require all entering kindergartners to see a dentist before enrolling in school (as is required with immunizations).
- ***Build oral health into the agenda of cross-sector collaboratives:*** Bridge connections between the dental, medical, mental health, education, and social service systems, and ensure county collaboratives have oral health on their agenda.
- ***Increase cross-referrals and integrate discussions of oral health into other services:*** This strategy would require providers across systems be aware of the oral health care available in the county. In addition, providers across systems should integrate discussions of oral health care into conversations with the people they serve. For example, several key informants recommended encouraging medical doctors to talk to their patients about the importance of oral health and connecting them to services when needed. Despite the connection between oral health and many medical conditions, doctors rarely ask about oral health and are unaware of the oral health services available.

Community Water Fluoridation

Finally, 3 key informants discussed the need for community water fluoridation throughout Solano County. Currently, the water systems in Dixon, Rio Vista, and Suisun City are not fluoridated, affecting 13% of Solano County residents. Water fluoridation is a cost-effective strategy to improve oral health, but several challenges remain in implementing universal water fluoridation. Despite being an affordable oral health prevention strategy, funding and guidance are needed to expand fluoridation to additional cities. Additional barriers include misperceptions and myths around fluoridated water (e.g., that it causes brittle bones and decreased cognition). Others believe community fluoridation is too expensive and that there is a risk of putting too much fluoride in the water. Still others believe that residents should have a choice about what is put in their water; however, most people don't have the money or knowledge about fluoride's benefits to put fluoride drops into their own water.

Populations disproportionately affected: Residents of Dixon, Rio Vista, and Suisun City.

Recommendations

- ***Advocate for universal water fluoridation:*** Educate residents and policymakers about the benefits of water fluoridation and dispel common misperceptions and myths.

Oral Health Screening Data

In the summer and fall of 2018, a registered dental hygienist (RDH) and Solano County Health Education Specialist conducted oral health screenings throughout the county with the following populations: children attending summer pre-K academies, pregnant women visiting WIC offices, and third-graders. The screenings helped identify residents with cavities, filled teeth, and "poor oral health" (visible plaque and red or bleeding gums), as well as how urgently treatment was needed (no obvious care needed, non-urgent care needed, or urgent care needed). The RDH also determined whether the children screened currently had a significant number of early childhood caries (ECC).[33] All children were also checked for the presence of sealants or if they needed sealants on their permanent molars. Participants were also asked about whether they had been to the dentist and their insurance status.

It should be noted that the screening data for third-graders are based on children attending a representative sample of schools in Solano County. In contrast, the data for Pre-K academy attendees and pregnant women are not from representative samples and therefore should not be generalized to the broader population.

The screening results for third-graders were not available at the time of this report's release. The remainder of the section summarizes the findings from the oral health screenings of children attending summer pre-K academies and pregnant women visiting WIC offices, highlights of which include:

Access to Preventive Care

- Among Pre-K participants, 91% had dental insurance and 72% had been to the dentist in the last six months. Dental visits were less common among children in Vallejo and African-American/Black children.
- In contrast, only 63% of pregnant women screened had dental insurance and 17% had been to the dentist in the last six months. Women said they had not been to the dentist, because they don't have the money (cited by four women), don't have a ride (cited by two), and don't know where to go (cited by two).

Cavities and Fillings

- The screenings revealed cavities in 27% of Pre-K students and filled teeth in 16% of students.
- Forty-seven percent of pregnant women had cavities and 65% had filled teeth.

Treatment Needs

- One percent of Pre-K students were in "poor oral health" and 27% needed treatment, including 5% who needed urgent treatment.
- One pregnant woman was in poor oral health; 53% of the women needed treatment, including 29% who needed urgent treatment.

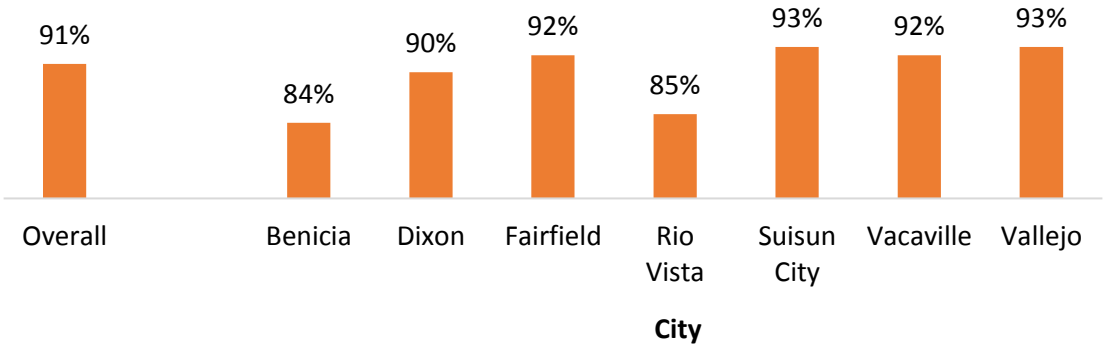
[33] According to the American Academy of Pediatric Dentistry, ECC is defined as a condition in which a child under six has decayed, missing, or filled teeth surfaces in the primary teeth. See http://www.aapd.org/media/policies_guidelines/p_eccclassifications.pdf

Pre-K Academy Students

Prior to the oral health screening, participants were asked about their insurance status, whether they had been to the dentist at all, and whether they had been to the dentist in the last six months.

Just over 9 in 10 children enrolled in pre-K academies had dental insurance. The geographical differences in the percentage of children with dental insurance were not statistically significant.

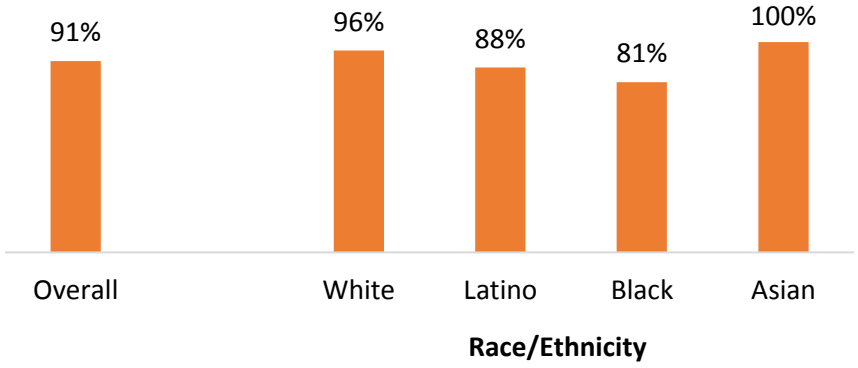
Figure 35. Percent of Pre-K Screening Participants with Dental Insurance, by City



N = 303 (overall); 51 (Benicia); 10 (Dixon); 118 (Fairfield); 13 (Rio Vista); 14 (Suisun City); 39 (Vacaville); 57 (Vallejo).

Although there were some differences in insurance status based on race/ethnicity, these differences also were not statistically significant.

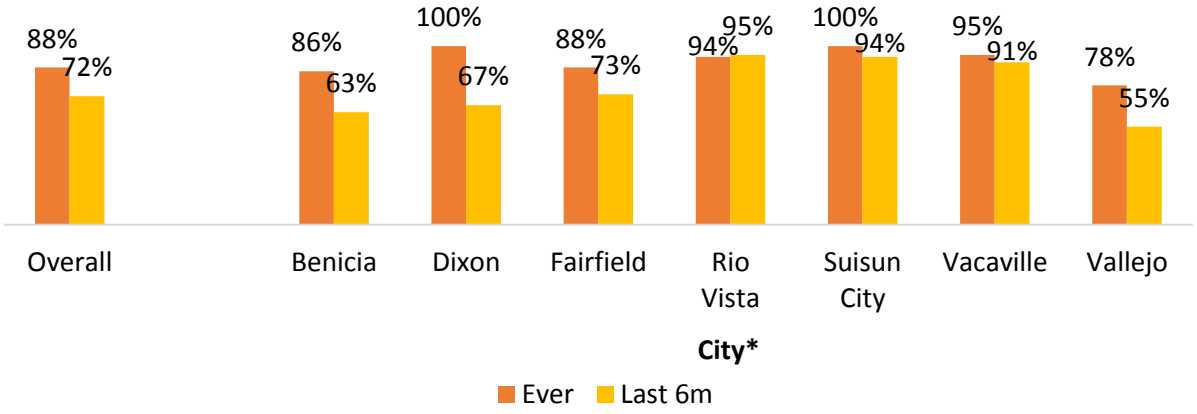
Figure 36. Percent of Pre-K Screening Participants with Dental Insurance, by Race/Ethnicity



N = 303 (overall); 56 (White); 107 (Latino); 42 (Black); 18 (Asian).

Even if they had insurance, not all children had been to the dentist. About 88% of Pre-K children had ever been to the dentist, but only 72% had been to the dentist in the last six months. There also were disparities by city, with dental visits more common among children in Rio Vista and Suisun City and less common among children in Vallejo.

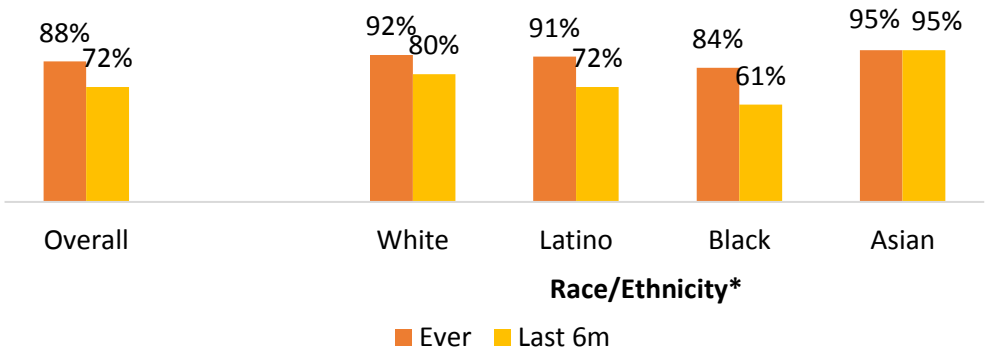
Figure 37. Percent of Pre-K Screening Participants Who Had Been to the Dentist, by City



N = 328-330 (overall); 51 (Benicia); 10 (Dixon); 118 (Fairfield); 13 (Rio Vista); 14 (Suisun City); 39 (Vacaville); 57 (Vallejo). *Statistically significant, p<.05.

African-American/Black children were least likely to have been to the dentist, while Asian children were most likely to have had a dental visit.

Figure 38. Percent of Pre-K Screening Participants Who Had Been to the Dentist, by Race/Ethnicity

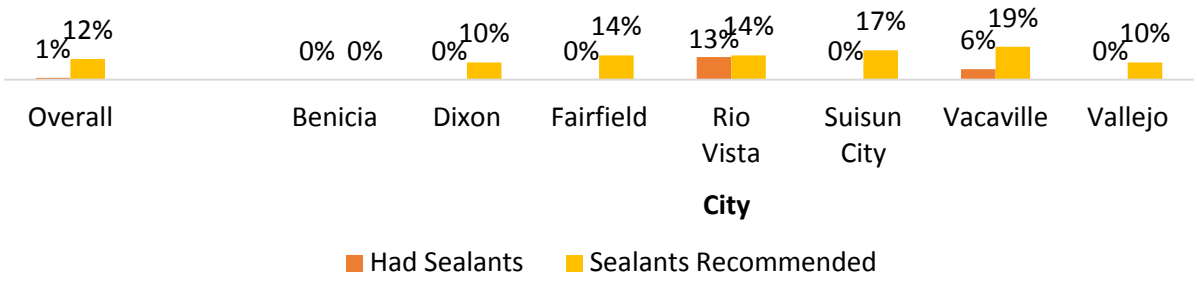


N = 328-330 (overall); 56 (White); 107 (Latino); 42 (Black); 18 (Asian). *Statistically significant, p<.05.

Just 1% of Pre-K students had a sealant. This low rate of sealants is primarily due to the fact that sealants are applied to permanent molars, which appear at around age 6,[34] and the Pre-K participants were 5 years old on average at the time of screening. All students who had a sealant were in Rio Vista or Vacaville. Of the students who did not have a sealant, the dental hygienist recommended sealants for the students who had their 6-year-old permanent molars (12% of the sample).

[34] American Dental Association. (2018). Sealants. Retrieved from https://www.mouthhealthy.org/en/az-topics/s/sealants

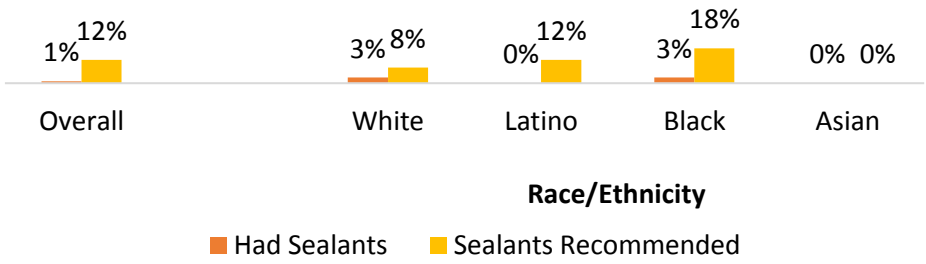
Figure 39. Percent of Pre-K Screening Participants Who Had Sealants and Needed Sealants, by City



N = 242-246 (overall); 31 (Benicia); 10 (Dixon); 102-103 (Fairfield); 7-8 (Rio Vista); 12 (Suisun City); 32-34 (Vacaville); 48 (Vallejo).

There were some racial/ethnic differences in the percent of Pre-K students who had a sealant and for whom a sealant was recommended, but these differences were not significant.

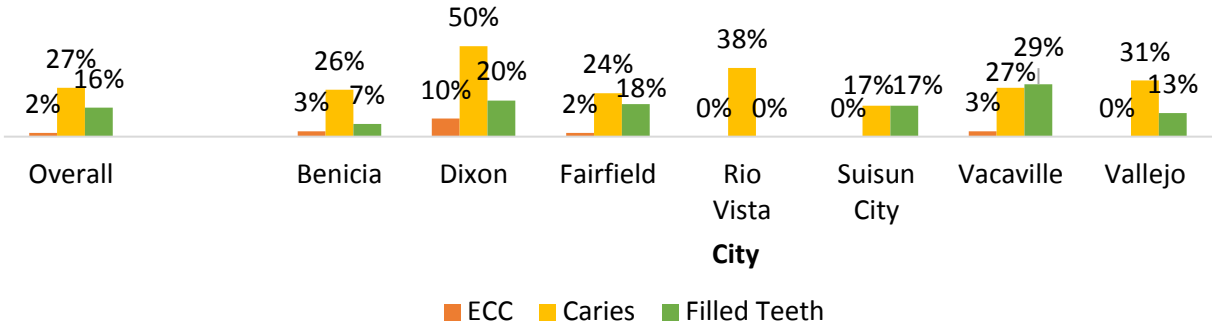
Figure 40. Percent of Pre-K Screening Participants Who Had Sealants and Needed Sealants, by Race/Ethnicity



N = 242-246 (overall); 36-37 (White); 97 (Latino); 34-35 (Black); 14 (Asian).

Twenty-seven percent of Pre-K attendees had cavities, including 2% who had ECC. Sixteen percent of students had filled teeth. The differences in these outcomes based on location were not statistically significant.

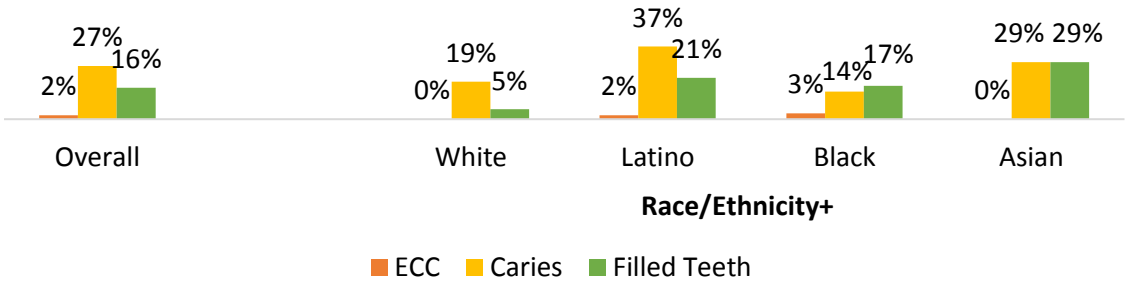
Figure 41. Percent of Pre-K Screening Participants Who Had Caries and Filled Teeth, by City



N = 246 (overall); 31 (Benicia); 10 (Dixon); 103 (Fairfield); 8 (Rio Vista); 12 (Suisun City); 34 (Vacaville); 48 (Vallejo).

Although there were some differences based on race/ethnicity in these outcomes, only racial/ethnic differences in the presence of cavities rose to the level of marginal significance. A somewhat greater proportion of Hispanic/Latino and Asian students had cavities relative to White and African-American/Black students.

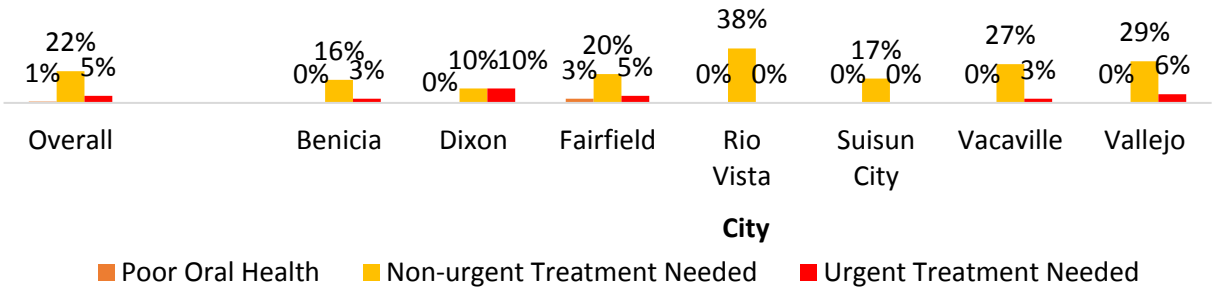
Figure 42. Percent of Pre-K Screening Participants Who Had Caries and Filled Teeth, by Race/Ethnicity



N = 246 (overall); 37 (White); 97 (Latino); 35 (Black); 14 (Asian). + Marginally significant, p<.10.

Finally, the dental hygienist assessed the child's overall oral health and need for treatment. One percent of students (all of whom were in Fairfield) were in poor oral health. Twenty-seven percent needed treatment, with 5% urgently needing treatment. There were no statistically significant differences in the percent of students who needed treatment based on location.

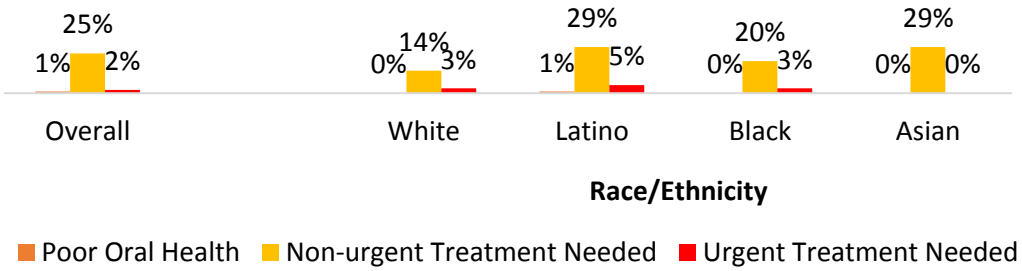
Figure 43. Percent of Pre-K Screening Participants in Poor Oral Health and Needed Treatment, by City



N = 246 (overall); 31 (Benicia); 10 (Dixon); 103 (Fairfield); 8 (Rio Vista); 12 (Suisun City); 34 (Vacaville); 48 (Vallejo).

There also were no statistically significant differences in the percent of students who had poor oral health or needed treatment based on race/ethnicity.

Figure 44. Percent of Pre-K Screening Participants in Poor Oral Health and Needed Treatment, by Race/Ethnicity



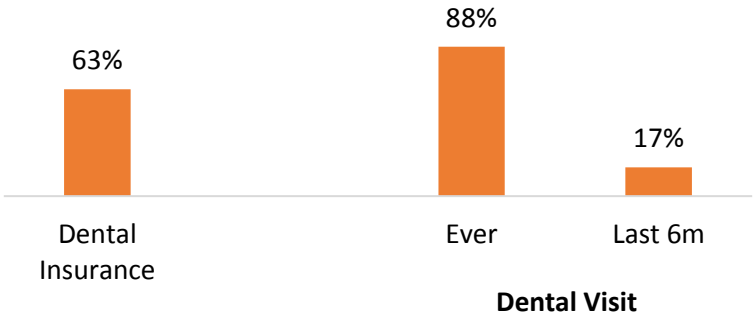
N = 246 (overall); 37 (White); 97 (Latino); 35 (Black); 14 (Asian).

Pregnant Women

Seventeen pregnant women visiting WIC offices received a screening from the RDH and Education Specialist. Four of the women were black, six were Hispanic/Latina, two were Asian, and one was white; the remaining four were multiracial or another race/ethnicity. Thirteen of the women were screened in Fairfield and four were screened in Vacaville. Please note that due to the small sample size, the results in this section are not shown by race/ethnicity or geography.

Before being screened, the women in the sample were asked about their insurance status and whether they had been to the dentist at all and in the last six months. Just under two-thirds of women had insurance, 88% had been to the dentist at some point, but only 17% had been to the dentist in the last six months. Women were also asked to list reasons they had not been to the dentist; four indicated that they did not have the money, two said that they did not have a ride, and two said that they did not know where to go.

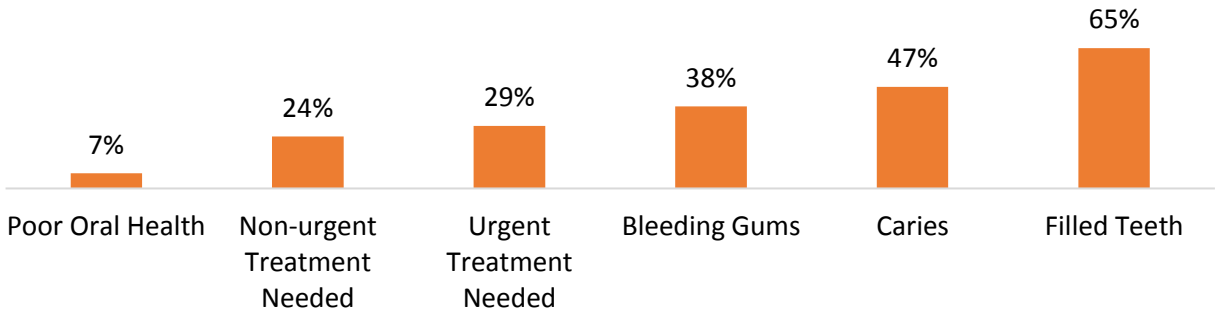
Figure 45. Percent of WIC Pregnant Women with Dental Insurance and Dental Visit



N = 17.

The oral health screening results revealed that only one of the pregnant women was in poor oral health, but just over half needed treatment, including 29% who needed urgent treatment. Thirty-eight percent of the women had experience bleeding gums during pregnancy, 47% had cavities, and 65% had filled teeth.

Figure 46. Percent of WIC Pregnant Women Who Had Caries, Filled Teeth, Bleeding Gums, Poor Oral Health, and Treatment Needs



N = 16-17.

Conclusion

This comprehensive oral health needs assessment drew on multiple sources to identify the greatest oral health needs in Solano County. According to key stakeholders and primary and secondary data gathered, Solano County residents would benefit most from strategies to address gaps in knowledge about the importance of oral health and available resources and services to prevent oral health problems; education around the connection between nutrition and oral health; improved access to healthy food and drinks; improved access to preventive dental care and treatment; system navigation supports and improved integration of service systems; and an expansion of community water fluoridation to all cities in Solano County. Approaches to address these needs, which will be defined in Solano County's Community Health Improvement Plan, can contribute to a healthier community, environment, and service system, thereby reducing disparities in oral health outcomes and improving the overall health of Solano County residents.

Appendix A: Solano County Community Indicator Prioritization Coding

Coding Key

1 = Problem is improving / Problem affects fewer than 10,000 people / No disparities

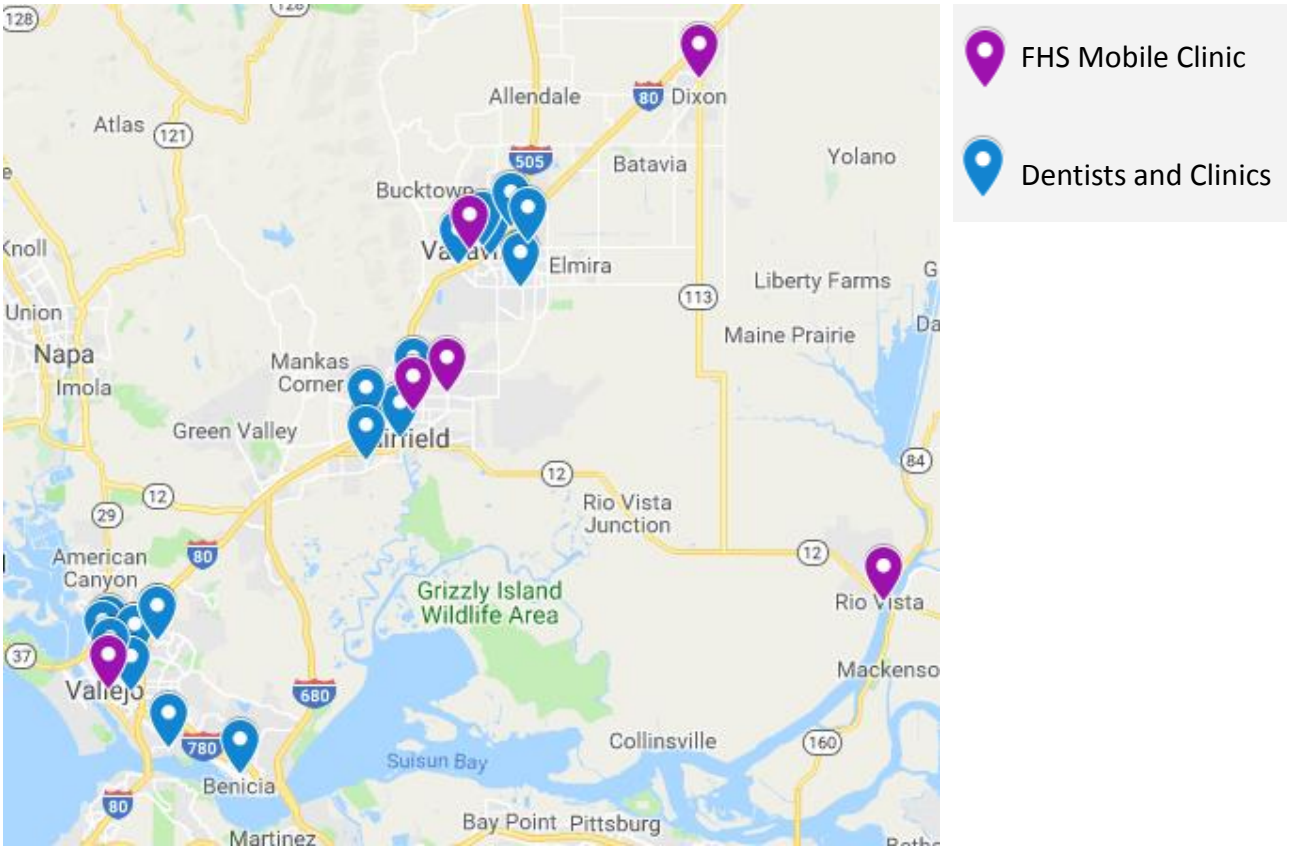
2 = No change in problem / Problem affects 10,000-50,000 people / Minimal disparities (e.g., no more than 10 percentage point difference between two groups)

3 = Problem is worsening / Problem affects more than 50,000 people / Significant disparities (e.g., more than 10 percentage point difference between two groups)

Indicator	Trends	Magnitude	Disparities (Racial/Ethnic, Geographic, or Socioeconomic)	Average
Percent of adults with dental insurance	3	3	-	3.00
Number of FTE dentists at Federally Qualified Health Centers	3	3	3	3.00
Percent of population on fluoridated water	-	3	3	3.00
Percent of population living in a food desert	-	3	3	3.00
Number of dentists	1	3	3	2.33
Percent of children on Denti-Cal who had an annual dental visit	2	2	3	2.33
Percent of Head Start children who needed treatment	3	1	3	2.33
Rate of Emergency Department (ED) visits for dental emergency	3	1	3	2.33
Percent of adults on Denti-Cal who had an annual dental visit	2	3	1	2.00
Percent of adults who smoke	2	2	-	2.00
Adult soda consumption 7+ times/week	2	2	-	2.00
Percent of Head Start children who had a dental screening	2	1	3	2.00
Percent of Head Start children who received needed treatment	2	1	3	2.00
Percent of children aged 6-9 on Denti-Cal who had sealants on a molar	2	2	1	1.67
Percent of students who returned the Oral Health Assessment	1	1	3	1.67
Percent of students with an Oral Health Assessment with untreated decay	1	1	3	1.67
Percent of pregnant women who had a dental visit	-	1	2	1.50
Percent of adolescents who use e-cigarettes	-	1	2	1.50
Rate of oral and pharyngeal cancer incidence	1	1	2	1.33

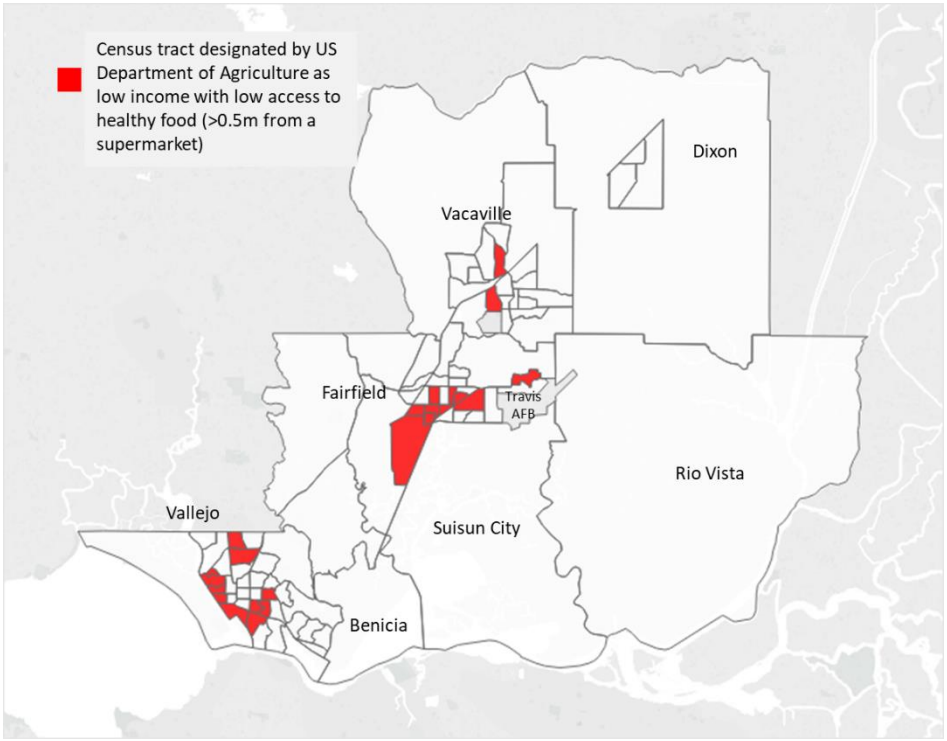
Indicator	Trends	Magnitude	Disparities (Racial/Ethnic, Geographic, or Socioeconomic)	Average
Percent of children with dental insurance	-	1	-	1.00
Percent of adolescents who smoke	-	1	1	1.00

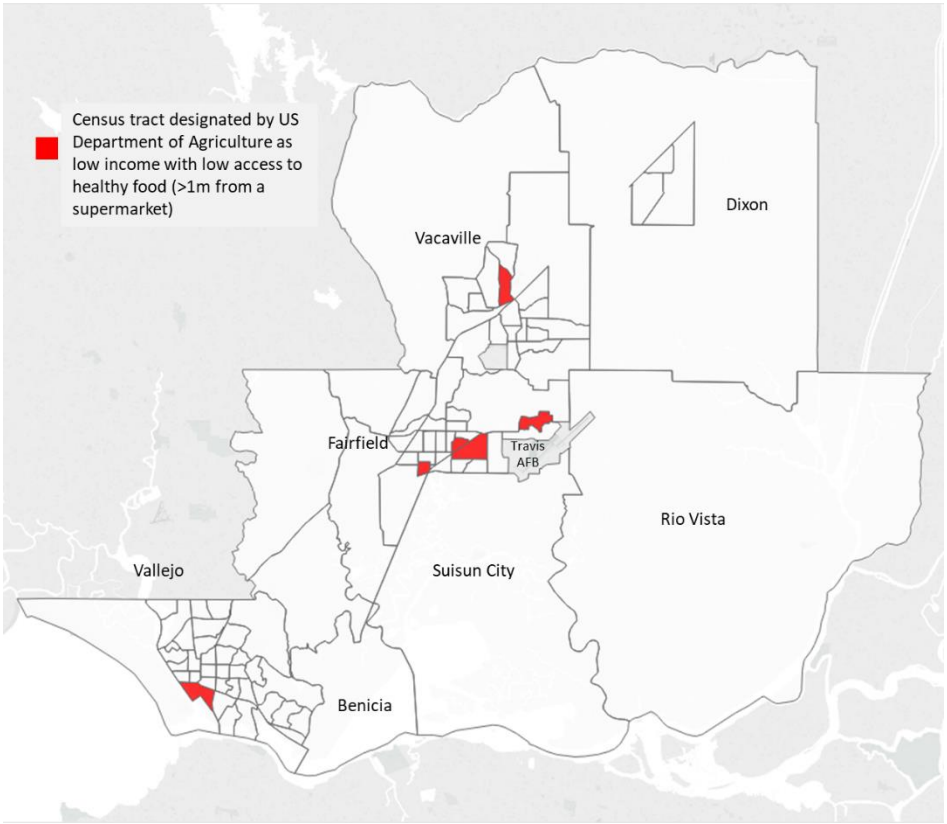
Appendix B: Dentists and Dental Clinics Accepting Denti-Cal and New Patients, July 2018



Source: Denti-Cal Referral List.

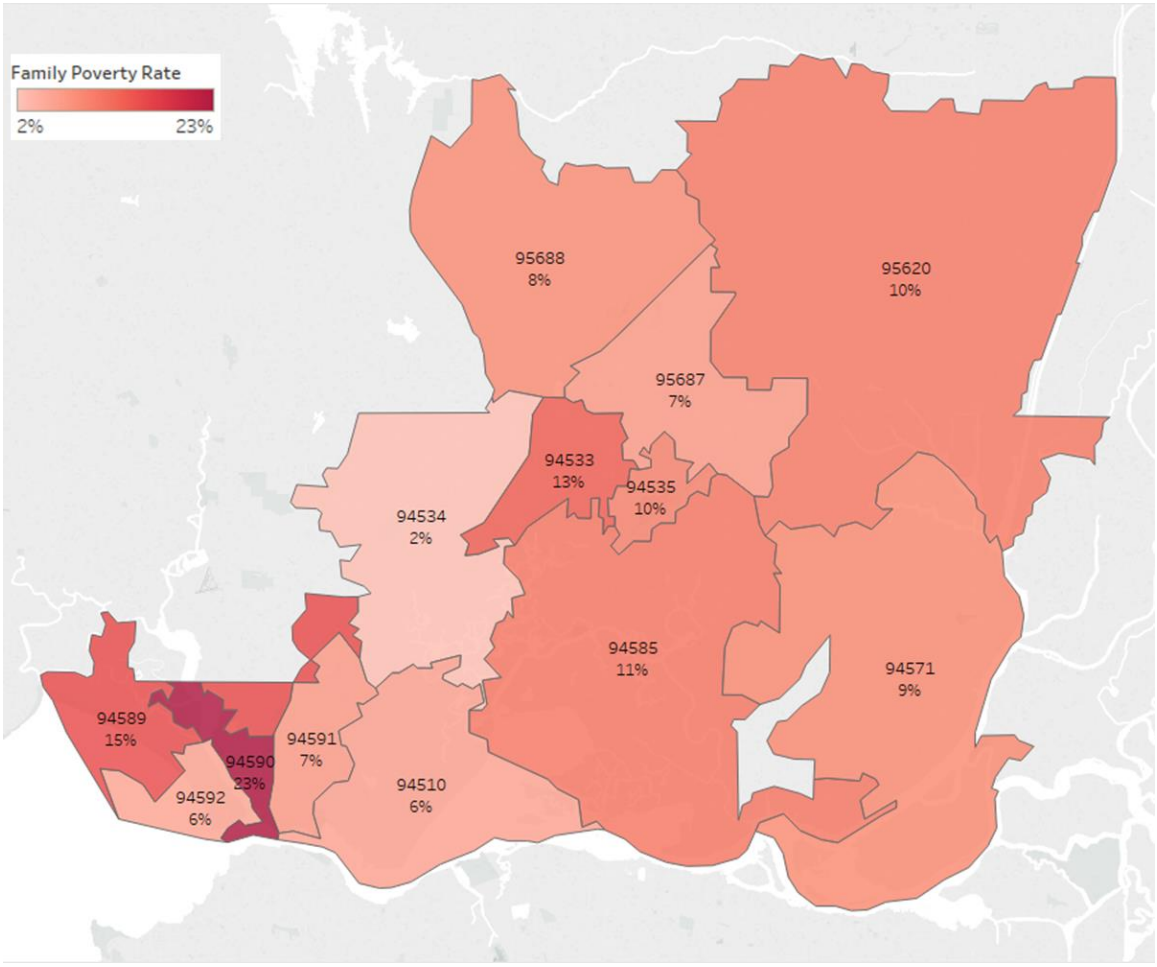
Appendix C: Census Tracts Designated as Food Deserts, 2017





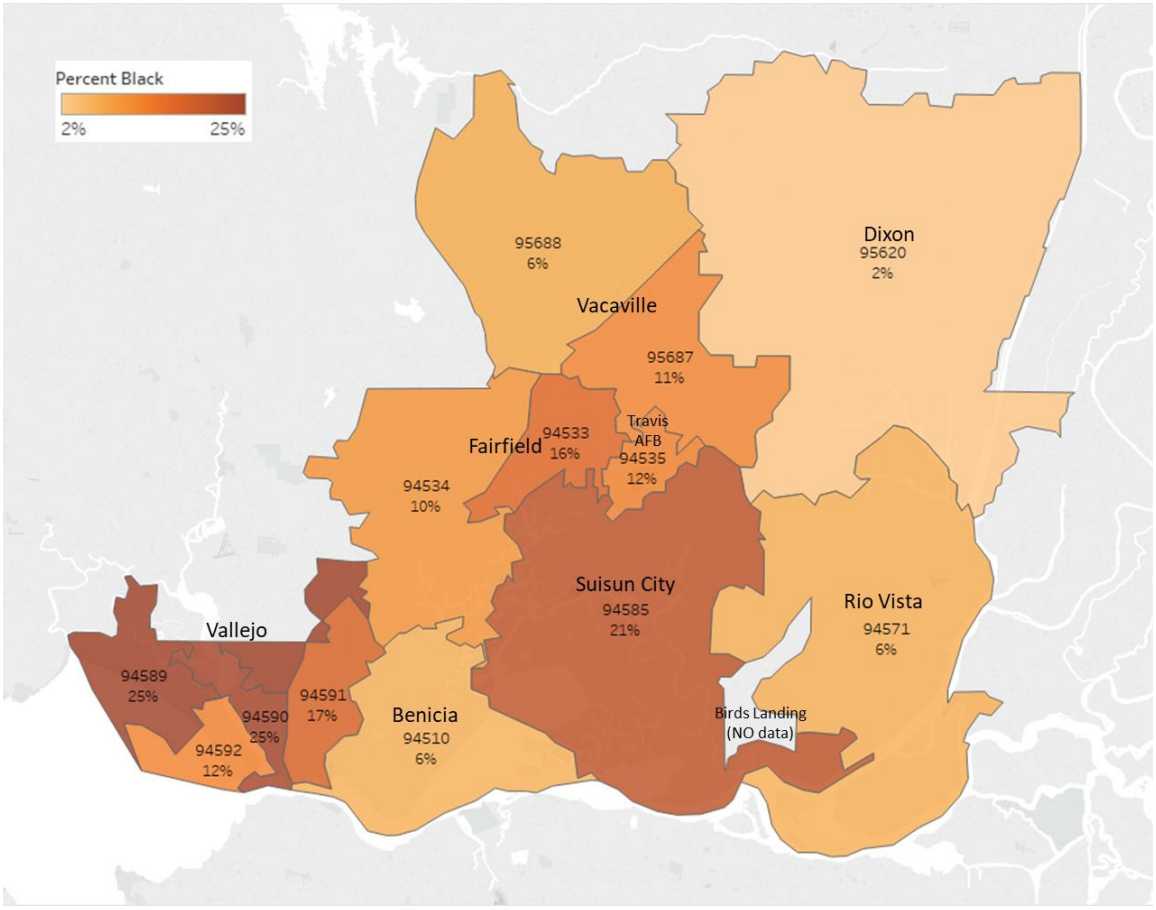
Source: US Department of Agriculture.

Appendix D: Percent of Families Living in Poverty, by ZIP Code, 2012-2016



Source: US Census.

Appendix E: Percent of Residents who are African American/Black, by ZIP Code, 2012-2016



Source: US Census.

Appendix F: Focus Group and Key Informant Interview Participants

Focus Group Participants

Name	Affiliation
Annette Alborg	Touro University
Carol Ash	Health and Social Services
Teresa Godfrey	Solano Family & Children's Services
Eugene Luna	La Clinica
Juanita Morales	Community Engagement Program Manager, First 5 Solano
Susan Miller	Child Start, Napa Solano Head Start
Anquanitte Ortega	Solano County Health and Social Services, Public Health
Juan Salinas	La Clinica
Noelle Soto	Project Manager, Mobile Dental Clinic
Teresa Winer	Solano County Health and Social Services, Public Health

Key Informant Interview Participants

Name	Affiliation
Wendi Buss	Vacaville WIC Supervisor
Sarah de Guia	California Pan-Ethnic Health Network
Vincent Filanova	Dental Director, OLE Health
Sneha Innes	Dental Director, Family Health Services
Manel Kappagoda	ChangeLab Solutions
Debra King	Public Health Nurse, Solano County Older and Disabled Adult Services
Bela Matyas	Solano County Health Officer
Juanita Morales	Community Engagement Program Manager, First 5 Solano
Tamera Owens	Director of Operations, Solano Coalition for Better Health
Jacqueline Patterson	Social Service Supervisor, Solano County Adult Protective Services
Noelle Soto	Project Manager, Mobile Dental Clinic

Appendix G: Count Data of Major Key Informant Interview Themes

Theme	Sub-Theme	Sub-Theme 2	Sub-Theme 3	Count	Percentage of total KIIs
Oral Health Public Awareness and Education				11	100%
	Education			11	100%
		Prevention topics		9	82%
			Oral health impacts overall health	6	55%
			Consequences of poor oral health	4	36%
			Value for prevention	3	27%
			What is oral health?	3	27%
			Nutritional effects on oral health	3	27%
		Prevention practices		6	55%
			Proper brushing	3	27%
			Setting good routines with children	2	18%
			Proper flossing	2	18%
		Strategies for families		6	55%
			Parents as models & teachers	3	27%
			Approaches/strategies for home & dental office visits & educ. materials	5	45%
		School-based education		8	73%
			Approaches/strategies for school talks & demonstrations	3	27%
			Approaches/strategies for after-school programs	2	18%
		Children 0-5 & pregnant moms		5	45%
			Prenatal visits with doctor	3	27%
			Key oral health questions	2	18%
			Perinatal group education	2	18%
	Increase public awareness			7	64%
		Bring information & education to where parents are at		7	64%
			Schools	5	45%
			Churches	4	36%
			Senior center	4	36%
			Libraries	3	27%
			Websites	2	18%
		Advertisements/publicity		4	36%
		Flier distribution		3	27%
		Send information home from dentist, doctor, school		2	18%
	Provide incentives like giveaways & gift certificates			4	36%
Nutrition Education and Access to Healthy Food and Beverages				7	64%
	Important topics			5	45%
		Effects of good nutrition on oral health/general health		4	36%

Theme	Sub-Theme	Sub-Theme 2	Sub-Theme 3	Count	Percentage of total KIIs
		Making good food choices		2	18%
	Availability of good foods			4	36%
		Food deserts		2	18%
	Strategies			4	36%
		Community strategies (e.g., farmers markets, veggie mobile van, corner store conversions)		3	27%
		School-based strategies (e.g., limit access to soda)		2	18%
Access to Preventive Dental Care				9	82%
	Need for more providers			7	64%
		Pediatric dentists who accept Denti-Cal		3	27%
		Pediatric dentists		2	18%
		Dentists who accept Denti-Cal		3	27%
		Dentists who accept residents with no insurance or have limited insurance coverage		2	18%
	Access issues related to insurance			8	73%
		Poor coverage		6	55%
			Ensure good coverage for kids	3	27%
			Doesn't cover big dollar treatments	2	18%
			Need better reimbursement rates	2	18%
	Strategies for treatment/outreach			7	64%
		School-based programs		6	55%
		Mobile-dental vans		2	18%
		Special areas of concern (oral cancer, tongue tie/lip tie)		3	27%
	Identifying target populations			11	100%
		Undocumented		6	55%
		Low-income		6	55%
		Older adults		4	36%
		Pregnant moms/perinatal		4	36%
		Homeless		3	27%
		Denti-Cal recipients		3	27%
		Substance use issues		3	27%
		Geographically underserved areas (e.g., Rio Vista)		3	27%
		Kids < 5		2	18%
		Communities of color		1	9%
	Need for training to work in culturally-appropriate ways			4	36%
	Transportation issues			5	45%
System Navigation				6	55%
	Navigating health/dental coverage			6	55%
		Unaware Dent-Cal included with Medi-Cal benefits		3	27%
		Unaware of oral health service options		3	27%
		Strategies		3	27%
			Provide information about services during intake	3	27%
	Increase within-agency communication & subject-matter expertise			2	18%
Systems Integration				9	82%
	Greater coordination & sharing of information within the county			7	64%

Theme	Sub-Theme	Sub-Theme 2	Sub-Theme 3	Count	Percentage of total KIIs
	Cross-context systems integration & partnerships			10	91%
		Oral health and general health care		8	73%
			At pediatrician/prenatal visits	6	55%
			At primary care visits	3	27%
		School & dental services		7	64%
		Improve workplace policies to support oral health		3	27%
	Insurance reform needed			4	36%
		Universal oral health care for all		3	27%
	Identify & empower gatekeepers			3	27%
	Change county-level policies			3	27%
		Community fluoridation		3	27%
		Restrict sugar sweetened beverages		2	18%
	Increase funding to support efforts to improve oral health			4	36%