

2019

Solano County Health Status Report

BY: SOLANO PUBLIC HEALTH EPIDEMIOLOGY
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SOLANO
PUBLIC
HEALTH



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Executive Summary

County assets:

- Solano County has a relatively young and growing population.
- Diversity is a significant asset for this county. All the major racial and ethnic groups are well-represented. Preserving this diversity and tailoring community resources to best serve all community members remain priorities.

Challenges facing the county:

- Affordable housing is a significant challenge for residents of the County. Housing costs have been rising steadily, and as the population continues to increase, so does competition for housing.
- Funding for services and charitable organizations has continued to be a struggle in Solano County. Solano County has consistently received the least amount of per-capita foundation investment of any Bay Area counties despite having the highest rate of family poverty.¹
- Limited public transportation options exist in the County. Services have been expanding, and a new Amtrak station recently opened. However, most residents are still commuting by personal car, and many have to commute long distances to work.

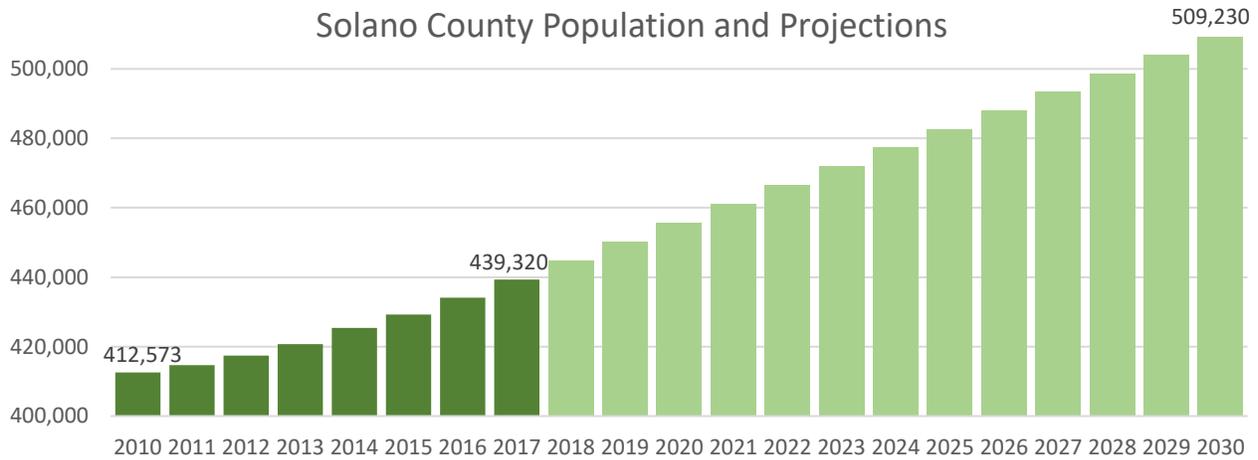
¹ Applied Survey Research. "Foundation Giving in the Bay Area." 2016.
<http://www.solanocounty.com/civicax/filebank/blobdload.aspx?blobid=22410>

Demographics and Social Environment

Population

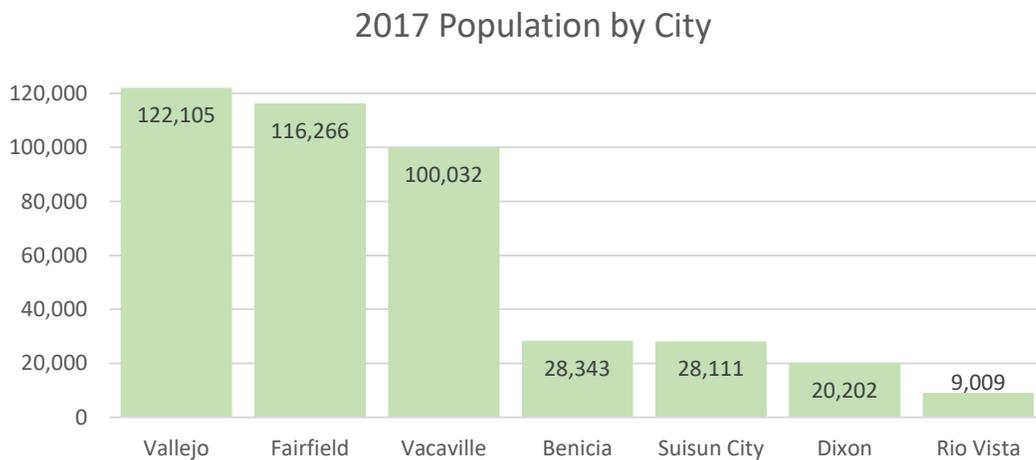
The estimated population of Solano County in 2017 was 439,320 residents. The County population has grown by approximately 27,000 residents since 2010 and is projected to continue to grow. The number of residents is expected to surpass 500,000 by 2029.²

Figure 1: Solano County Population 2010-2030



As of 2010, about 4% of County residents lived in rural areas, and the rest lived in urban areas.³ The population distribution by city is shown below.⁴

Figure 2: Population by City



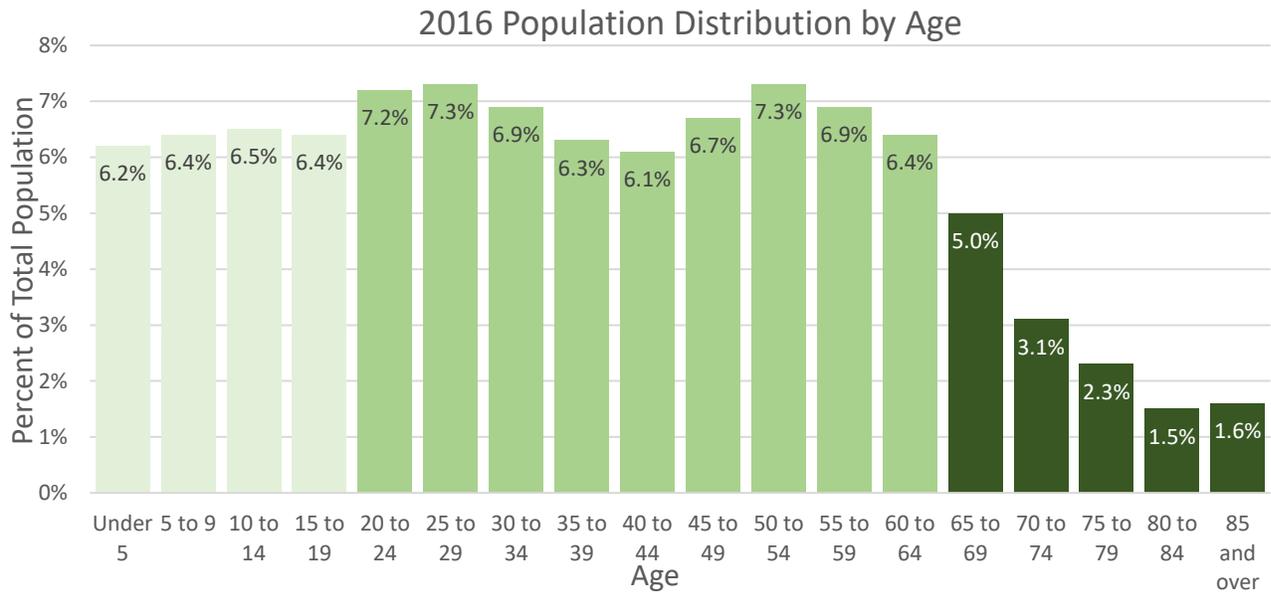
² State of California, Department of Finance, *County Population Projections (2010-2060)*. Sacramento, California, May 2018.

³ U.S. Census Bureau, 2010 Census, Summary File 1, Table P2.

⁴ U.S. Census Bureau, 2017 Population Estimates

In 2016, approximately 26% of the population were children ages 19 or younger, over 61% were adults ages 20 to 64, and 14% were seniors ages 65 and older. The table below details the population composition by 5-year increments.⁵

Figure 3: Population by Age



The median age in the County in 2016 was 37.5 years. There are approximately 98.8 males per 100 females. In 2016, approximately 12% of County residents reported having any sort of disability.⁶ In 2017, 12,069 residents received Supplemental Security Income (SSI), with over 81% of these receiving benefits due to being blind or disabled.⁷

About 8% of the population, or 33,653 residents, are veterans. Approximately 28% of veterans in Solano County have a service-connected disability rating, and almost 12% of veterans have a disability rating of 50% or higher.⁸

Solano county is racially and ethnically diverse with four major race/ethnic categories represented in significant percentages:⁹

⁵ U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

⁶ U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

⁷ Social Security Administration, SSI Recipients by State and County (2017).

⁸ U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

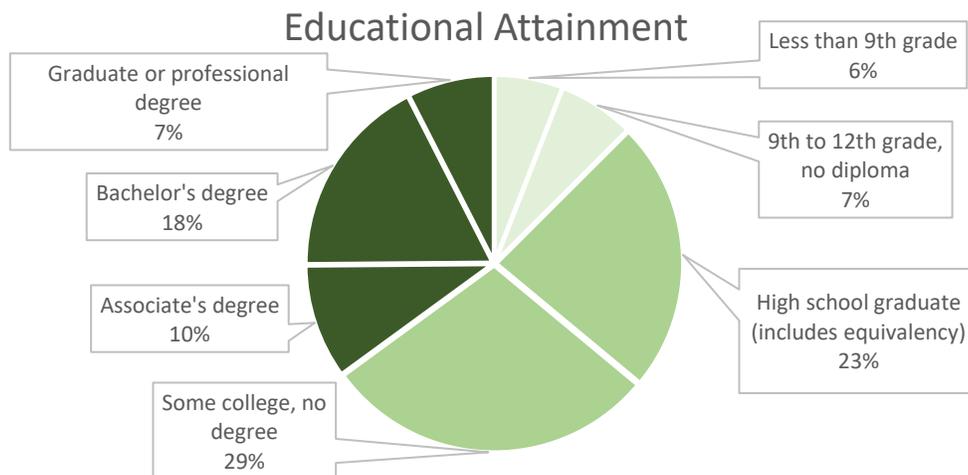
⁹ State of California, Department of Finance, County Population Projections (2010-2060). Sacramento, California, May 2018.

Table 1: Race and Ethnicity of Solano County

Race/Ethnicity	Percent of Total Population
White	39%
Hispanic or Latino (of any race)	26%
Black or African American	14%
Asian	14%
Two or more races	6%
Native Hawaiian and Other Pacific Islander	0.7%
American Indian and Alaska Native	0.4%

Most County residents have a High School degree or higher (88%), and 25% have a bachelor’s degree or higher.¹⁰

Figure 4: Educational Attainment



Family Structure

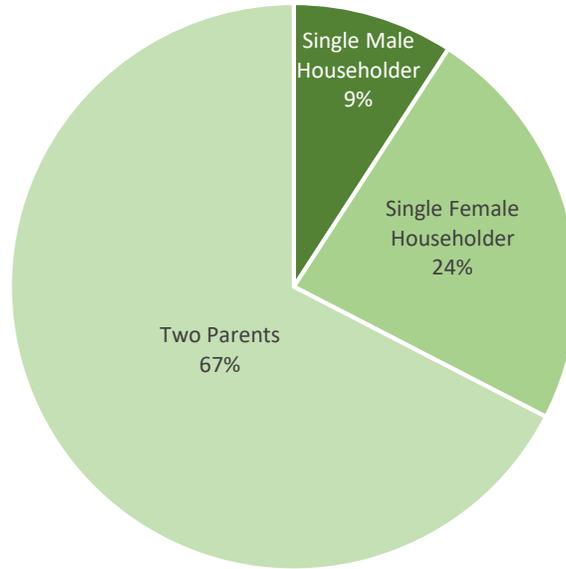
In 2016, there were 145,315 households in Solano County. A household is defined as all the people occupying a house, apartment, or other housing unit. These occupants may be related, such as a set of parents and their children, or unrelated, such as roommates sharing a house. Approximately 28% of households were non-family households consisting of unrelated residents, and 22% of households were people living alone.

The average household size was 2.88 people. The average family size was 3.36 people with 36% of households having one or more children (under age 18) living in them, and 28% of households having at least one senior (65 and older) resident. Of family households with children, most (67%) were headed by two parents, 24% were single female householders, and 9% were single male householders.

¹⁰ U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

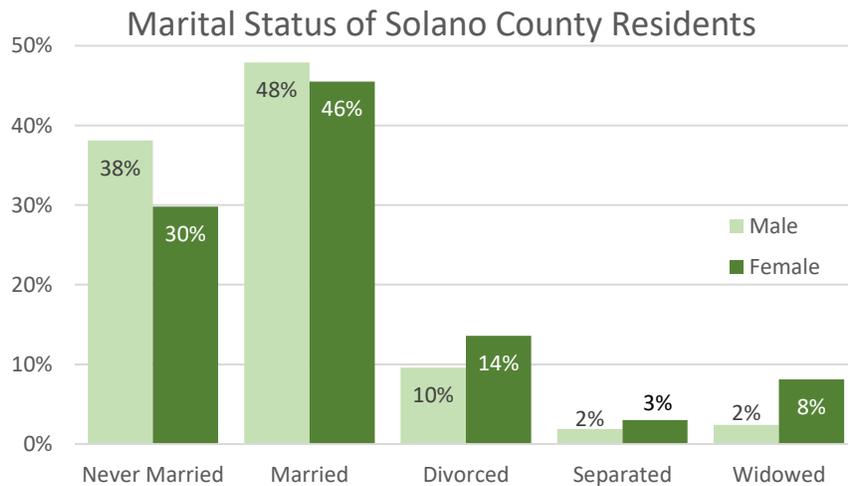
Figure 5: Family Households with Children Structure

Family households with Children Under Age 18 Years



About half of County residents are currently married (48% of males and 46% of females).

Figure 6: Marital Status of Solano County Residents

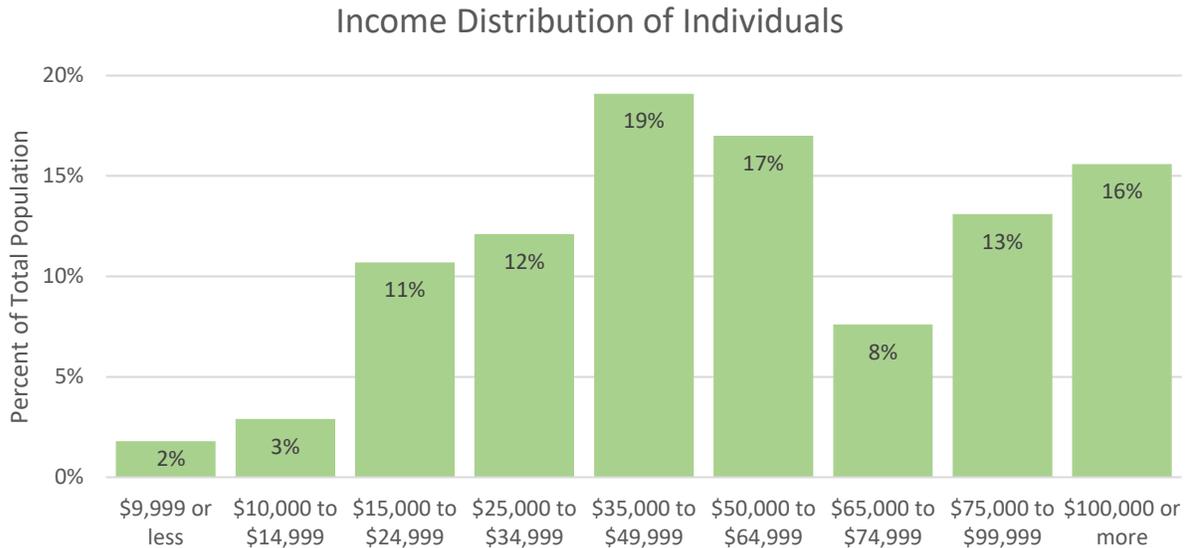


Almost 80% of County residents are native-born US citizens, with over half (57%) born in California. About 20% of the population is foreign-born, and of those, 57% have become naturalized US citizens. Over 92% of foreign-born residents entered the United States before 2010. Most of the County's

population, approximately 70%, speaks only English at home. The most commonly spoken languages other than English are Spanish (17%) and Asian and Pacific Islander languages (10%).¹¹

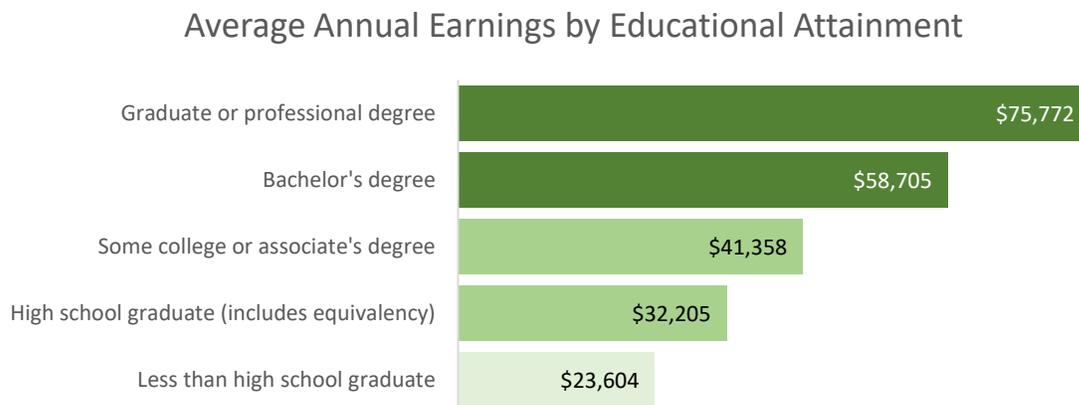
Financial Status

Figure 7: Income Distribution of Individuals



Residents with advanced education earn significantly more annual income than those with fewer years of education.¹²

Figure 8: Average Annual Earnings by Educational Attainment

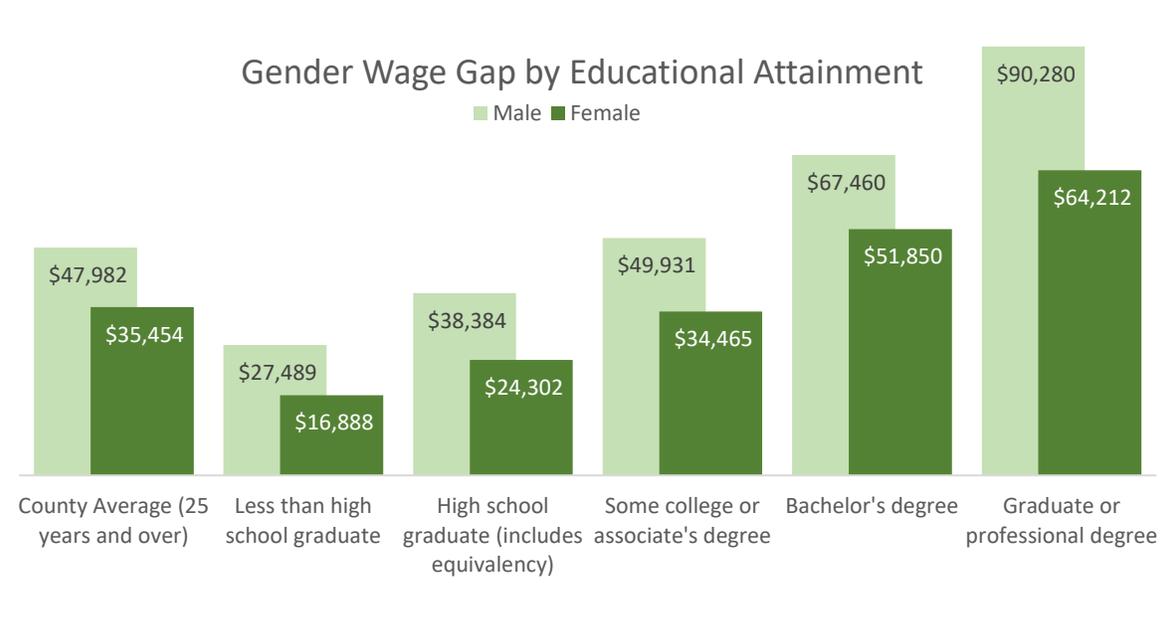


¹¹ U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

¹² U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Women in Solano County earn, on average, 74% as much as men with equivalent levels of education across all levels of educational attainment. Earnings figures include only full-time, year-round workers.

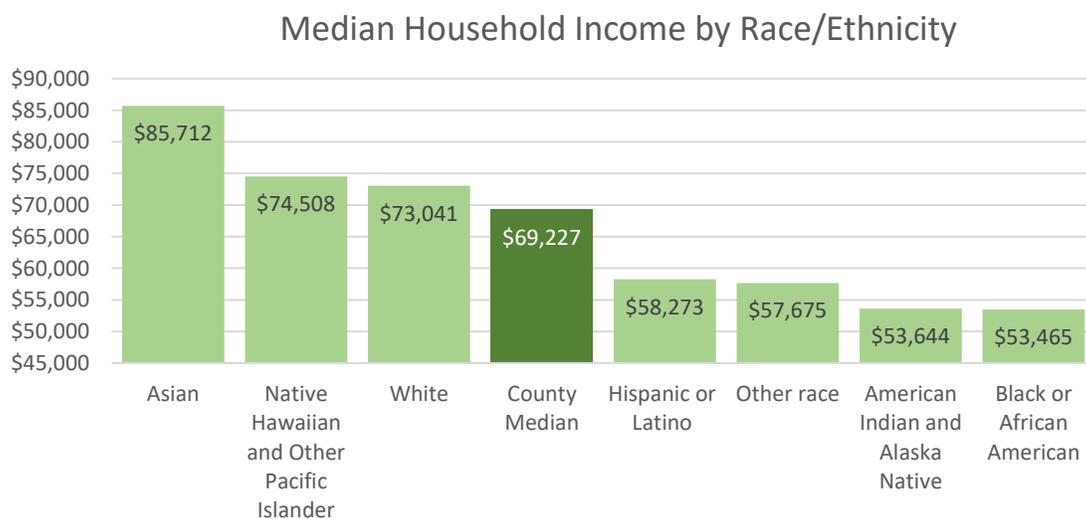
Figure 9: Gender Wage Gap by Educational Attainment



The gender wage gap is particularly significant for the 22% of family households in the County that are led by single female householders.

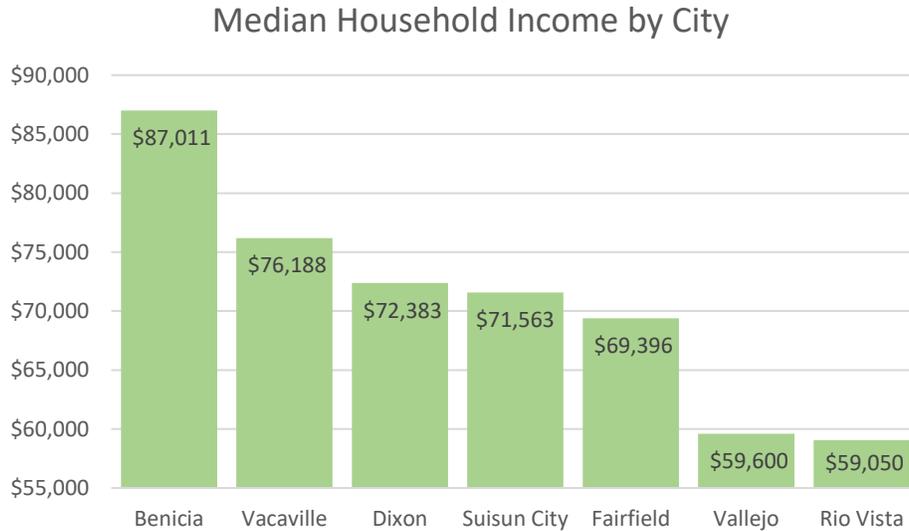
There is also a large variation in median household income by race and ethnicity. The median income for Asian households is about \$30,000 more annually than the median income of Black/African American households.

Figure 10: Median Household Income by Race/Ethnicity



The median annual household income in the County is \$69,227. Households in Benicia and Vacaville have a much higher median income than households in Rio Vista and Vallejo.

Figure 11: Median Household Income by City



An estimated 13% of County residents fall under the federal poverty threshold, which is an annual income of \$12,228 for an individual in 2016. On average, a Solano County resident in poverty would need to earn an additional \$6,802 per year to rise above the federal poverty threshold. Families in poverty would need to earn an additional \$9,648 per year.¹³

Approximately 10% of families fall below the federal poverty threshold, and 18% of children in the County are living in families that fall below the poverty threshold. Almost 25% of children in the County live in families that received public assistance in the prior year.¹⁴ During the 2016-2017 school year, 50% of children in the County qualified for free or reduced-price lunch. However, this varies widely across the County with 21% of students in Benicia and 70% of students in Vallejo receiving these benefits.¹⁵

The California Budget & Policy Center calculates a measure of the income needed to cover basic living expenses, such as rent and utilities, health care, food, taxes, and transportation, for County residents. In 2017, a family of two working parents, one preschool-age child, and one elementary-age child would need to earn an annual total of \$72,482 to meet basic needs. This figure rises to \$77,923 without employer-sponsored health insurance. A single adult would need to earn \$27,299 with employer-sponsored health insurance to be self-sufficient.¹⁶ As the median household income chart

¹³ U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

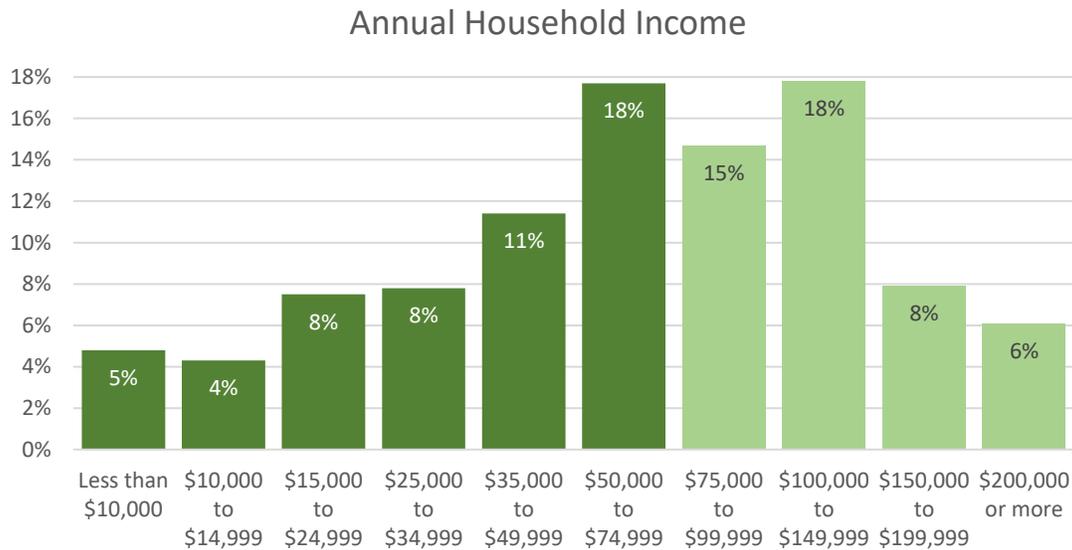
¹⁴ U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

¹⁵ California Department of Education. "California Longitudinal Pupil Achievement Data System." Available from <https://data1.cde.ca.gov/dataquest/>

¹⁶ California Budget & Policy Center report, "Making Ends Meet: How Much Does It Cost to Support a Family in California? (December 2017)." Available at calbudgetcenter.org/MakingEndsMeet

demonstrates, the average household income in 4 of the 7 cities in the County (Suisun City, Fairfield, Vallejo, and Rio Vista) is not sufficient to support a family of four. The chart below shows the household income distribution for the county as a whole, and about 54% of households fall below the family of four self-sufficiency standard, as seen in the darker green.

Figure 12: Annual Household Income



Employment

The 2016 unemployment rate for Solano County was 6.2%. Over half (56%) of the civilian labor force was employed, 1% was in the armed forces, and 37% was not in the labor force. The most common civilian occupations included management, business, science, and arts occupations (32%), sales and office occupations (25%), and service occupations (21%). Most employees in Solano County were employed in the private sector:

Table 2: Employment Type

Employment Type	Percent of civilian employed population age 16 and over
Private wage and salary workers	75%
Government workers	19%
Self-employed in own business	6%
Unpaid family workers	0.1%

Almost 41% of County residents are employed outside of Solano County, and nearly 17% report commuting more than an hour each way to work.¹⁷

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

Homelessness

In 2017, local agencies conducted a Point-in-Time count of the homeless population of the County. A total of 1,232 people were identified as homeless in Solano County at the time of the count; 95 were children under age 18. Approximately 30% of the homeless population were female and 70% were male; two individuals identified as transgender.¹⁸ However, the methodology used in the Point-in-Time count results in an undercounting of the homeless, including the chronically homeless.

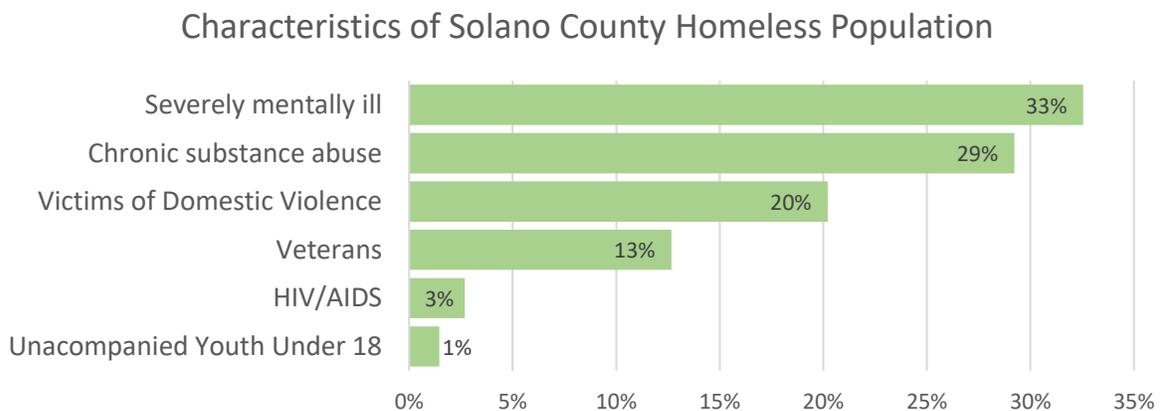
Most of the identified homeless population (74%) were unsheltered, while 15% were in transitional housing and 11% were in emergency housing. The homeless population is ethnically diverse, with Black and multiple race individuals being notably overrepresented in comparison to the overall ethnic makeup of the County.

Table 3: Race/Ethnicity of the Homeless Population

Race/Ethnicity	Percent of Homeless Population
Black	32%
White	24%
Hispanic/Latino	22%
Multiple Races	16%
Native Hawaiian/Pacific Islander	3%
American Indian/Alaska Native	3%
Asian	1%

The homeless population also self-reported the following characteristics:¹⁹

Figure 13: Characteristics of the Solano County Homeless Population



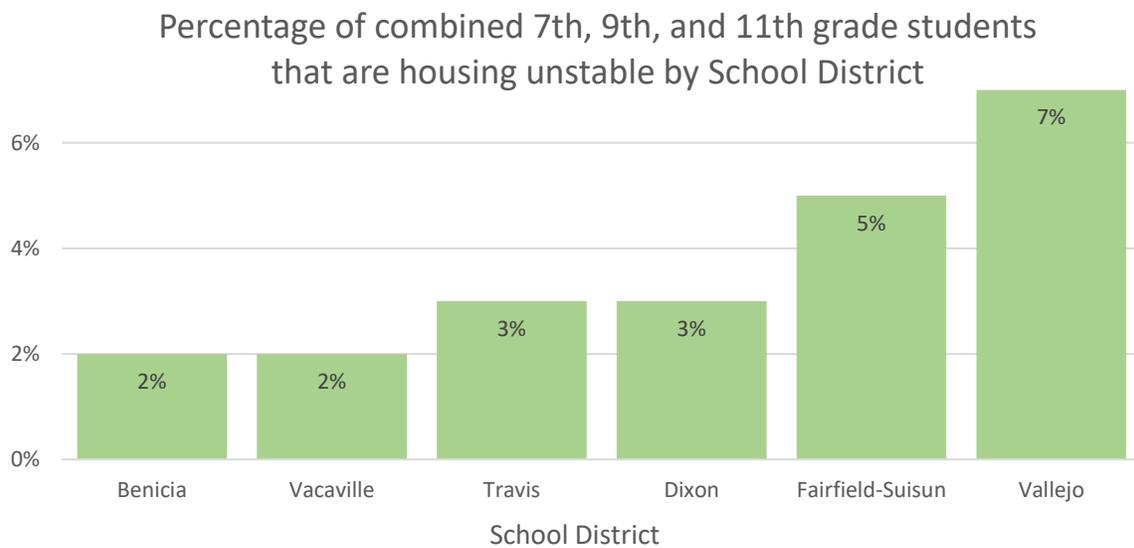
¹⁸ U.S. Department of Housing and Urban Development “2017 Continuum of Care Homeless Assistance Programs Homeless Populations and Subpopulations”

¹⁹ U.S. Department of Housing and Urban Development “2017 Continuum of Care Homeless Assistance Programs Homeless Populations and Subpopulations”

In addition to this more traditionally defined homeless population, there is a sizable population that experiences unstable housing. These latter persons may live at a friend’s home, in a hotel or motel, or in a home with multiple families, or stay at a campground or in another temporary living situation. This latter population is harder to monitor and to reach as they are not included in the point-in-time homeless count and they may not be accessing homeless services. Nevertheless, this housing instability has been shown to have a negative impact on health. Studies have found that for people experiencing unstable housing, children are 1.2 times more likely to be hospitalized and mothers are 2.7 times more likely to screen positive for depression. Unstable housing also has ripple effects with the unstably housed being 3-4 times more likely to experience other hardships, such as food insecurity or skipping needed medical care.²⁰

Using data from the 2015-2016 California Healthy Kid’s Survey, we calculated the percentage of combined 7th, 9th, and 11th grade students who self-reported living in an unstable housing situation. These students reported that they were living in a home with more than one family, at a friend’s home, in a hotel or motel, or in a shelter, car, campground, or other transitional or temporary housing.

Figure 14: Students who are Housing Unstable by School District



Non-traditional students were excluded due to a lack of consistent enrollment data, but survey response data suggest that unstable housing is an even larger problem for these students.²¹

²⁰ Sandel M et al. Unstable housing and caregiver and child health in renter families. *Pediatrics* 2018 Jan 22; [e-pub]. (<http://dx.doi.org/10.1542/peds.2017-2199>)

²¹ Calculated from the California Longitudinal Pupil Achievement Data System and 2015-2016 California Healthy Kid’s Survey. Both available from the California Department of Education at <https://dq.cde.ca.gov/dataquest>

Domestic Violence

In 2016, there were 2,041 calls to emergency services for domestic violence in Solano County. Most incidents (1,593 or 78%) did not involve a weapon.²²

In 2017 there were 6,177 reported allegations of child abuse and neglect in the County, representing a rate of 61.4 incidents per 1,000 children. Children under age 1 year had the highest rate of reported allegations (83 incidents per 1,000 children), followed by children ages 6 to 10 years (70 incidents per 1,000 children). The highest rates of reporting of child abuse and neglect occurred in American Indian/Alaska Native (249 cases per 1,000 children) and African American (137 cases per 1,000 children) residents, with the highest number of case allegations reported for African American residents (1,758 cases, or 32% of total allegations). The most commonly alleged types of abuse include general neglect (32%) and physical abuse (21%).

Of the 6,177 reports of child abuse, 287 (5%) were substantiated. Most of the substantiated cases (57%) were found to be general neglect. The number of child abuse allegations has been rising in recent years, but the number of substantiated cases of abuse has been declining.²³

Among students in grades 7 through 11, 6% reported having experienced dating violence in 2013. The highest rates were seen in 11th grade students, with almost 8% reporting having experienced dating violence in the prior year.²⁴

In 2016, 15.6% of children in Solano County were reported to have two or more Adverse Childhood Experiences, or ACEs. This is slightly lower than the California state average of 16.4%.²⁵

Violent Crime

The rate of violent crime in Solano County in 2017 was approximately 484 cases per 100,000 residents. This is higher than the state average of 452 cases per 100,000 residents. The homicide rate in Solano County in 2017 was 6.9 cases per 100,000 residents, and the statewide homicide rate for 2017 was 4.6 cases per 100,000 residents.²⁶

²² California Department of Justice, OpenJustice, openjustice.doj.ca.gov. Accessed May 1, 2018.

²³ Webster, D., Lee, S., Dawson, W., Magruder, J., Exel, M., Cuccaro-Alamin, S., Putnam-Hornstein, E., Wiegmann, W., Saika, G., Eyre, M., Chambers, J., Min, S., Randhawa, P., Sandoval, A., Yee, H., Tran, M., Benton, C., White, J., & Lee, H. (2018). CCWIP reports. Retrieved 5/18/2018, from University of California at Berkeley California Child Welfare Indicators Project website. URL: <http://cssr.berkeley.edu/ucb_childwelfare>

²⁴ WestEd, California Healthy Kids Survey. California Department of Education (Jul. 2017). As cited on kidsdata.org, a program of the Lucile Packard Foundation for Children's Health.

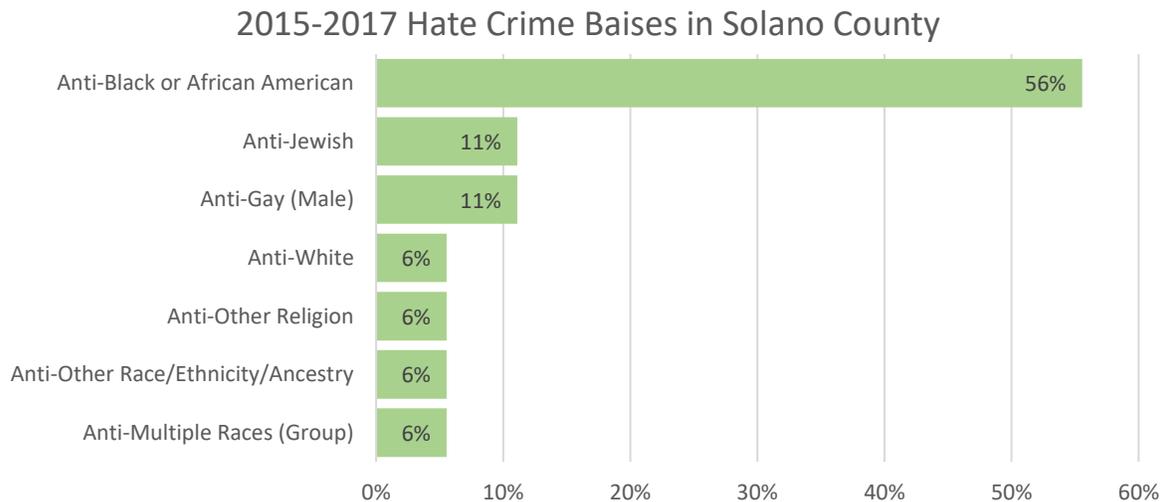
²⁵ Population Reference Bureau, analysis of data from the National Survey of Children's Health and the American Community Survey (Mar. 2018).

²⁶ Data provided by the California Department of Justice, OpenJustice, openjustice.doj.ca.gov, accessed July 10, 2018.

Hate Crime

From 2015 through 2017 there were 18 reported hate crimes in Solano County, with half (9) reported in 2017. Most were reported to have an Anti-Black or African American bias. The most commonly reported types of hate crime were destruction/damage/vandalism and intimidation.²⁷

Figure 15: Hate Crime Biases in Solano County



Social Capital

Disconnected youth is defined as teens and young adults ages 16 to 24 who are neither working nor in school. In Solano County, 15% of youth were considered disconnected in 2014. This is slightly higher than the California state average of 14%.²⁸

During the 2016 elections, there were 289,271 adults in Solano County who were eligible to register to vote and 224,930 (78%) of these had registered. Almost 76% of those registered actually voted in the 2016 election, which is slightly higher than the state average of 75%.²⁹

According to a social capital measure developed by Pennsylvania State, Solano County has a social capital index rating of -0.89, which falls into the lowest of six categories when ranked nationally. This measure includes an aggregate of the number of community organizations (including religious, civic, business, political, professional, labor, and several recreational organizations), voter turnout, Census

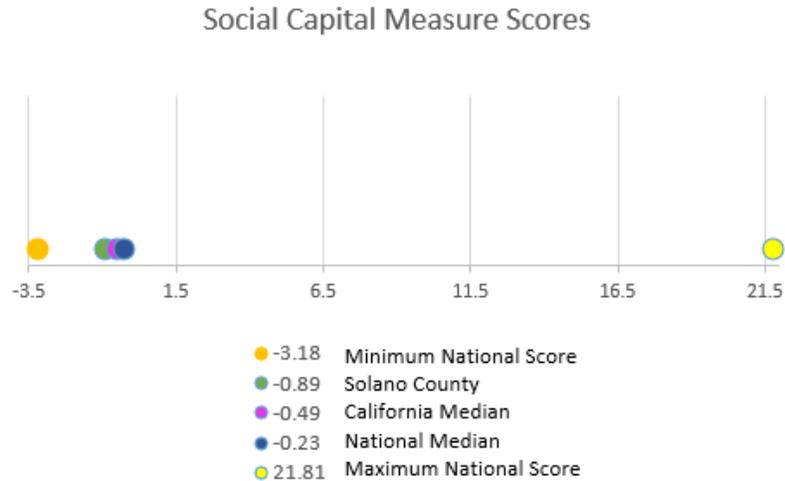
²⁷ Data provided by the California Department of Justice, OpenJustice, openjustice.doj.ca.gov, accessed July 10, 2018.

²⁸ U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

²⁹ California Secretary of State, Voter Participation Statistics by County, General Election November 8, 2016. Available at <http://www.sos.ca.gov/elections/prior-elections/statewide-election-results/general-election-november-8-2016/statement-vote/>

response rate, and the number of nonprofit entities without an international approach. The state median score of -0.49 is higher than that of Solano County, but below the national median of -0.23.³⁰

Figure 16: Social Capital Scores



Education Quality

Since 2014, California has been measuring the proficiency of students through the California Assessment of Student Performance and Progress (CAASPP) System. Students are tested in grades 3 through 8 and in 11th grade on Mathematics and English Language Arts/Literacy. In 2017, 44% of the County's students met or exceeded standards in English and 33% met or exceeded standards in Math. Both measures were slightly lower than the state average.

Test scores varied among school districts within the County with Benicia and Travis Unified scoring consistently higher than average and Dixon and Vallejo City Unified scoring consistently lower than average.

³⁰ Rupasingha, A., Goetz, S. J., & Freshwater, D. (2006, with updates). The production of social capital in US counties. *Journal of Socio-Economics*, 35, 83–101. doi:10.1016/j.socec.2005.11.001.

Figure 17: Students Meeting or Exceeding 11th Grade English Standards

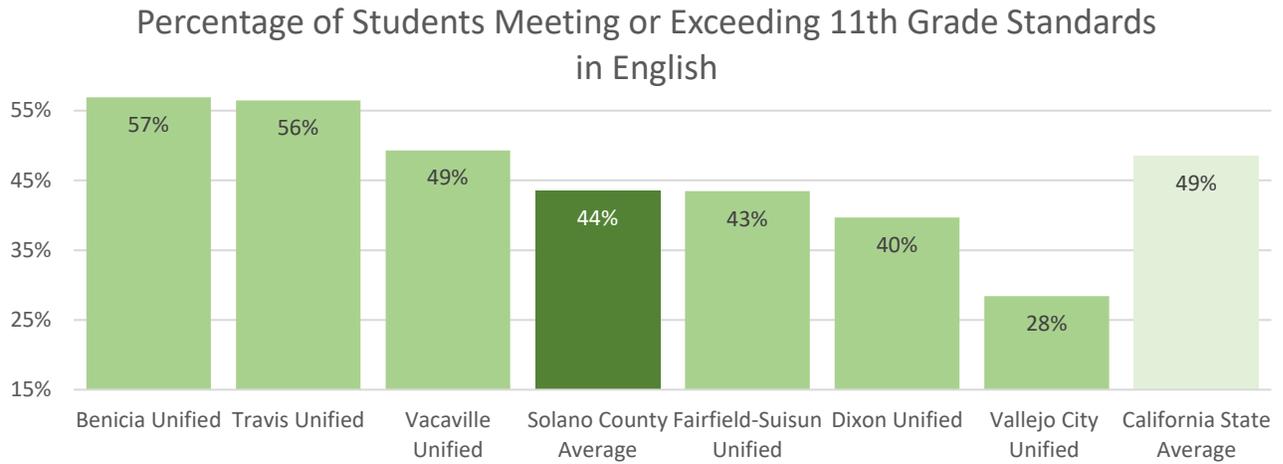
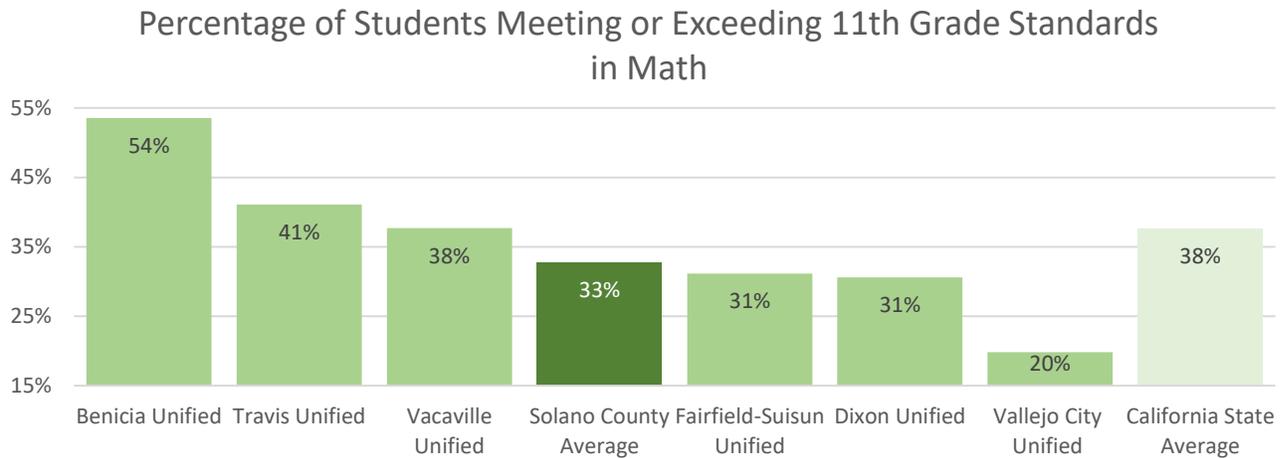


Figure 18: Students Meeting or Exceeding 11th Grade Math Standards

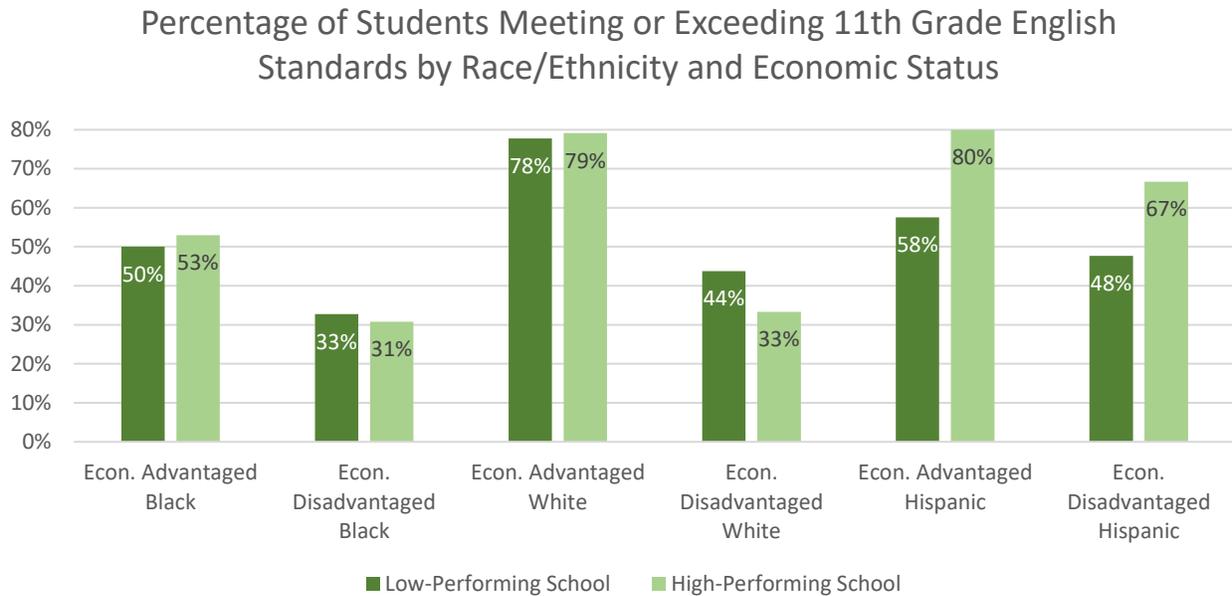


County-wide, students are more proficient in English than in Math, similar to the statewide averages.

In a comparison by economic status (advantaged vs disadvantaged) between a higher-performing high school and a lower-performing high school in the County, it appears the school of attendance has little influence for White and Black students. In contrast, Hispanic students appear to do significantly better at the higher performing school in comparison to the lower performing school. Economic status had a significant impact on scores across all races and ethnicities. These data should be interpreted with the caveat that only 2017 testing data were used, and the sample size is relatively small.³¹

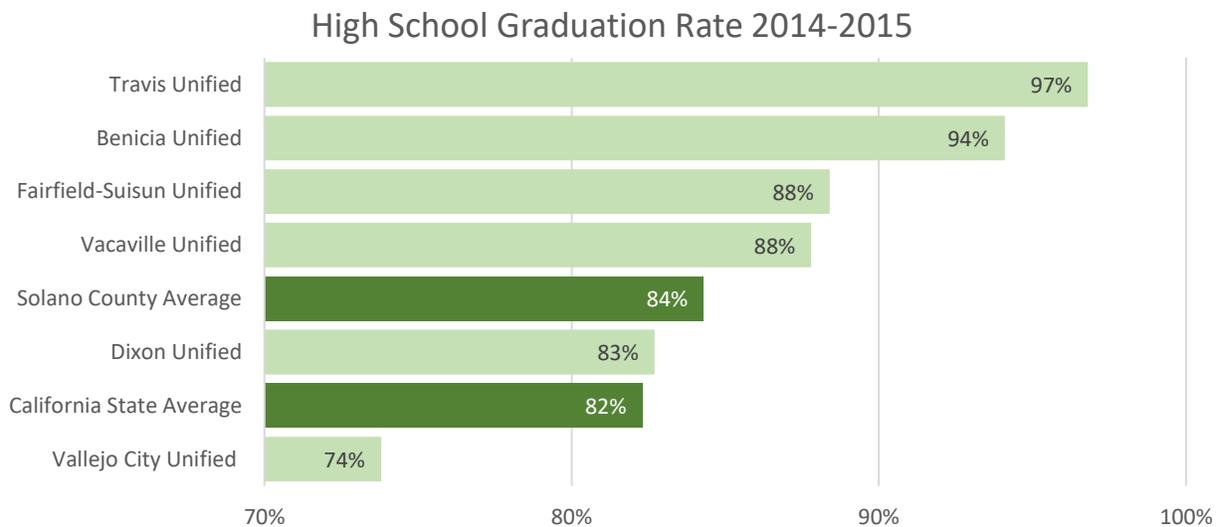
³¹California Department of Education. "California Assessment of Student Performance and Progress: Smarter Balanced Assessment Test Results." Available at <https://caaspp.cde.ca.gov/>

Figure 19: Percentage of Students Meeting or Exceeding 11th Grade English Standards by Race/Ethnicity and Economic Status



The High School graduation rates for 5 of the 6 school districts in the County are higher than the state average. Vallejo City Unified’s graduation rate is significantly lower than the other school districts and is also lower than the state average.³²

Figure 20: High School Graduation Rate



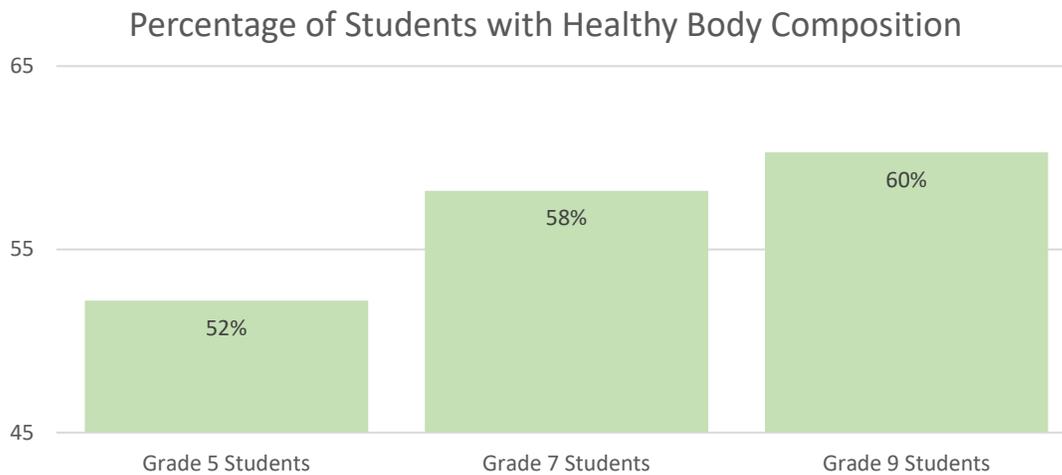
³² Data collected by the California Department of Education (CDE) through the California Longitudinal Pupil Achievement Data System (CALPADS).

Morbidity and Health Behaviors

Obesity

A majority of students in Solano County has a healthy body composition as defined by The Cooper Institute Fitness Gram that is used to measure physical standards in students.³³

Figure 21: Percentage of Students with Healthy Body Composition



Diabetes

In 2015, the Behavioral Risk Factor Surveillance System (BRFSS) survey asked adults if they had been diagnosed with diabetes, and the age-adjusted prevalence of adults with diabetes was 9% in Vacaville, 10% in Fairfield, and 11% in Vallejo.³⁴ In 2013, the county-wide prevalence of diabetes was 9.8%.³⁵

Hypertension

Over 37% of County residents report currently having high blood pressure or having had it in the past, which is higher than the state average of 28%. Of those with high blood pressure, 73% are currently taking medication to treat their hypertension.³⁶

³³California Department of Education. "2016-2017 California Physical Fitness Report." Available from <https://data1.cde.ca.gov/dataquest/>

³⁴Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. 500 Cities Project Data [online]. 2016 [accessed Jun 04, 2018]. URL: <https://www.cdc.gov/500cities>.

³⁵Centers for Disease Control and Prevention, Division of Diabetes Translation. Available at <https://www.cdc.gov/diabetes/data/county.html>

³⁶UCLA Center for Health Policy Research. AskCHIS 2016. Takes medicine for high blood pressure, and Ever diagnosed with high blood pressure (Solano County, California). Available at <http://ask.chis.ucla.edu>. Exported June 4, 2018.

Low Birth Weight

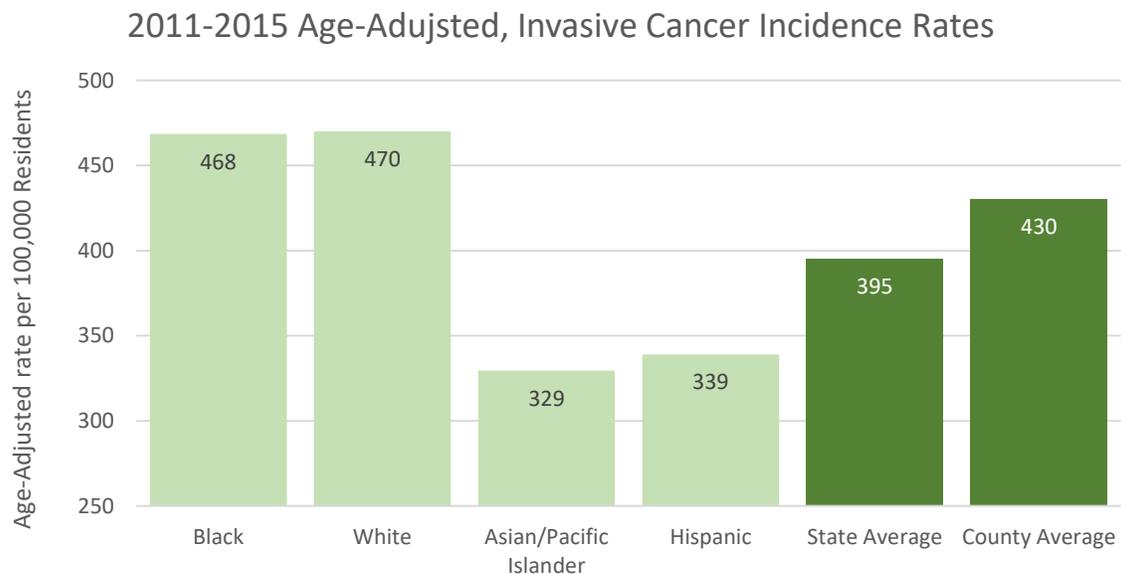
In 2017, 343 babies were born at a low birth rate (defined as less than 2,500 grams) in Solano County, representing 6.7% of births in the County. This is slightly lower than the state average of 6.9%.³⁷

Cancer Rates

According to data from the California Cancer Registry for 2010-2015, the age-adjusted, invasive cancer incidence rate for Solano County is 430.05 cases per 100,000 residents. This is higher than the state average rate of 395.22. The cancer mortality rate for this time period is much lower at 168.35 deaths per 100,000 residents for Solano County and 146.57 deaths per 100,000 residents for the state, but the rate for the County still exceeds the state average rate.

Females in Solano County have a lower incidence of invasive cancer at 407.38 cases per 100,000 women than males at 465.08 cases per 100,000 men. This cancer incidence for males is the seventh highest in the State. When broken down by race/ethnicity, Asian/Pacific Islanders and Hispanics have the lowest cancer incidence rates in the county with 329.38 and 338.93 cases per 100,000 residents, respectively. Black residents have an incidence rate of 468.48 cases per 100,000 residents and White residents have an incidence rate of 470.06 cases per 100,000 residents. Solano County has the third highest age-adjusted, invasive cancer incidence rate for White residents in the state.³⁸

Figure 22: 2011-2015 Age-Adjusted, Invasive Cancer Incidence Rates



³⁷ United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics, Natality public-use data 2007-2017, on CDC WONDER Online Database, October 2018. Accessed at <http://wonder.cdc.gov/natality-current.html> on Nov 14, 2018 3:10:11 PM

³⁸ Age-Adjusted Cancer Mortality Rates by County in California, 2010 - 2014. Based on Oct 2016 Extract. Cancer-Rates.info. Accessed on May 30, 2018. California Cancer Registry. <<http://cancer-rates.info/ca/>>

Motor Vehicle Injury

In 2017, there were 5,195 motor vehicle collisions in Solano County, resulting in 2,852 injured victims and 31 fatalities. Most of the collisions were caused by unsafe speed (35%), improper turning (21%), and driving or bicycling under the influence of alcohol or drugs (9%).³⁹

Physical Health and Sleeping

In 2015, County residents were asked if their physical health was not good for more than 14 days in the prior month, and 11% of Vacaville residents, 12% of Fairfield residents, and 13% of Vallejo residents reported that this was the case. Slightly more than a third of adults in these cities reported sleeping less than 7 hours per night on average.⁴⁰

Tuberculosis

In 2017, Solano County had a tuberculosis incidence rate of 5.9 cases per 100,000 residents. This was slightly higher than the statewide rate of 5.2 cases per 100,000 residents. There were 26 new cases reported in the County during 2017, representing a slight increase from the 24 cases reported in 2016. However, since 2008, the annual number of reported cases has decreased by over 26% for the County.⁴¹ Statewide, 80% of reported cases of tuberculosis were due to progression of latent tuberculosis infection (LTBI) to active tuberculosis, and it is estimated that over 2 million Californians are infected with LTBI.⁴²

Asthma

In Solano County in 2014, 19% of children ages 1-17 years and 19% of adults had been diagnosed with asthma. This is higher than the statewide rate of 15% for children and 14% for adults.⁴³ In 2015, about 9% of adults in the County reported currently having asthma, with a range of 8.8% in Vacaville to 9.1% in Fairfield. This is slightly higher than the national average of 8.7%.⁴⁴

Mental Health

According to data from the California Health Interview Survey in 2014, approximately 10% of adults in the County felt that their family life had been impaired during the prior 12 months due to a mental health issue. Almost 18% reported needing help for mental health problems, and almost 6% reported

³⁹ California Highway Patrol, CHP-SWITRS. Collisions and Victims by Motor Vehicle Involved with, 2017. Available at iswitrs.chp.ca.gov/

⁴⁰ Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. 500 Cities Project Data [online]. 2016 [accessed Jun 04, 2018]. URL: <https://www.cdc.gov/500cities>.

⁴¹ California Department of Public Health, Tuberculosis Control Branch. "California 2017 Provisional Data Tables." Available at <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/TB-Disease-Data.aspx>

⁴² California Department of Public Health, Tuberculosis Control Branch. "TB in California: 2017 Snapshot." Available at <https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/TBCB-TB-Fact-Sheet-2017.pdf>

⁴³ UCLA Center for Health Policy Research. AskCHIS 2014. Ever diagnosed with asthma (Solano County, California). Available at <http://ask.chis.ucla.edu>. Exported May 30, 2018.

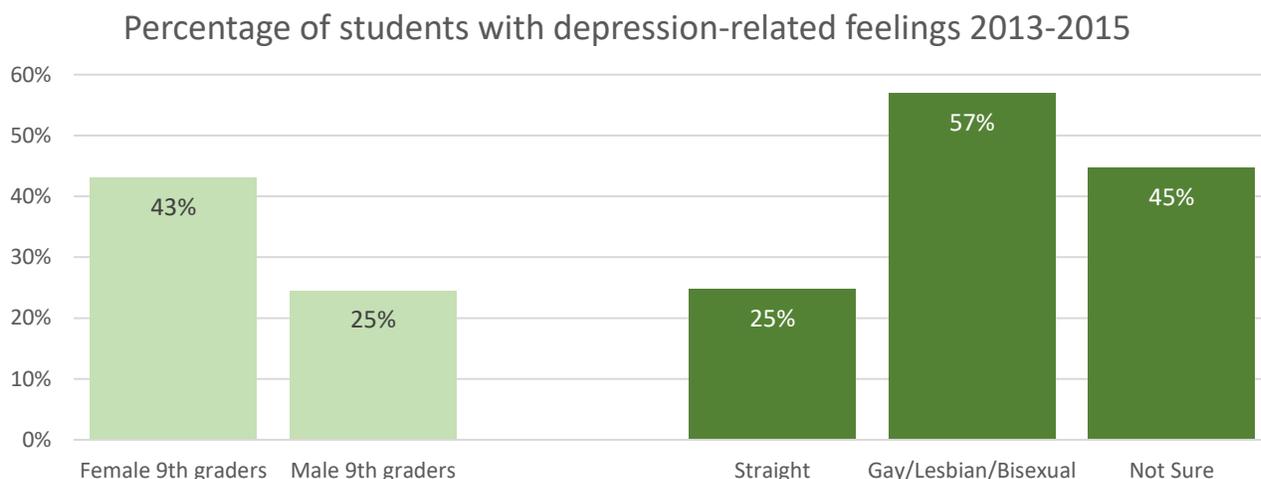
⁴⁴ Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. 500 Cities Project Data [online]. 2016 [accessed Jun 04, 2018]. URL: <https://www.cdc.gov/500cities>

experiencing serious psychological distress. Nearly 7% had experienced work impairment during the prior 12 months. Compared to statewide averages, Solano County had lower rates of family life and work impairment and serious psychological distress, but higher rates of needing help for mental health problems.⁴⁵

In 2015, 11.7% of Vacaville adults, 12% of Vallejo adults, and 12.1% of Fairfield adults reported that their mental health had not been good for 14 or more days during the prior month.⁴⁶

From 2013-2015, almost 34% of 9th grade students reported feeling sad or helpless almost every day for two weeks to the extent that it stopped them from doing some of their usual activities. About 26% of 7th graders and 24% of 11th graders felt the same way. These rates of depression-related feelings were higher in female students than male students and much higher in students across grades 7-11 who identified their sexual orientation as gay/lesbian/bisexual or not sure.

Figure 23: Percentage of Students with Depression-related feelings 2013-2015



During this same time period, 20% of 9th graders and 14% of 11th graders reported having suicidal ideations. This was, again, higher for female students and for students who identified their sexual orientation as gay/lesbian/bisexual or not sure.⁴⁷

The rate of suicidal ideation in adults was much lower, at 12% in 2016. Among adults, the rate of suicidal ideation was much higher in men (16%) than women (8%).⁴⁸

⁴⁵ UCLA Center for Health Policy Research. AskCHIS 2014. Mental Health (Solano County, California). Available at <http://ask.chis.ucla.edu>. Exported May 30, 2018.

⁴⁶ Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. 500 Cities Project Data [online]. 2016 [accessed Jun 04, 2018]. URL: <https://www.cdc.gov/500cities>

⁴⁷ WestEd, California Healthy Kids Survey. California Department of Education (Jul. 2017).

⁴⁸ UCLA Center for Health Policy Research. AskCHIS 2016. Ever seriously thought about committing suicide (Solano County, California). Available at <http://ask.chis.ucla.edu>. Exported June 4, 2018.

Tobacco Use/Smoking

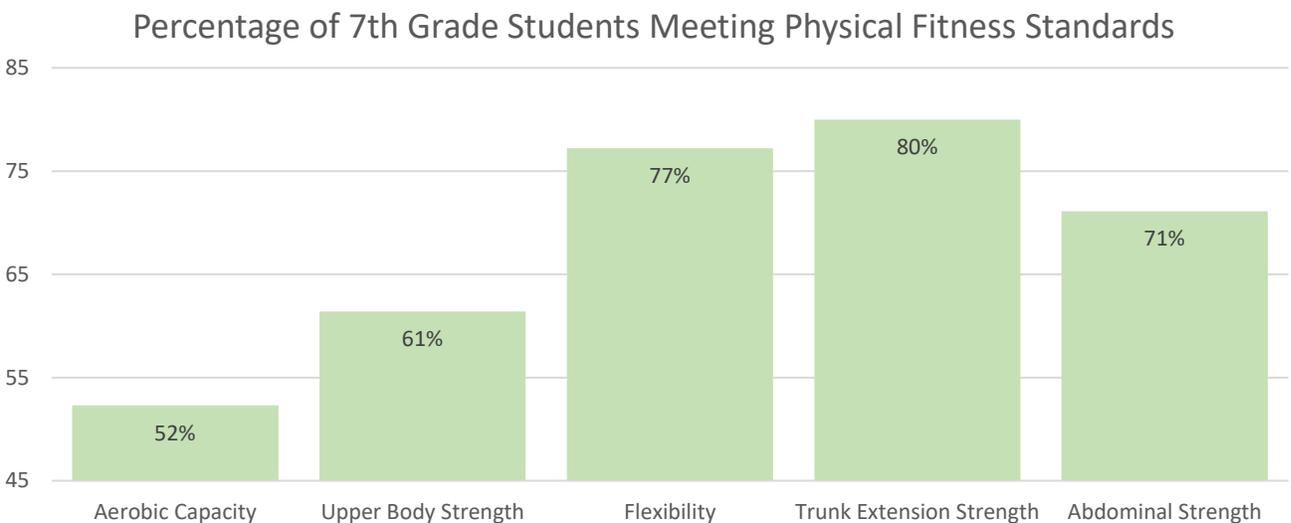
In 2016, 15% of Solano County adults were current smokers, which was higher than the statewide average of 12%. More men (18%) than women (12%) reported smoking in the County.⁴⁹

Physical Activity

In 2015, approximately 21%, 20%, and 23% of adults in Fairfield, Vacaville, and Vallejo, respectively, reported having no physical activity outside of work.⁵⁰

Physical Fitness tests are administered to all students in 5th, 7th, and 9th grades. The chart below shows that most 7th grade students met physical fitness standards when tested in 2016-2017.⁵¹

Figure 24: Percentage of 7th Grade Students Meeting Physical Fitness Standards



Alcohol Use

In 2015, adults were surveyed to ask if they had engaged in binge drinking, defined as 4 or more drinks for women and 5 or more drinks for men in one occasion, in the past 30 days. About 16% of Vallejo adults, 18% of Fairfield adults, and 20% of Vacaville adults reported engaging in binge drinking in the prior month. The national average during this time was 17%.⁵²

⁴⁹ UCLA Center for Health Policy Research. AskCHIS 2014. Current Smoking Status Adults (Solano County, California). Available at <http://ask.chis.ucla.edu>. Exported June 4, 2018.

⁵⁰ Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. 500 Cities Project Data [online]. 2016 [accessed Jun 04, 2018]. URL: <https://www.cdc.gov/500cities>

⁵¹ California Department of Education. "2016-2017 California Physical Fitness Report." Available from <https://data1.cde.ca.gov/dataquest/>

⁵² Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. 500 Cities Project Data [online]. 2016 [accessed Jun 04, 2018]. URL: <https://www.cdc.gov/500cities>

From 2013-2015, almost 24% of 11th grade students reported using any alcohol in the prior month with 12% of students reporting binge drinking (defined as 5 or more drinks within a couple of hours) in the prior month. Almost 43% of 11th graders reported having ever consumed alcohol.⁵³

Seatbelt Use

In 2012, 96% of California's drivers and front seat passengers were observed to be wearing seatbelts.⁵⁴

Immunization and Screenings

For the 2016-2017 school year, 96% of kindergartners were up-to-date on their vaccinations (note that this only includes schools with a kindergarten enrollment of more than 20 students). Private and smaller schools whose student count data were not publicly released generally had greater than 95% of kindergartners current on their immunizations and many had compliance rates of over 98%. For the 2016-2017 school year, kindergartners were required to have four doses of polio vaccine, five DTap/DTP/DT vaccine doses, two doses of vaccine for measles (including at least one that is a combination of measles, mumps, and rubella), three hepatitis B vaccines, and one dose of varicella or physician-documented incidence of varicella disease.⁵⁵

In 2014, women aged 65 years or older were asked if they were up-to-date on the following clinical preventive services: a flu shot in the past year, a PPV shot (pneumococcal vaccine) ever, and colorectal screening and a mammogram in the past 2 years. Approximately 27% of Vallejo senior women, 28% of Fairfield senior women, and 31% of Vacaville senior women were current on these preventive measures. Similarly, men aged 65 years and older were asked if they were current on a flu shot in the past year, a PPV shot ever, and a colorectal cancer screening. Slightly fewer men were current, with 25% of Vallejo senior men, 27% of Fairfield senior men, and 29% of Vacaville senior men reporting being current with these measures.⁵⁶

Unsafe Sex and STDs/AIDS

In 2016, most Solano County adults reporting having either one (64%) or no sexual partners (21%) in the past year. About 7% reported having 5 or more partners in the past year.⁵⁷

According to a review of internal data, the combined rate of infection for Syphilis, Gonorrhea, and Chlamydia was 775.2 cases per 100,000 residents in Solano County in 2017.⁵⁸

⁵³ WestEd, California Healthy Kids Survey. California Department of Education (Jul. 2017).

⁵⁴ State Observational Survey of Seat Belt Use, 2012.

⁵⁵ California Department of Public Health. "2016-2017 Immunization Status of Kindergarten Students, California." Available at <http://www.shotsforschool.org/k-12/reporting-data/>

⁵⁶ Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. 500 Cities Project Data [online]. 2016 [accessed Jun 04, 2018]. URL: <https://www.cdc.gov/500cities>.

⁵⁷ UCLA Center for Health Policy Research. AskCHIS 2016. Number of sexual partners in the last 12 months (Solano County, California). Available at <http://ask.chis.ucla.edu>. Exported June 4, 2018.

⁵⁸ This data has not been published, but can be accessed by contacting Solano Public Health Epidemiology at solanoepi@solanocounty.com

In California, the rate of HIV diagnosis is 15.2 cases per 100,000 people per year.⁵⁹ In Solano County in 2014, 97% of residents reported having ever been tested for HIV.⁶⁰

Physical Environment

Gentrification and Displacement

According to work done by the Urban Displacement Project with data from 2013, two census tracts in Solano County have experienced advanced gentrification. Five census tracts have ongoing gentrification and displacement and an additional 15 census tracts are at risk of gentrification and displacement. Seven census tracts have ongoing exclusion/displacement and four are at risk of exclusion.

Displacement occurs when lower-income residents are forced to move due to evictions and rising rent costs. This has been linked to a myriad of detrimental health effects and is very disruptive, particularly for children enrolled in schools. Gentrification is the process of neighborhood change where new investment and higher-income residents move into a neighborhood. This often drives displacement and causes demographic changes.⁶¹

Through our work with local communities we suspect that the trends seen in 2013 have intensified in the years since. The pricing of rental housing in Vallejo over the past seven years is displayed in the graph below and reflects the overall trend of rising rent prices seen throughout the County.⁶²

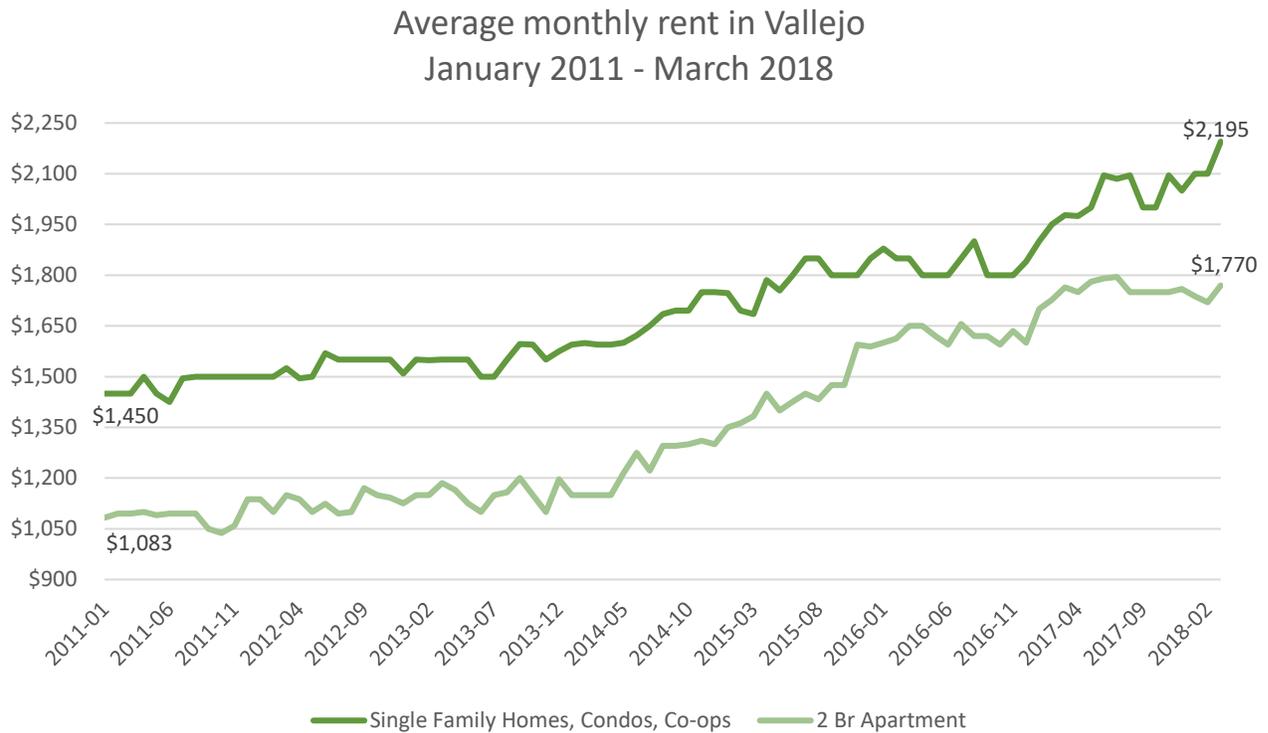
⁵⁹ Centers for Disease Control and Prevention. HIV in the United States by Geography. November 2017. Available at <https://www.cdc.gov/hiv/pdf/statistics/cdc-hiv-geographic-distribution.pdf>

⁶⁰ UCLA Center for Health Policy Research. AskCHIS 2016. Ever tested for HIV (Solano County, California). Available at <http://ask.chis.ucla.edu>. Exported June 4, 2018.

⁶¹ Zuk, M., & Chapple, K. (2015). Urban Displacement Project

⁶² Zillow Research. Data 2011-2018. Average Rent in Vallejo, CA. Available at <https://www.zillow.com/research/data>. Exported on [May 1, 2018].

Figure 25: Average Monthly Rent in Vallejo



Housing

From 2010-2014, 23% of households in the County were defined as having severe housing problems. To fall into this category, at least one of the following criteria must be met:

- overcrowding (more than 1.5 resident per room),
- severe cost burden (more than 50% of household income is spent on rent/mortgage, utilities, real estate taxes, association fees, and insurance),
- lack of kitchen facilities,
- or lack of plumbing.

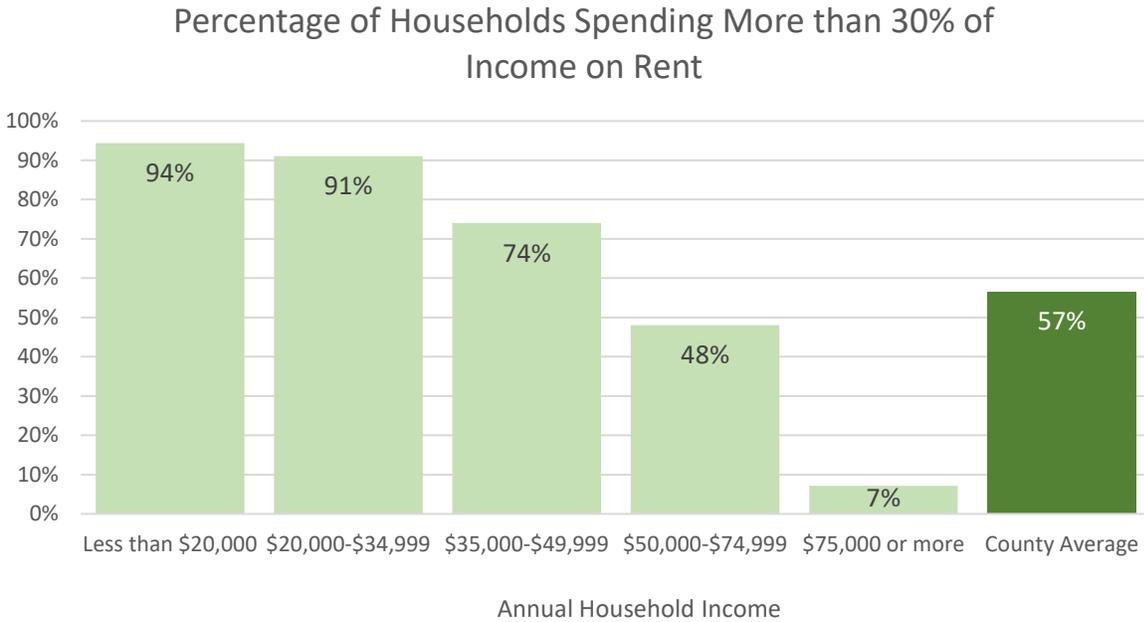
Almost 19% of all County households and 27% of renter households reported spending more than 50% of their income on housing during this time.⁶³ The estimated median monthly housing cost for the County in 2016 was \$1,485.

In 2016, approximately 41% of the County's housing was renter-occupied. Most renters (57%) spend over 30% of their household income on rent, and this very common for households with less than \$50,000 in income.⁶⁴

⁶³ U.S. Department of Housing and Urban Development. "Comprehensive Housing Affordability Strategy." 2006-2014. Available at <https://www.huduser.gov/portal/datasets/cp.html>

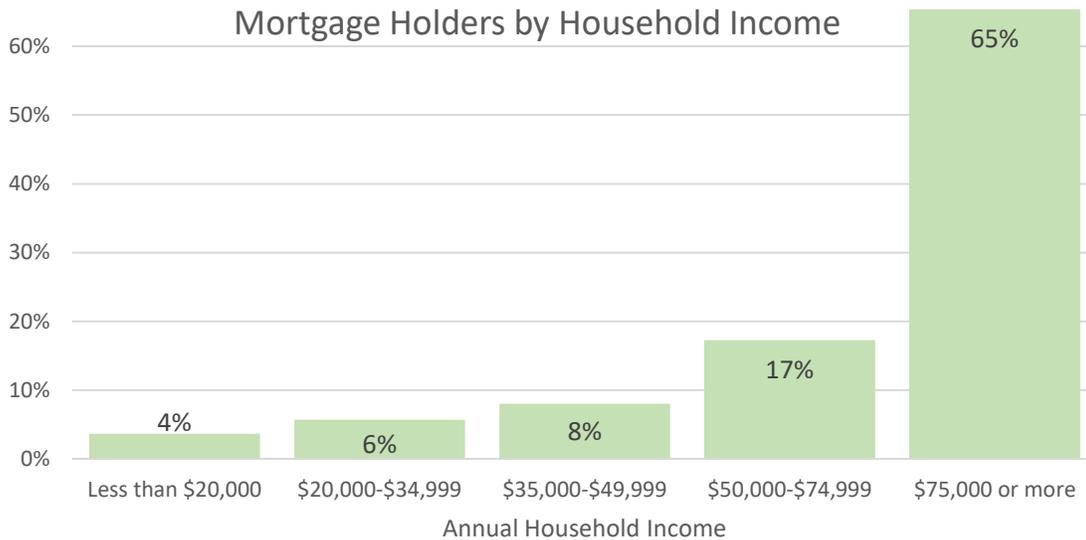
⁶⁴ U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Figure 26: Percentage of Households Spending More than 30% of Income on Rent



In 2010, the rental vacancy rate was 7.7% and the homeowner vacancy rate was 2.5%. Almost all mortgage holders live in households earning over \$75,000.⁶⁵

Figure 27: Mortgage Holders by Household Income



⁶⁵ U.S. Census Bureau, 2010 Census.

Air Quality

In 2016 there were 2 days in the County when Ozone levels exceeded the state and national 8-hour standards. There were no days when Particulate Matter (PM2.5) levels exceeded standards.⁶⁶

Water Quality

Municipalities are required to report water quality data to the public that they serve. The table below shows a collection of data from the major municipal water sources in Solano County. Contaminants tested varied by municipality; the most commonly tested contaminants are displayed below. A dash indicates that a contaminant was not tested for or was tested using a non-standard test that made results incomparable to the other municipalities. Not all of the contaminants listed are regulated or required to be reported.

Table 4: Water Quality Testing Results by City

Contaminant	Maximum Contaminant Level Allowed	Rio Vista	Suisun City	Benicia	Vacaville	Dixon	Vallejo	Fairfield
		2016	2016	2017	2016	2016	2017	2016
Copper	1.3	0.06	0.11	0.11	0.2	0.2	0	0.197
Lead	15	-	0	1.6	2.5	4.9	0	5
Sodium	N/A	148	19	24	17	53.6	24	22.4
Aluminum	1	0.11	-	0	0	-	-	0.049
Arsenic	10	9	-	0	0	-	-	0.004
Total Trihalomethanes	80	10.8	87	67	51	1.34	70	45
Hexavalent Chromium	10	1.36	-	0	1.3*	17.83	-	-
Fluoride	2	0.4	0.12	0.8	0.73	-	0.7	1
Nitrogen	10	1.3	-	-	0	3.52	-	-
Sulfate	500	38.5	31	56	21	34	31	34.1
Turbidity	5	0.4	0.18	0.04	0.2	-	0.3	0.074
Coliform Bacteria	1	-	0	0	0	0	0.6	-

*5 wells tested over the limit at 10-22ppm for hexavalent chromium

All of the major water systems in the County are providing water that meets federal water quality standards, however, the state of California has lower acceptable limits on several contaminants. Suisun City water tested high in total trihalomethanes, a group of chemicals that form as a byproduct of chlorination and are known carcinogens.⁶⁷ Vacaville and Dixon both had high levels of hexavalent chromium, which is also a carcinogen.⁶⁸ The 10ppb limit on hexavalent chromium was established by

⁶⁶ California Air Resources Board. National Ozone Statistics in Solano County (2016). Available at <http://www.arb.ca.gov/adam>. Accessed on 5/1/2018

⁶⁷ Hood E. Tap Water and Trihalomethanes: Flow of Concerns Continues. Environmental Health Perspectives. 2005;113(7):A474.

⁶⁸ National Institute of Environmental Health Sciences, National Toxicology Program. "Hexavalent Chromium." Available at https://www.niehs.nih.gov/health/materials/hexavalent_chromium_508.pdf

the California State Water Board in 2014, and cities have until January 1, 2020 to become compliant with this new standard.⁶⁹

The information above only covers County residents who are served by the city utilities displayed in the table. Residents who get their water from other sources, such as wells, are not included in these data and may have differing levels of water quality.

Food Access & Nutrition

According to 2015 United States Department of Agriculture (USDA) data, 12,667 households in the County received Supplemental Nutrition Assistance Program (SNAP) benefits. Of the 96 census tracts in the County, 36 (38%) were classified as having low food access – defined as the lack of a grocery store in a 1-mile radius in urban areas and a 10-mile radius in rural areas. Six of these census tracts, representing 18,730 residents, were both low income and low access.⁷⁰

In 2016, 51% of County residents reported that they were not able to afford enough food.⁷¹

The Food Bank of Contra Costa & Solano serves residents of both Solano County and Contra Costa County. In 2016-2017, the food bank served 1 in 8 members of the community every month – approximately 182,000 people.⁷²

Transportation

In 2015, approximately 8,200 households in Solano County did not have access to a vehicle.⁷³ In 2016, almost 77% of workers in the County commuted alone in a personal vehicle and less than 3% used public transportation to get to work.⁷⁴

Greenspace Access

Approximately 88% of County residents live within ½ mile of a park, beach, open space, or coastline. White residents, on average, have the least amount of access to greenspace, with 84% of White residents residing within ½ mile. Other races and African Americans have the highest rates of access, with 93% and 92% respectively.⁷⁵

⁶⁹ 2016 City of Vacaville Water Quality Report to Consumers

⁷⁰ Economic Research Service (ERS), U.S. Department of Agriculture (USDA). Food Access Research Atlas, <https://www.ers.usda.gov/data-products/food-access-research-atlas/>

⁷¹ UCLA Center for Health Policy Research. AskCHIS 2016. Food security (Solano County, California). Available at <http://ask.chis.ucla.edu>. Exported June 4, 2018.

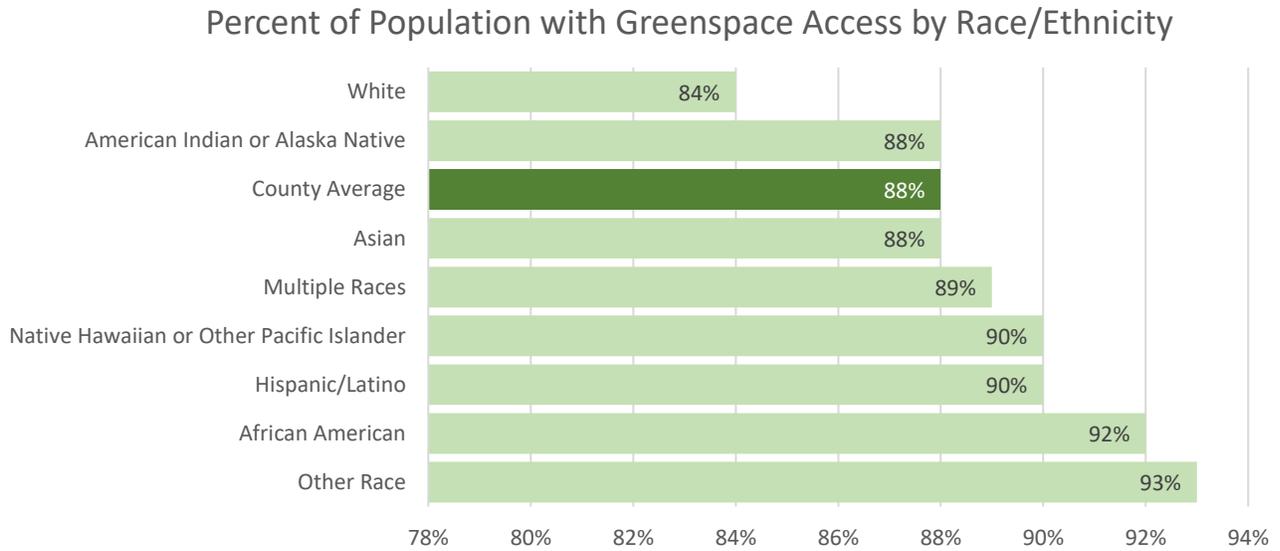
⁷² Food Bank of Contra Costa & Solano. “2016-2017 Impact Report.” Available at <https://www.foodbankccs.org/about/financials.html>

⁷³ Economic Research Service (ERS), U.S. Department of Agriculture (USDA). Food Access Research Atlas, <https://www.ers.usda.gov/data-products/food-access-research-atlas/>

⁷⁴ U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

⁷⁵ Healthy Communities Data and Indicators Project, CDPH. 2017. Access to Parks. Available at <https://data.chhs.ca.gov/dataset/park-beach-open-space-or-coastline-access>. Accessed on 5/1/2018

Figure 28: Percentage of Population with Greenspace Access by Race/Ethnicity



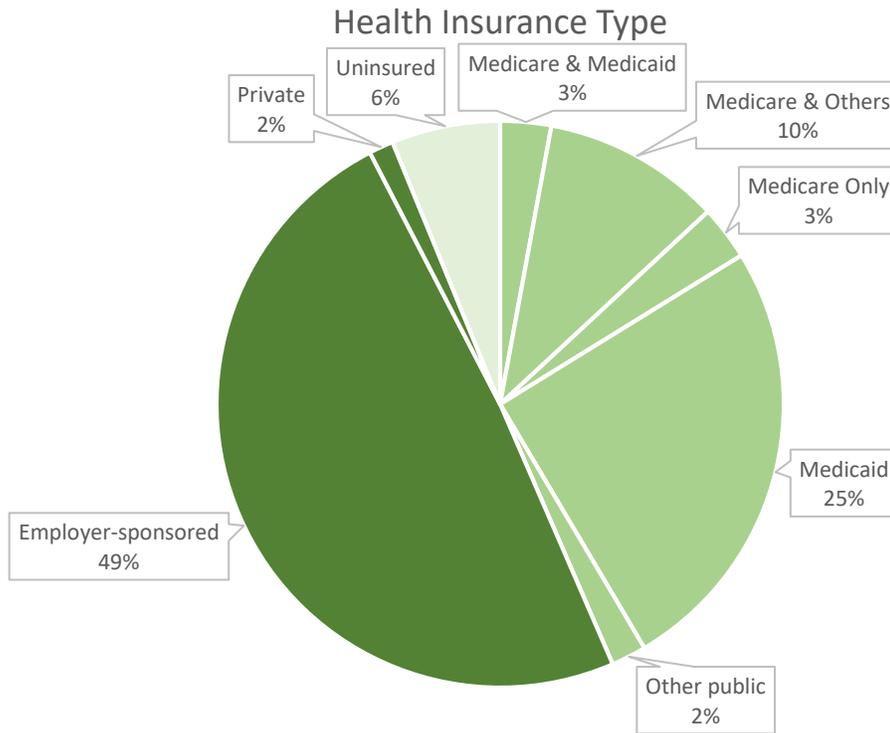
Health Care Access & Quality

Health Insurance Coverage

Overall, almost 94% of County residents have some type of health insurance; 49% of residents have employer-sponsored insurances, 1.4% have privately purchased insurance, and the rest are enrolled in Medicare, MediCal, or other public insurance options (44%). For those who are uninsured, 74% reported cost as the reason why they did not have coverage.⁷⁶

⁷⁶ UCLA Center for Health Policy Research. AskCHIS 2016. Type of current health insurance coverage, and Main reason for currently uninsured status (Solano County, California). Available at <http://ask.chis.ucla.edu>. Exported June 4, 2018.

Figure 29: Health Insurance Type



As of January 2018, approximately 75,800 residents of Solano County were enrolled in Medicare. Just over 43,000 (57%) were enrolled in original Medicare and almost 32,000 (43%) were enrolled in Medicare Advantage and other health plans. Approximately 52,600 Medicare members (69%) were enrolled in a prescription drug plan, 60% of whom were enrolled in the Medicare Advantage prescription drug plan.⁷⁷

Approximately 63% of County adults reported having dental insurance in 2016, which is slightly higher than the state average of 61%.⁷⁸

Health Care Access

In 2016, about 84% of County residents reported being able to get a doctor’s appointment within 2 days most of the time (defined as either always or usually).⁷⁹

⁷⁷ Centers for Medicare & Medicaid Services. “Medicare Enrollment Dashboard.” Available at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/CMSProgramStatistics/Dashboard.html>

⁷⁸ UCLA Center for Health Policy Research. AskCHIS 2016. Dental Insurance - Adult (Solano County, California). Available at <http://ask.chis.ucla.edu>. Exported June 4, 2018.

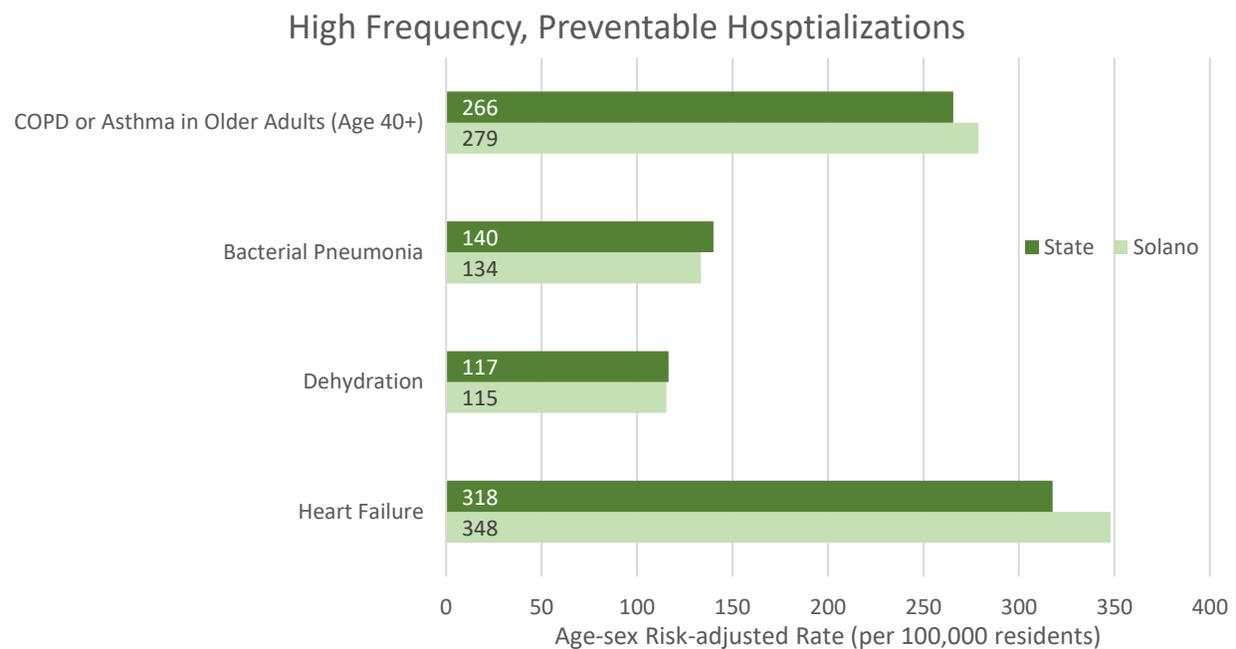
⁷⁹ UCLA Center for Health Policy Research. AskCHIS 2016. How often able to get doctor appointment within 2 days in past 12 months (Solano County, California). Available at <http://ask.chis.ucla.edu>. Exported June 4, 2018.

In 2016, 46% of County residents reported forgoing needed medical care, and 7% of County residents reported not getting needed prescription medications in the prior 12 months.⁸⁰ The most commonly reported reasons for delaying or forgoing needed medical care were personal reasons (54%), followed by cost, lack of insurance, or other insurance-related reason (33%), and healthcare system/provider issues and barriers (13%).⁸¹

Preventable Hospitalizations

The California Office of Statewide Health Planning and Development (OSHPD) collects data on hospitalizations for 12 conditions that are potentially preventable by accessing high-quality outpatient care. For the four highest-frequency conditions (heart failure, dehydration, bacterial pneumonia, and COPD or asthma in older adults), Solano County has higher than statewide average rates of hospitalizations for heart failure and COPD/asthma in older adults.

Figure 30: High Frequency, Preventable Hospitalizations



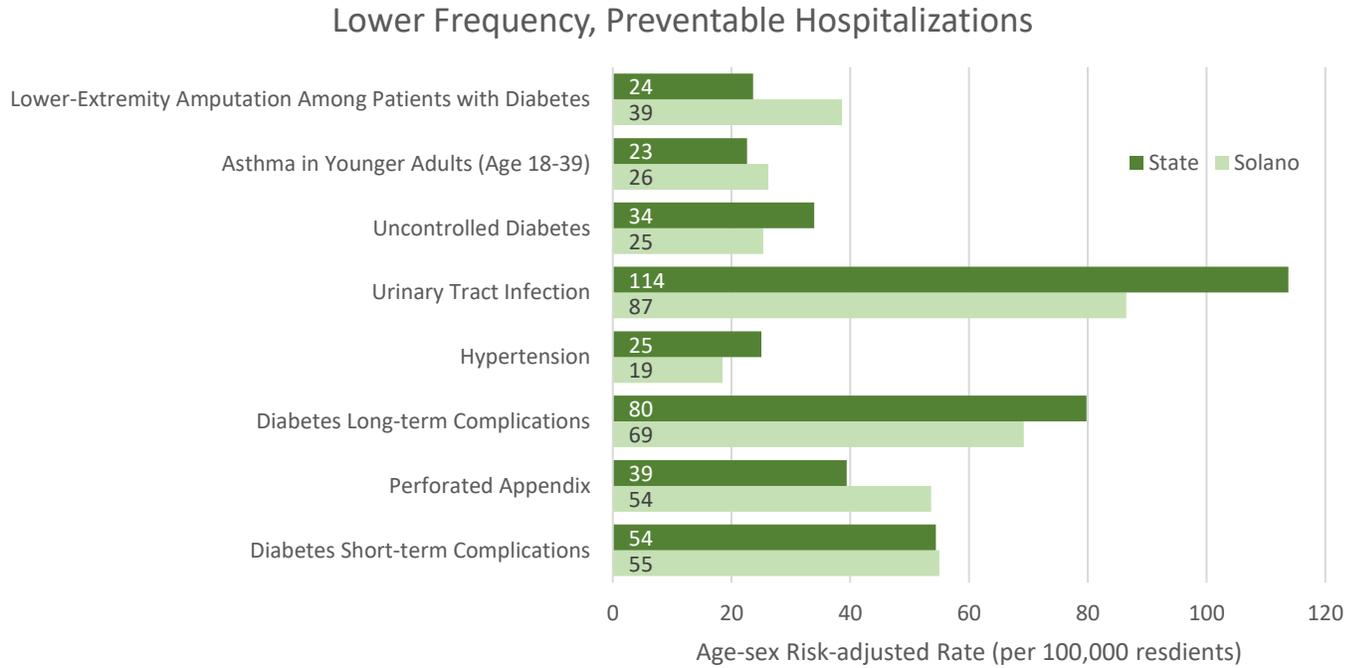
There are 8 lower frequency causes of preventable hospitalizations. Solano County has fewer than statewide average hospitalizations for long-term complications of diabetes, hypertension, urinary tract infections, and uncontrolled diabetes. Solano County has higher than statewide average rates of

⁸⁰ UCLA Center for Health Policy Research. AskCHIS 2016. Delayed or didn't get prescription medications, and Had to forgo needed medical care (Solano County, California). Available at <http://ask.chis.ucla.edu>. Exported June 4, 2018.

⁸¹ UCLA Center for Health Policy Research. AskCHIS 2016. Main reason delayed or had forgone needed medical care (Solano County, California). Available at <http://ask.chis.ucla.edu>. Exported June 4, 2018.

hospitalizations for perforated appendix, asthma in younger adults, and lower-extremity amputations in diabetic patients.⁸²

Figure 31: Lower Frequency, Preventable Hospitalizations



⁸² Office of Statewide Health Planning and Development. "Rates of Preventable Hospitalizations for Selected Medical Conditions by County, 2005-2015Q3."