Sutter Davis Hospital

2016 Community Health Needs Assessment

Acknowledgements

This report was prepared by Valley Vision on behalf of Sutter Davis Hospital and the Sacramento Region Community Health Needs Assessment (CHNA) Collaborative. Through the course of the CHNA project, many organizations and individuals contributed input on the health issues and conditions impacting their communities or the communities they serve. We gratefully acknowledge the contributions of these participants, many of whom shared deeply personal challenges and experiences with us. We hope that the contents of this report serve to accurately represent their voices.

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EXECUTIVE SUMMARY

Community Health Needs Assessment (CHNA) Background/Purpose Statement

The purpose of this Community Health Needs Assessment (CHNA) is to identify and prioritize significant health needs of the community served by Sutter Davis Hospital (SDH). The priorities identified in this report help to guide the hospital's community health improvement programs and community benefit activities, as well as its collaborative efforts with other organizations that share a mission to improve health. This CHNA report meets requirements of the Patient Protection and Affordable Care Act and California Senate Bill 697 that not-for-profit hospitals conduct a community health needs assessment at least once every three years.

This report documents the processes, methods, and findings of the CHNA conducted in partnership with Sutter Davis Hospital, located at 2000 Sutter Pl, Davis, CA 95616. Building on federal and state requirements, the objective of the 2016 CHNA was:

> *To identify and prioritize community health needs and identify resources available to address those health needs, with the goal of improving the health status of the community at large and for specific locations and/or populations experiencing health disparities.*

Community Definition

The Sutter Davis hospital service area (HSA) is comprised of 17 ZIP codes in Yolo, Solano and Sutter counties, California. The community or hospital service area (HSA) is defined as the geographic area (by ZIP code) in which the hospital receives its top 80% of discharges.

Assessment Process and Methods

The CHNA was completed as a collaboration of the four major health systems in the Greater Sacramento region: Dignity Health, Kaiser Permanente, Sutter Health and UC Davis Health System. Together, the CHNA Collaborative represented 15 hospitals in the Sacramento Region. The CHNA Collaborative project was conducted over a period of eighteen months, beginning in January 2015 and concluding in June 2016.

The following research questions were used to guide the 2016 CHNA:

1. What is the community or hospital service area (HSA) served by each hospital in the CHNA Collaborative?
2. What specific geographic locations within the community are experiencing social inequities that may result in health disparities?
3. What is the health status of the community at large as well as of particular locations or populations experiencing health disparities?
4. What factors are driving the health of the community?
5. What are the significant and prioritized health needs of the community and requisites for the improvement or maintenance of health status?
6. What are the potential resources available in the community to address the significant health needs?

To meet the project objectives, a defined set of data collection and analytic stages were developed. Data collected and analyzed included both primary or qualitative data, and secondary or quantitative data. To determine geographic locations affected by social inequities, data were compiled and analyzed at the census tract and ZIP code levels as well as mapped by GIS systems. From this analysis as well as an initial preview of the primary data, Focus Communities were identified within the HSA. These were

defined as geographic areas (ZIP codes) within the HSA that had the greatest concentration of social inequities that may result in poor health outcomes. Focus Communities were important to the overall CHNA methodology because they allowed for a place-based lens with which to consider health disparities in the HSA.

To assess overall health status and disparities in health outcomes, indicators were developed from a variety of secondary data sources (see Appendix B). These "downstream" health outcome indicators included measures of both mortality and morbidity such as mortality rates, emergency department visits and hospitalization rates. They also included risk behaviors such as smoking, poor nutrition and physical activity. Health drivers/conditions or "upstream" health indicators included measures of living conditions spanning the physical environment, social environment, economic and work environment, and service environment. This also included the indicators on social inequities that were used for the determination of Focus Communities. Overall, more than 170 indicators were included in the CHNA.

Community input and primary data on health needs were obtained via interviews with service providers and community key informants and through focus groups with medically underserved, low-income, and minority populations. Transcripts and notes from interviews and focus groups were analyzed to look for themes and to determine if a health need was identified as significant and/or a priority to address. Primary data for Sutter Davis included 16 key informant interviews with 20 participants and six focus groups conducted with 69 participants including community members and service providers. A complete list of key informant interview data sources is available in Appendix F and a complete list of focus group data is available in Appendix G.

Process and Criteria to Identify and Prioritize Significant Health Needs

In order to identify and prioritize the significant health needs, the quantitative and qualitative data were synthesized and analyzed according to established criteria outlined later in this report. This included identifying eight potential health need categories based upon the needs identified in the previously conducted CHNA, the grouping of indicators in the Kaiser Permanente Community Commons Data Platform (CCDP), and a preliminary review of primary data. Indicators within these categories were flagged if they compared unfavorably to state benchmarks or demonstrated racial/ethnic disparities according to a set of established criteria. Eight potential health needs were validated as significant health needs for the service area. The data supporting the identified significant health needs can be found in the Prioritized Description of Significant Health Needs section of this report. The resources available to address the significant health needs span several counties and were compiled by using the resources listed in the 2013 CHNA report as a foundation and then verifying and expanding these resources to include those referenced through community input. Additional information regarding resources is found in the Resources section and a comprehensive list of potential resources to address health needs is located in Appendix H.

List of Prioritized Significant Health Needs

The following is a list of eight significant health needs for the Sutter Davis HSA in prioritized order:

1. Active Living and Healthy Eating

This category includes all components of healthy eating and active living including health behaviors (e.g. fruit and vegetable consumption), associated health outcomes (e.g. diabetes) and aspects of the physical environment/living conditions (e.g. food deserts). This category does not include food security, which is a component of the Basic Needs category.

2. Access to Behavioral Health Services

This category encompasses access to mental health and substance abuse prevention and treatment services, including tobacco education, prevention and cessation services, mental health services, social engagement opportunities for youth and seniors, and suicide prevention. This category also includes health behaviors (e.g. substance abuse), associated health outcomes (e.g. COPD) and aspects of the social and physical environment (e.g. social support and access to liquor stores).

3. Disease Prevention and Management

This category encompasses health outcomes that require disease prevention and/or management and treatment including: cancer (breast, cervical, colorectal, lung and prostate), cardiovascular disease/stroke (heart disease, hypertension and renal disease) and HIV/AIDS/STIs (chlamydia and gonorrhea) and asthma. This category also includes health behaviors that are associated with chronic and communicable disease (e.g., fruit/vegetable consumption, screening), health outcomes that are associated with these diseases or conditions (e.g. overweight/obesity), and associated aspects of the physical environment (e.g. food deserts).

4. Safe, Crime and Violence Free Communities

This category includes safety from violence and crime including violent crime, property crimes and domestic violence. This category includes health behaviors (e.g. assault), associated health outcomes (e.g. mortality - homicide) and aspects of the physical environment (e.g. access to liquor stores). In addition, this category includes factors associated with unsafe communities such as substance abuse and lack of physical activity opportunities, and unintentional injury such as motor vehicle accidents.

5. Access to High Quality Health Care and Services

This category encompasses access to primary and specialty care, dental care and maternal and infant care. Additionally, this category includes health education and literacy, continuity of care, care coordination and patient navigation including linguistically and culturally competent services. This category also includes health behaviors that are associated with access to care (e.g. cancer screening), health outcomes that are associated with access to care/lack of access to care (e.g. low birth weight) and aspects of the service environment (e.g. health professional shortage area). This category does not include access to mental health providers, which is a component of the Access to Behavioral Health Services category.

6. Basic Needs (Food Security, Housing, Economic Security, Education)
This category encompasses economic security (income, employment and benefits), food security/insecurity, housing (affordable housing, substandard housing), education (reading proficiency, high school graduation rates) and homelessness.

7. Affordable and Accessible Transportation
This category includes the need for public or personal transportation options, transportation to health services and options for persons with disabilities.

8. Pollution-Free Living and Work Environments
This category includes measures of pollution such as air and water pollution levels. This category includes health behaviors associated with pollution in communities (e.g. physical inactivity), associated health outcomes (e.g. COPD) and aspects of the physical environment (e.g. road network density). In addition, this category includes tobacco usage as a pollutant. This category does not include climate related factors such as drought and heat stress.

Resources Available

An extensive process was used to identify the resources available to address the significant health needs and catalog them for inclusion in the final CHNA report. First, all resources identified in the 2013 CHNA report were included for consideration in a working comprehensive list of resources. Secondly, qualitative data from key informant interviews and focus groups were analyzed to include the resources identified by community input. Resources from community input were added to the list and all resources were then verified to assure that they were current and actively available. Once all resources on the list had been confirmed, each resource was considered in relation to the significant health needs for the SDH HSA. As accurately as possible, each resource was assessed to determine which of the health needs it most closely addressed.

Through this process, 66 resources were identified pertaining to the significant health needs for Sutter Davis Hospital, located at 2000 Sutter Pl, Davis, CA 95616. The final list of health resources is available in Appendix H, and the methodology for resource identification is further detailed in Appendix B.

Report Adoption, Availability, and Comments

This CHNA was adopted by the Sutter Health Valley Area Board of Directors in November of 2016. This report was widely available to the public on the Sutter Health web site, and a paper copy is available for inspection by requesting one from Kelly Brenk at 916-541-0519 or brenkkm@sutterhealth.org. Written comments on this report can be submitted by email to brenkkm@sutterhealth.org.

ASSESSMENT PURPOSE AND ORGANIZATIONAL COMMITMENT

Purpose for the Community Health Needs Assessment (CHNA)

The purpose of this Community Health Needs Assessment (CHNA) is to identify and prioritize significant health needs of the community served by Sutter Davis Hospital. The priorities identified in this report help to guide the hospital's community health improvement programs and community benefit activities, as well as its collaborative efforts with other organizations that share a mission to improve health. This CHNA report meets requirements of the Patient Protection and Affordable Care Act and California Senate Bill 697 that not-for-profit hospitals conduct a community health needs assessment at least once every three years.

This report documents the processes, methods, and findings of the CHNA conducted in partnership with Sutter Davis Hospital (SDH), located at 2000 Sutter Pl, Davis, CA 95616. Building on federal and state requirements, the objective of the 2016 CHNA was:

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Organizational Commitment

Organization of the Report

The remainder of this report is organized in accordance with recommended/required components detailed from the other collaborative health system partners. The report continues with a description of the hospital service area (HSA), including a description of geographical areas of the HSA where low income, underserved, and diverse populations reside. The report then details the CHNA process and methods, including both the process model used for the CHNA and the theoretical model used in the assessment for determination of quantitative indicators to be included. Primary data collection methods, participant demographics and methods are also detailed. Assessment findings are provided in accordance with the theoretical model used for the Sutter Davis Hospital CHNA in the following categories: morbidity and mortality, risk behaviors, and living conditions. A detailed description of the prioritized significant health needs is provided with the corresponding secondary indicators and qualitative findings, followed by a summary of available resources, a conclusion, and corresponding appendices.

DEFINITION OF COMMUNITY SERVED

Community Definition

The community or hospital service area (HSA) is defined as the geographic area (by ZIP code) from which the hospital receives its top 80% of discharges. The Sutter Davis HSA is comprised of 17 ZIP codes in Yolo, Solano and Sutter counties, California. Figure 1 shows the Sutter Davis HSA.

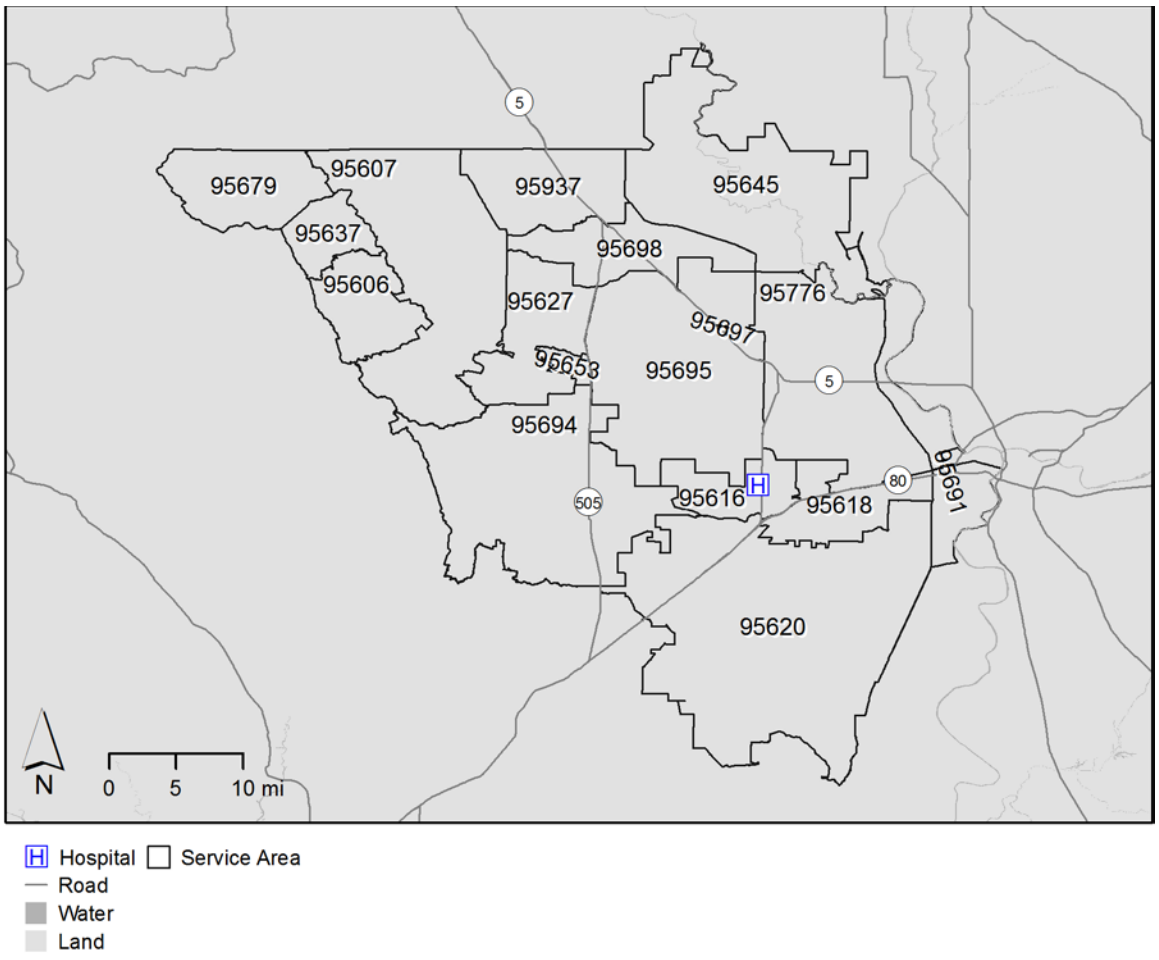

Figure 1: Sutter Davis Hospital Service Area

Demographics of the Hospital Service Area (HSA)

The Sutter Davis Hospital (SDH) Hospital Service Area (HSA) is located in Northern California and includes approximately 209,902 residents. As Tables 1 and 2 show, the area is considerably diverse in population, economic stability (income and poverty), and insurance status. Table 1 shows the total population count for each of the 17 ZIP codes within the SDH HSA, the median age, and the median income compared to county and state benchmarks. Table 2 provides information on the presence of medically underserved, low income, and minority residents in the SDH HSA.

Population Characteristics

Table 1: Census Population Counts, Median Age, and Median Income for the Sutter Davis HSA, Compared to Yolo County and the State

ZIP Code	Community/ Area	Population	Median Age	Median Income
95606	Brooks	98	61.1	$178,295
95607	Capay	371	56.6	$77,697
95616	Davis	47,995	23.0	$44,741
95618	Davis	27,262	29.5	$82,313
95620	Dixon	20,845	34.6	$71,261
95627	Esparto	3,171	33.0	$58,092
95637	Guinda	622	27.2	$72,778
95645	Knights Landing	1,962	32.9	$44,954
95653	Madison	481	43.2	$42,083
95679	Rumsey	29	--	--
95691	West Sacramento	35,485	33.9	$63,559
95694	Winters	10,008	40.8	$55,163
95695	Woodland	37,686	37.8	$51,158
95697	Yolo	307	36.4	$60,469
95698	Zamora	177	51.1	$47,857
95776	Woodland	22,083	30.6	$61,599
95937	Dunnigan	1,320	35.9	$56,705
SDH HSA		209,902	Range: 23 to 61.1 years	Range: $42,083 to $178,295
Yolo County		*202,288*	*30.7 years*	*$55,918*
CA State		*37,659,181*	*35.4 years*	*$61,094*

The population of Yolo County makes up 0.5% of all residents in the State of California. The population count at the ZIP code level varied from 29 residents in ZIP code 95679 (Rumsey) to 47,995 residents in ZIP code 95616 (Davis). The median age of Yolo County is lower than the median age of the state. The ZIP code with the youngest median age was 95616 (Davis) with a median age of 23.0 years and the ZIP code with the eldest median age was 95606 (Brooks) with a median age of 61.1 years. The median income for Yolo County was lower than the state median income at $55,981. The ZIP code in the SDH HSA with the lowest median income was 95653 (Madison) at $42,083 per year compared to the highest in ZIP code 95606 (Brooks) at $178,295 per year, a range of over $135,000 dollars a year.

In an attempt to understand the extent and location of the medically underserved, low income and minority populations living in the SDH HSA, specific indicators were examined. Table 2 describes these indicators for the HSA.

Table 2: Percent Living Below 100% Federal Poverty Level, Percent Uninsured and Percent Minority for the Sutter Davis HSA, Compared to the County and State

ZIP Code	Percent Below Federal Poverty Level (less than or equal to 100% FPL)	Percent Uninsured	Percent Minority (Hispanic or non-White)
95606	8.2	8.2	40.8
95607	8.9	11.3	32.3
95616	30.9	8.2	45.3
95618	18.8	5.9	41.8
95620	11.2	14.7	49.7
95627	15.4	16.4	52.0
95637	--	1.4	70.4
95645	23.2	21.0	57.6
95653	8.7	35.1	73.8
95679	--	--	--
95691	15.9	15.9	52.0
95694	10.7	16.6	51.1
95695	13.1	15.9	49.7
95697	6.5	23.1	87.0
95698	--	5.1	--
95776	10.9	17.9	66.6
95937	15.2	17.8	58.0
SDH HSA	17.5	13.0	50.2
Yolo County	*19.1%*	*13.2%*	*50.6%*
CA State	*15.9%*	*17.8%*	*60.3%*

Source: 2013 American Community Survey 5-year Estimates
*Values in blue are those that fall above or below the desired direction in comparison to the county benchmark.

The percent of population living in poverty was greater in Yolo County compared to the state benchmark. The SDH HSA ZIP code with the highest percent of population in poverty was 95616 (Davis) at 30.9%, compared to the lowest percent poverty in ZIP code 95697 (Yolo) at 6.5%. The percent of residents uninsured was lower in Yolo County compared to the state benchmark. The ZIP code with the highest percent uninsured was 95653 (Madison) at 35.1%, and the lowest percent was 1.4% in ZIP code 95637 (Guinda). The percentage of minority residents was lower in Yolo County compared to the state benchmark, with the highest percent seen in ZIP code 95697 (Yolo) at 87.0% and the lowest percent in 95607 (Capay) at 32.3%.

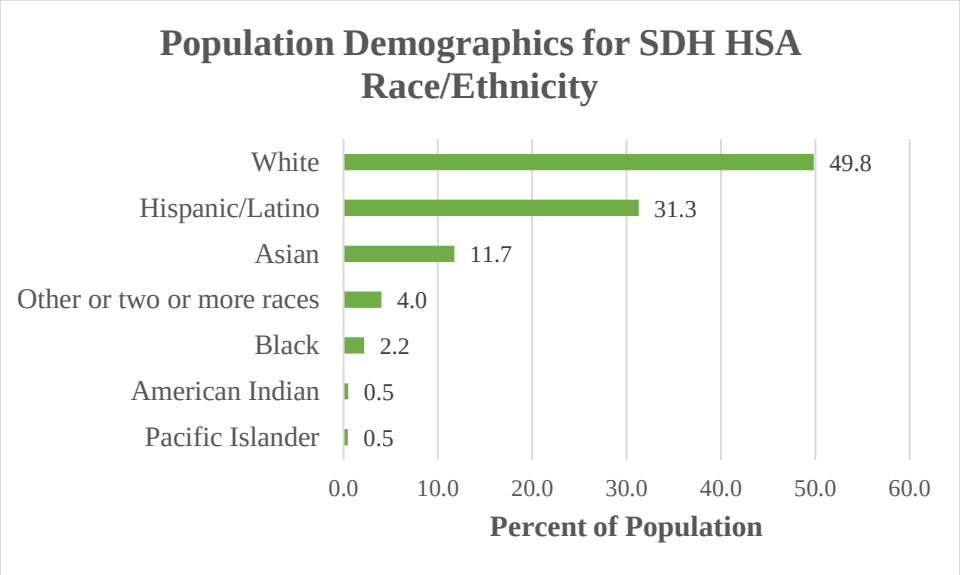

Figure 2: Population Demographics for Sutter Davis HSA for Race/Ethnicity

Demographics for the SDH HSA showed that Whites make up the highest percent of residents followed by Hispanics/Latinos and Asians.

Community Health Vulnerability Index and Focus Communities

To further examine medically underserved, low income and diverse populations in the SDH HSA, two tools were developed. This assessment used a Community Health Vulnerability Index (CHVI) to help identify census tracts within HSA ZIP codes where such populations may reside geographically. Focus Communities were also determined at the ZIP code level to provide a place-based lens with which to consider health disparities in the HSA. Both the CHVI and the Focus Communities are described in the following passages.

Community Health Vulnerability Index – Overview

The CHVI is based on the Community Need Index (CNI), created and made publicly available by Dignity Health and Truven Health Analytics (for further description of the CNI see Appendix B). The CHVI was also used to help focus primary data collection and in the further determination of Focus Communities, which is discussed next. The indicators used to create the CHVI were collected at the census tract level and are presented in Table 3 and detailed in Appendix C, Detailed Analytic Methodology including SHN Categorization. The CHVI results for the SDH HSA are presented in Figure 3.

Table 3: Indicators Included in the CHVI

Percent Minority (Hispanic or non-White)	Percent Families with Children in Poverty
Population 5 Years or Older who speak Limited English	Percent Households 65 years or Older in Poverty
Percent 25 or Older Without a High School Diploma	Percent Single Female-Headed Households in Poverty
Percent Unemployed	Percent Renter-Occupied Housing Units
Percent Uninsured	

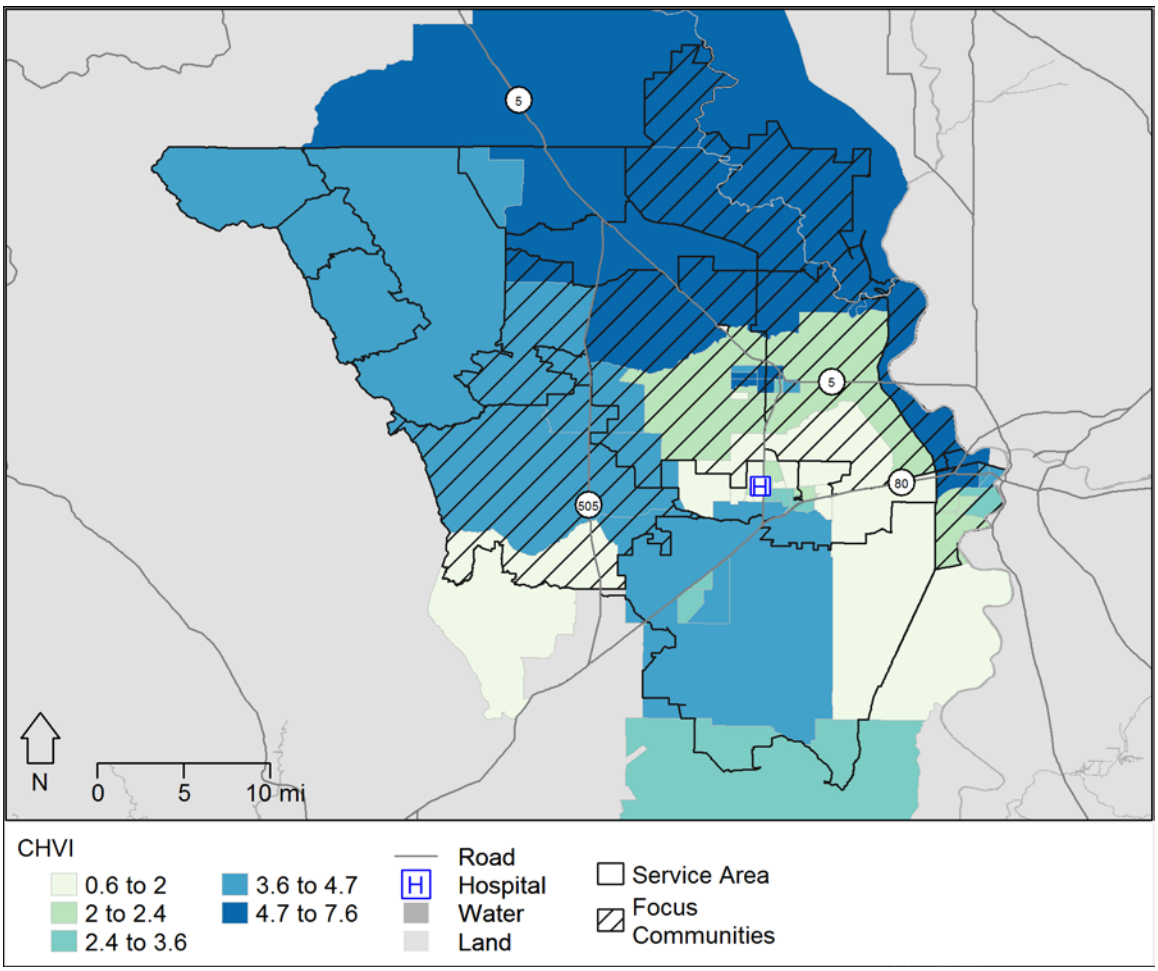

Figure 3: Community Health Vulnerability Index for Sutter Davis HSA

Focus Communities – Overview

Focus Communities were used to provide a place-based lens with which to consider health disparities in the HSA. The Focus Communities were defined using four components: (1) preliminary analysis of indicators of social determinants of health and inequities (e.g., poverty and educational attainment) at the ZIP code level; (2) census tract values from the CHVI; (3) initial input from area wide service providers; and (4) consideration of ZIP codes that were identified as Focus Communities (previously referred to as Communities of Concern) in the Sutter Davis 2013 CHNA. These inputs provided a unique perspective on social determinants of health within the HSA and were considered both separately and collectively when selecting Focus Communities.

The social inequities dataset included 22 indicators (presented in Table 4) that were analyzed at the ZIP code level to identify and flag the top 20% of ZIP codes with the highest rates of social inequities compared to county and state benchmarks. For the CHVI, ZIP codes were flagged if they intersected a census tract in which the CHVI value fell within the top 20% of the HSA, values 3.9 to 6.0. In addition to quantitative measures, Focus Communities were further verified through analysis of initial key informant interviews, conducted throughout the service area. Input on vulnerable locations within the HSA was considered from interviews with public health experts and area service providers. Locations identified as vulnerable were then cross-referenced with the ZIP codes that were flagged in the CHVI and social inequities data, as well as with ZIP codes that were identified as Focus Communities in 2013. This was included to allow greater continuity between CHNA rounds and to reflect the work of the hospitals oriented to serve these disadvantaged communities.

Table 4: Social Inequities Indicators to Determine Focus Communities

Median income	Percent non-White or Hispanic population
GINNI coefficient (measure of income inequality)	Foreign born population
Population in poverty (under 100 Federal Poverty Level)	Citizenship status
Percent with public assistance	Population 5 years or older who speak limited English
Percent households 65 years or older in poverty	Single female headed households
Percent families with children in poverty	Percent homeowners with housing expenses greater than 30% of income (homes with mortgages)
Percent single female headed households in poverty	Percent homeowners with housing expenses greater than 30% of income (homes without mortgages)
Percent unemployed	Percent renters with housing expenses greater than 30% of income
Uninsured population	Population over 18 that are civilian veterans
Population with public insurance	Percent renter occupied housing units
Population with any disability	Percent population 25 or older without a high school diploma

The Focus Communities for SDH HSA are found in Figure 4 and listed in Table 5. Figure 4 displays the seven Focus Community ZIP codes, denoted in red. The specific ZIP codes and area names are provided in Table 5, with the census population for each.

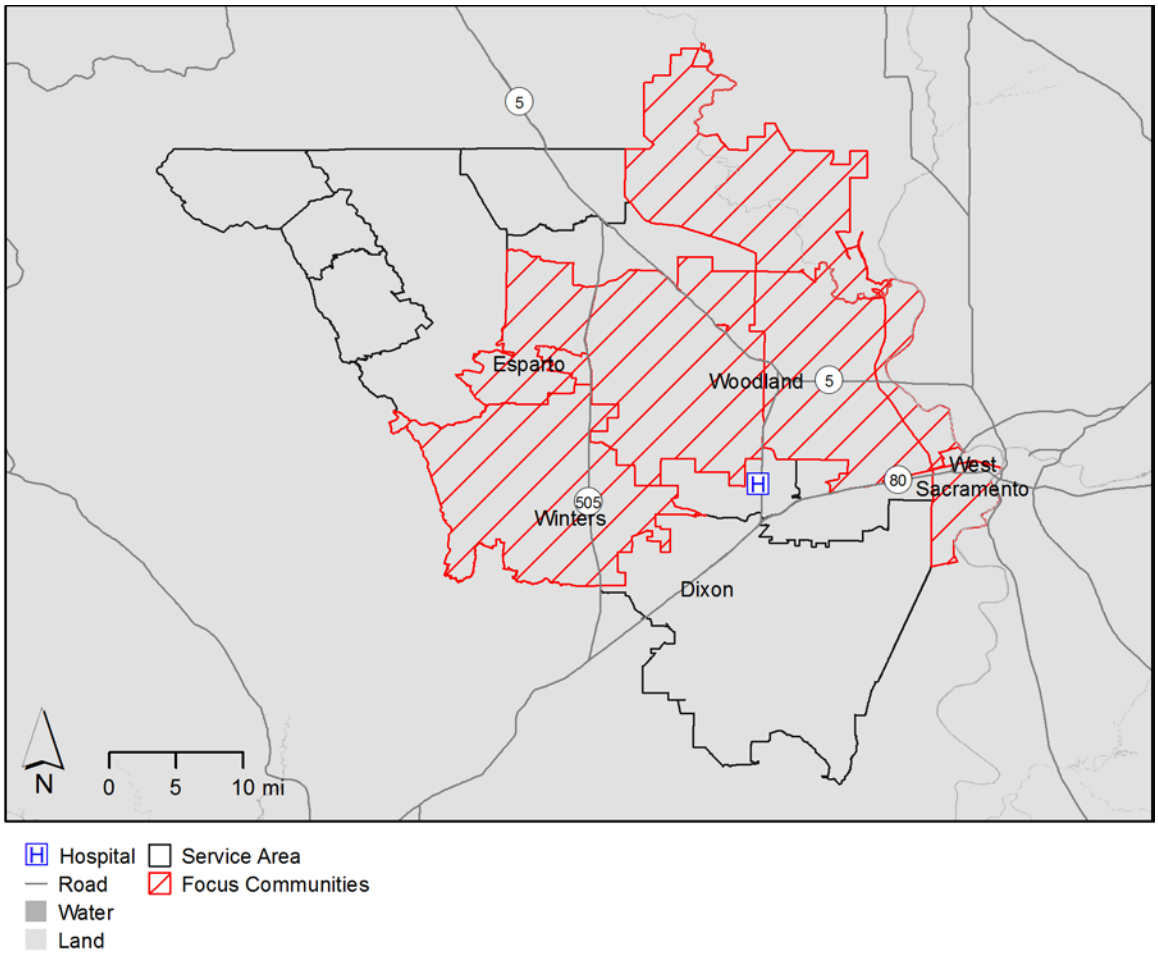

Figure 4: Focus Communities for the Sutter Davis HSA

Table 5: Seven Identified Focus Communities for the Sutter Davis HSA

ZIP Code		Community/Area*	Population
Focus Communities	95627	Esparto	3,171
	95645	Knights Landing	1,962
	95653	Madison	481
	95691	West Sacramento	35,485
	95694	Winters	10,008
	95695	Woodland	37,686
	95776	Woodland	22,083
Total Population in the Focus Communities			110,876
Total Population in the HSA			209,902
Percent of the HSA in the Focus Communities			52.8%

Source: US Census, 2013

* ZIP code and community area name is approximate here and throughout the report.

Primary data collected in this assessment confirmed the location of vulnerable populations in the SDH HSA that were identified in the previously mentioned Focus Communities. During primary data collection, key informants and community members were asked to identify geographical areas and populations in the HSA that were experiencing health inequities. Their response indicated that specific geographic areas like West Sacramento, Woodland, and rural and remote areas of Yolo County such as Knights Landing, Esparto, Winters, and Madison were areas of concern. In terms of racial and ethnic groups, data indicated that Latinos, Russians, Southeast Asians and East Indians were among the most mentioned as populations in need of improved health. Other vulnerable populations mentioned frequently were older adults, children, farm workers, those experiencing homelessness, and those with chronic mental illness and/or substance abuse. A major determination for the above mentioned groups was directly related to the absence or presence of poverty in these populations. Poverty appeared to be the biggest influence in determining vulnerability to poor health, a finding detailed later in this report.

ASSESSMENT PROCESSES AND METHODS

Process Overview

Sacramento Region Collaborative Process Model

The CHNA collaborative project was conducted over a period of 18 months, beginning in January 2015, and concluding in June 2016. The project was conducted using a series of data collection and analytical phases. The CHNA process began with the collection and analysis of secondary data indicators of social inequities and proceeded with collection of both “upstream” and “downstream” health indicators. Primary data collection began with interviews of area health experts such as public health and social service representatives. The first stage of data analysis resulted in the identification of vulnerable communities (e.g., low-income, medically underserved and minority populations), which then guided further primary data collection including community member focus groups. These data were considered together with the data in the Community Commons Data Platform (CCDP) to develop potential health need categories that provided an organizational structure to integrate these numerous inputs, analyze the data and identify the significant health needs for the SDH HSA. The significant health needs were then prioritized using established criteria and resources available to address the identified needs and were compiled for the final report. The overall process to conduct the CHNAs is depicted in the CHNA Process Model (Figure 5).

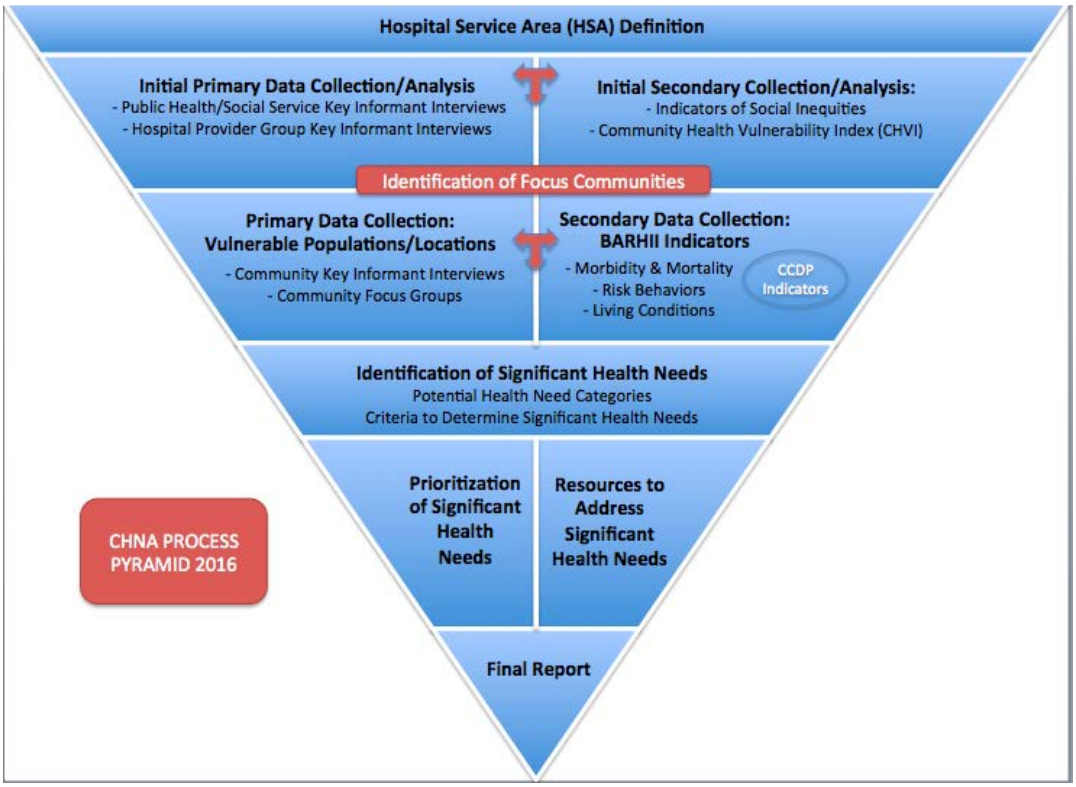

Figure 5: CHNA Process Model

BARHII Model

Selection of quantitative indicators used in this assessment was guided by a conceptual framework developed by the Bay Area Regional Health Inequities Initiative (BARHII) (Figure 6). The BARHII Framework demonstrates the connection between social inequalities and health, and focuses attention on measures that had not characteristically been within the scope of public health departments. Valley Vision used the BARHII framework to organize quantitative indicators, as well as frame the primary data collection tool, to capture both "upstream" and "downstream" factors influencing health in the SDH HSA. The BARHII framework was also used in the organization of this report beginning in the "Findings" section of the report. The findings are presented in the report starting with "downstream factors" like mortality and morbidity, followed by risk behaviors and living conditions. Social inequities data is spread throughout the body of the report.

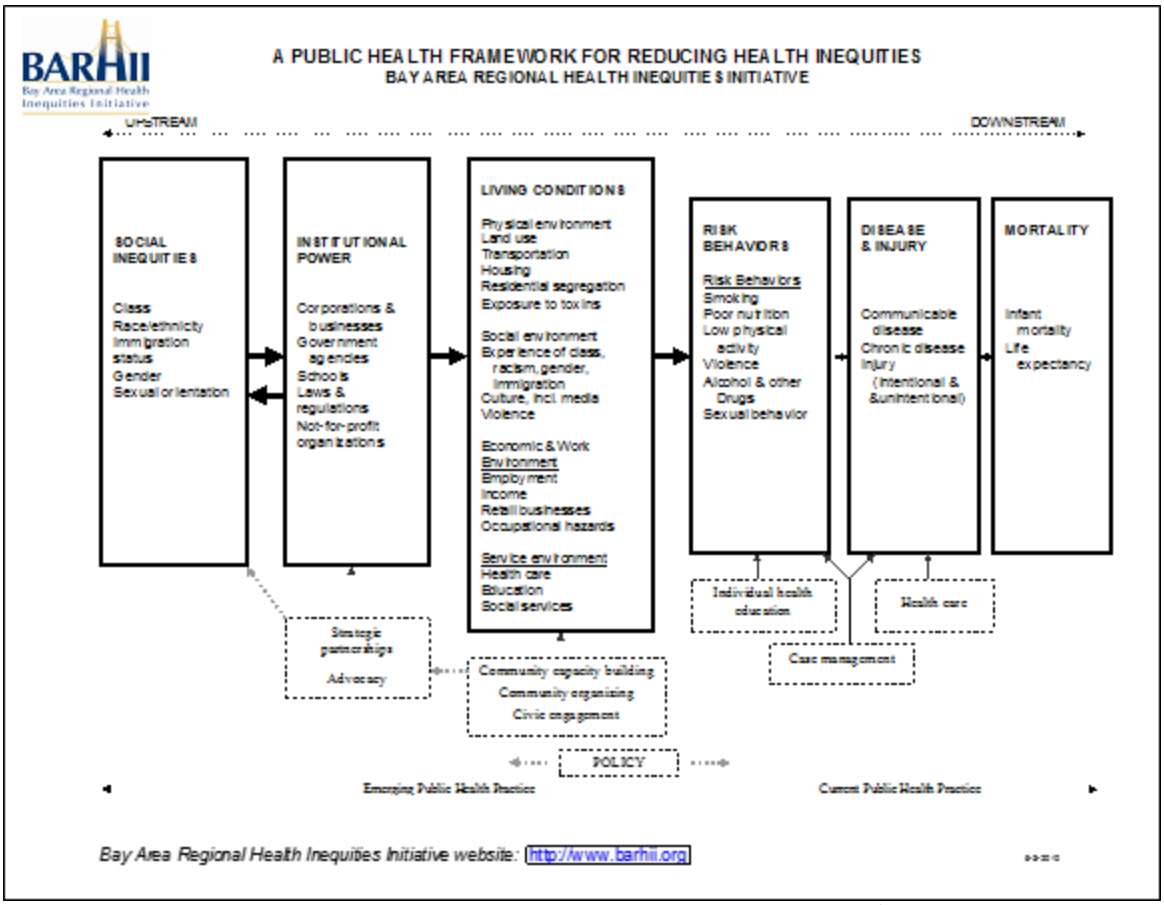

Figure 6: Bay Area Regional Health Inequities Initiative (BARHII) Model[1]

Secondary Data Collection – Processing and Analyzing

Data Collection: Overview

This section serves to provide a brief overview of the secondary data collection, processing and analysis approaches used to support the CHNA. For additional detail, including detailed project methodology, please refer to Appendices B and C.

The secondary data supporting the CHNA was collected from a variety of sources and was processed in multiple stages before it was used for analysis. The selection of secondary data indicators was guided by the BARHII Framework previously illustrated in Figure 6. Specific secondary data indicators were selected to represent the concepts organized in the six categories in the BARHII model that reflect both "upstream" and "downstream" factors influencing health. A number of general principles guided the selection of secondary data indicators to represent these concepts. First, only indicators associated with concepts in the BARHII framework were included in the analysis. Second, indicators available at a sub-county level (such as at a ZIP code or smaller level) were preferred for their utility in revealing variations within the SDH HSA. Finally, indicators were only collected from data sources deemed reliable and reputable, with a preference for indicators that were more current than those used in the 2013 CHNA report.

Mortality data were primarily obtained from CDPH, and morbidity data were primarily obtained from OSHPD. These input data were processed using methods described in detail in Appendix B to result in a set of indicators for risk behaviors, disease/injury, and mortality. Input CDPH data were used to develop mortality rates and broader measures of health status for each ZIP code in the SDH HSA. Input OSHPD data were used to develop hospitalization (H) and emergency department (ED) discharge rates for each ZIP code in the HSA. The majority of indicators pertaining to living conditions and other "upstream" factors in the report were obtained from the US Census Bureau. These indicators primarily focus on the socio-demographic characteristics of the population within the HSA, and are also listed in Appendix B. Health outcome and health behaviors were also collected from the CCDP to compliment the indicators already collected from additional sources. Indicators in the CCDP platform were only selected for final analysis and inclusion if they did not duplicate indicators that were pulled from other sources. A detailed list of indicators collected for the 2016 CHNA is provided in Appendix B, Data Dictionary and Processing.

The secondary data was processed in multiple stages before it was analyzed. The three basic processing steps included rate smoothing, age-adjustment, and obtainment of benchmark rates. A detailed description of this process is outlined in Appendix B, Data Dictionary and Processing.

Primary Data Collection

Overview of Primary Data Collection

Community input was provided by a broad range of community members through the use of key informant interviews and focus groups. Individuals with the knowledge, information, and expertise relevant to the health needs of the community were consulted. These individuals included representatives from the local public health department as well as leaders, representatives, and members of medically underserved, low-income, and minority populations. When applicable, other individuals with expertise on local health needs were consulted. For a complete list of individuals who provided input, see Appendices F and G.

Methodology for Collection and Interpretation

Primary data were collected from May 2015-November 2015. Instruments used in primary data collection included a participant informed consent form, a demographic questionnaire, the interview question guide and a project summary sheet. All participants were given an informed consent form prior to their participation that provided information about the project, asked for permission to record the interview, and listed the potential benefits and risks for involvement in the interview (Appendix D). Participants were also asked to complete a voluntary questionnaire that was used to compile the demographics on all key informant and focus group participants (Appendix E). The same interview guide was used for key informant interviews and community focus groups with slight modifications for focus groups conducted in Spanish and focus groups with youth or low-literacy populations. In brief, the guide prompted participants to share: (1) the quality of life in their communities; (2) the health issues they see and experience in their communities; (3) the most urgent or priority health needs of their communities; and (4) the resources available to help address health needs (see Appendix E for full interview guide). A project summary sheet (Appendix E) was also given to all participants to provide them with information about the project as well as contact information for the CHNA staff leading the interviews.

Key Informant Interviews

Key informant interviews were conducted with area health experts and service providers familiar with health issues and places and populations experiencing health disparities within the SDH HSA. Primary data collection began with group key informant interviews of hospital service providers including nursing

managers, medical directors, social workers, case managers, patient coordinators/navigators, Emergency Department providers, and administrative leadership. Early interviews were also conducted with county Public Health Officers and other public health and social service experts of the corresponding counties within the HSA. Input from the initial set of group key informant and service provider interviews solicited expert opinion on vulnerable locations and populations within the HSA. This information was used to conduct additional key informant interviews with service providers in low-income, medically underserved and minority communities.

A total of 16 key informant interviews with 20 key informants were completed for the Sutter Davis HSA and are listed in Appendix F. Key informant interviewees represented the following sectors: community based organizations (48%), health care (29%), public health (5%), and social services (5%), with some interviewees representing multiple sectors. These 20 key informants reported working with the following populations: low-income (91%), medically underserved (81%), and racial or ethnic minorities (81%). The racial and ethnic minority groups specified by interviewees included: Latino/Hispanic, Black, East Indian, Southeast Asian, Native American, Slavic and refugees from the former Soviet Union. In addition, key informants specified working with the following vulnerable sub-populations: migrant farm workers, undocumented individuals, those with language barriers, individuals experiencing homelessness, individuals diagnosed with a developmental disability, chronic mental illness and/or substance abuse disorders, pregnant women, teen parents, single parents, individuals identifying as lesbian, gay, bisexual or transgender (LGBT), children and seniors who have experienced abuse and/or neglect, and those utilizing public assistance programs.

Community Focus Groups

Focus group interviews were conducted with community members representing vulnerable populations and locations identified through the initial analysis of key informant input. Recruitment consisted of referrals from designated service providers as well as direct outreach from the Valley Vision CHNA Team to acquire input from medically underserved, minority and low-income populations and/or community members living in vulnerable locations.

Within the SDH HSA, six focus groups were conducted with 69 participants who were medically underserved, impoverished, socially and/or linguistically isolated and/or those who had chronic conditions. Of the approximately 67 people who completed demographic data cards, the median age was 55; 79% identified as female and 21% as male. In addition, 30% indicated that they were not high school graduates; 21% indicated that they were not covered by health insurance, and 69% received some form of public assistance. The self-identified racial composition of focus group participants is presented in Figure 7, with some participants identifying with multiple racial groups.

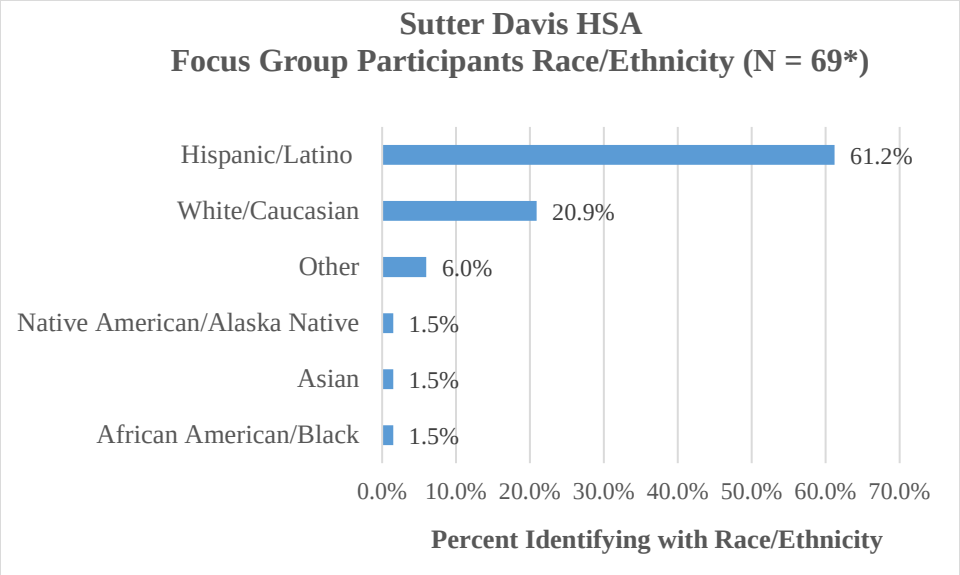

Figure 7: Focus Group Participant Demographics

*Please note: demographic surveys were not completed by all participants

Processing Primary Data

After each interview or focus group was completed, the recording and any notes were uploaded to a secure server for future analysis. A significant portion of key informant interviews and focus group recordings were sent to a transcription service, with a smaller portion transcribed by Valley Vision staff or converted into notes corresponding to the order of questions in the interview guides.

Content analyses were performed for the key informant and focus group transcripts utilizing NVivo 10 Qualitative Analytical Software. This analysis was completed in a two-phase approach. In the first phase of analysis the qualitative data were coded based on the Bay Area Regional Health Inequities Initiative (BARHII) Framework categories and other organically arising thematic areas. Further analysis was then conducted with thematic coding to the eight potential health need categories detailed later in this report and in Appendix C, with additional nodes for vulnerable populations and locations and resource identification.

Information Gaps/Limitations

Information gaps that limit the ability of this CHNA to assess the community's health needs included limited data on specific populations and access to key informant and focus group participants.

Some data were only available at a county level, making an assessment of health needs at a neighborhood level challenging. Furthermore, disaggregated data around age, ethnicity, race, and gender are not available for all data indicators, which limited the ability to examine disparities of health within the community. Lastly, data are not always collected on a yearly basis, meaning that some data are several years old.

For primary data collection, it was a challenge to gain access to participants in communities that disproportionately experience health disparities. Measures were taken to reach out to vulnerable populations and locations through the process of Focus Community identification and following

recommendations of early key informants. However, recruitment was variable and several key contacts expressed the issue of research fatigue from repeated needs assessments. Community members also frequently mentioned distrust of the research process or concerns that their input would not lead to changes in their communities. As best as possible, the research team attempted to address these concerns and to be open and transparent about the full CHNA process. All participants were given contact information of the staff that conducted their interviews and were encouraged to reach out with any additional questions; key informants were also assured that they would receive notification once the CHNA reports become available.

Another challenge was reconciling the secondary and primary data. The quantitative data used for the identification of significant health needs was examined at the Hospital Service Area (HSA) level. Alternately, a large share of the qualitative data was deliberately sourced from low-income, minority and medically underserved populations or their representatives. Owing to this discrepancy, certain health need categories were validated by either the quantitative or the qualitative data, rather than by both of these data sources.

CHNA Collaborative

The 2016 CHNA for Sutter Davis Hospital was completed as part of a collaboration of the four major health systems in the Greater Sacramento region: Dignity Health, Kaiser Permanente, Sutter Health and UC Davis Health System. The CHNA Collaborative served to collectively conduct the 2016 CHNA and to support a coordinated approach to community benefit planning for 15 hospitals in the Sacramento Region including:

- **Dignity Health**: Mercy General Hospital, Mercy Hospital of Folsom, Mercy San Juan Medical Center, Methodist Hospital of Sacramento, Sierra Nevada Memorial Hospital, Sutter Davis Hospital
- **Kaiser Permanente of Greater Sacramento**: Kaiser Permanente Roseville, Kaiser Permanente Sacramento, Kaiser Permanente South Sacramento
- **Sutter Health Valley Area:** Sutter Auburn Faith Hospital, Sutter Center for Psychiatry, Sutter Davis Hospital, Sutter Medical Center, Sacramento, Sutter Roseville Medical Center
- **UC Davis Health System**: UC Davis Medical Center

Consultants Used to Help Conduct the CHNA

The 2016 CHNA was completed by Valley Vision, a regional leadership organization committed to making the Sacramento region a great place to live, work and recreate. The CHNA Collaborative contracted with Valley Vision in 2016 and 2013 to conduct their CHNA and in 2010 and 2007 for the statewide CNA. The collaborative process has built and strengthened partnerships between hospitals and other stakeholders, providing a coordinated approach to identifying priority health needs as well as developing plans to improve the health of the Sacramento region.

Valley Vision was selected to conduct the 2016 CHNAs in the Sacramento Region given its history of working with the CHNA Collaborative, mixed methods research skills and strong commitment to drawing attention to critical unmet health needs. Valley Vision has been a leading social enterprise and nonprofit consultancy for the Sacramento region since 1994 with the ability to deliver trusted research, design and drive multi-stakeholder initiatives, and access a set of

powerful leadership networks across the region. The Valley Vision team consisted of Giovanna Forno, BS, Alan Lange, MPA, Amelia Lawless, CHES, ASW, MPH, Anna Rosenbaum, MSW, MPH, Katie Strautman, MSW, Sarah Underwood, MPH, and Jenny Wagner, MPH(c). The CHNA team brought a rich skill-set from years of experience working in public health, health care, social service and other public sectors.

The Valley Vision team conducted primary qualitative data collection, analyzed primary and secondary data, synthesized these data to determine the significant and prioritized health needs, documented findings and wrote the draft and final CHNA reports. Valley Vision also contracted with Dr. Heather Diaz, Dr. Mathew C. Schmidtlein and Dr. Dale Ainsworth of Community Health Insights who assisted with project design, research methodology, data processing and GIS mapping for the CHNA. Community Health Insights is a Sacramento based research-oriented consulting firm dedicated to improving the health and wellbeing of communities across Northern California.

ASSESSMENT DATA AND FINDINGS

The main findings of this assessment are organized in accordance to the BARHII model beginning with the most downstream factors (mortality and morbidity) and moving backwards to the upstream factors (risk behaviors and living conditions).

Mortality and Morbidity in the SDH HSA

Examination of health outcomes for the assessment included measures of illness (morbidity) and death (mortality) including communicable and non-communicable diseases, and injuries. The conditions examined included: Chronic disease, cancer, respiratory health, mental health, substance abuse, sexually transmitted infections (including HIV/AIDS), tuberculosis, and dental health, along with unintentional and self-inflicted injuries. This section begins with an examination of overall health indicators including age-adjusted all-cause mortality, infant mortality, and life expectancy at birth.

Overall Health Status – Rates of Age-Adjusted All-Cause Mortality, Infant Mortality and Life Expectancy at Birth

These overall health status indicators provide information about what it is like to live in a Sutter Davis Hospital community on an everyday basis. Though specific measures of mortality show how communities suffer from specific conditions, overall health status indicators communicate length of life, quality of life, socioeconomic factors and the intersection of the environment and personal behaviors. Table 6 examines three common overall health status indicators: age-adjusted all-cause mortality, infant mortality, and life expectancy at birth for each of the ZIP codes within the SDH HSA. Values in blue are those ZIP Codes that fall above or below the desired direction in comparison to Yolo County. Values and cells marked with a dash indicate that data was not provided due to small cell counts (less than 5) or that it was missing or unavailable for that ZIP code. When county rates were unavailable, state and national benchmarks were used as comparisons. In addition, ZIP codes followed by an asterisk denote designation as a Focus Community.

Table 6: Overall Health Status Indicators: Age-Adjusted All-Cause Mortality, Infant Mortality, and Life Expectancy at Birth

	ZIP Code	Age-Adjusted All-Cause Mortality (per 10,000 pop)	Infant Mortality Rate (per 1,000 live births)	Life Expectancy at Birth (years)
Overall Health Status Indicators	95606	--	--	--
	95607	--	--	--
	95616	55.45	4.46	83.00
	95618	54.23	4.49	83.59
	95620	54.32	4.20	82.88
	95627*	59.89	4.70	80.86
	95637	--	--	--
	95645*	61.54	--	80.73
	95653*	--	--	--
	95679	--	--	--
	95691*	86.71	4.88	77.06
	95694*	64.27	4.55	80.54
	95695*	70.20	4.39	80.30
	95697	30.59	--	--
	95698	--	--	--
	95776*	68.58	4.29	82.09
	95937	36.12	--	79.57
	SDH HSA	67.05	4.87	80.72
	Yolo County	*68.94*	*3.00*	*80.38*
	CA State	*64.59*	*4.90*	*80.53*
	National 2013	--	--	*78.80*[1]
	Healthy People 2020 Target	--	*6.00*[2]	--

Source: CDPH, 2010-2012; *Indicates Focus Community

Two of the 17 SDH HSA ZIP codes had age-adjusted all-cause mortality rates that were above the county benchmark, with the highest rate seen in Focus Community 95691 (West Sacramento) at 86.71 deaths per 10,000 population. Infant mortality rates exceeded the county benchmark in eight SDH HSA ZIP codes, with the highest rate seen in 95691 (West Sacramento) at 4.88 deaths per 1,000 live births. Three ZIP codes had lower life expectancy than that of Yolo County, at 80.38 years. The ZIP code with the lowest life expectancy was 95691 (West Sacramento) at 77.06 years, more than 3 years lower than the county and state rates.

[1] Centers for Disease Control and Prevention. (2015). *Deaths: Final data for 2013*. Retrieved from: http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_02.pdf

[2] Office of Disease Prevention and Health Promotion. (2014). *Maternal, Infant and Child Health*. Retrieved from: https://www.healthypeople.gov/2020/leading-health-indicators/2020-lhi-topics/Maternal-Infant-and-Child-Health/data

Chronic Diseases – Diabetes, Heart Disease, Stroke, Hypertension and Kidney Disease

Both primary and secondary data indicated that most chronic illnesses are common in the SDH HSA. Key informants and community members specifically stated challenges with diabetes, hypertension, heart disease and stroke, coupled with many residents living with co-morbidities. Primary data showed that participants recognized these chronic conditions to be an outcome of a lack of other behavioral and environmental factors.

Diabetes

Diabetes was the seventh leading cause of death nationally in 2013[3]. Diabetes is listed first in this CHNA as it was a commonly mentioned health issue for community residents, and quantitative findings show clear geographic health disparities across the SDH HSA. Table 7 displays rates of mortality, ED visits, and hospitalizations due to diabetes for all 17 ZIP codes.

Rates – Mortality, ED Visits and Hospitalizations due to Diabetes

Table 7: Mortality, ED Visit, and Hospitalization Rates for Diabetes Compared to County, State, and Healthy People 2020 Benchmarks (Rates per 10,000 Population)

	ZIP Code	Mortality	ED Visits	Hospitalizations
Diabetes	95606	--	85.14	53.37
	95607	--	89.67	74.78
	95616	1.47	142.52	75.06
	95618	1.51	118.82	76.11
	95620	2.19	267.22	151.58
	95627*	--	268.36	133.93
	95637	--	129.24	116.97
	95645*	--	281.76	172.29
	95653*	--	219.52	167.53
	95679	--	43.89	0.00
	95691*	2.18	315.86	237.18
	95694*	--	253.32	144.25
	95695*	3.13	328.57	137.88
	95697	--	568.01	268.06
	95698	--	144.46	77.66
	95776*	2.02	351.29	189.86
	95937	--	448.53	315.90
	SDH HSA	1.87	251.03	140.29
	Yolo County	*1.94*	*261.33*	*146.66*
	CA State	*2.11*	*209.15*	*192.30*
	Healthy People 2020 Target	*6.60*		

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013
*Indicates Focus Community

Four of the SDH HSA ZIP codes had mortality rates due to diabetes that were clearly above the county benchmark, but below the Healthy People 2020 benchmark set at 6.60 deaths per 10,000 population. The

[3] Centers for Disease Control and Prevention. (2015). *Leading Causes of Death*. Retrieved from: http://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm

highest mortality rate due to diabetes was found in Focus Community 95695 (Woodland). Eight ZIP codes had ED visit rates due to diabetes that were clearly above the county and state benchmarks. Of the 17 ZIP codes, 95697 (Yolo) had the highest rate for ED visits, at a rate of 568.01 visits per 10,000 population, which is drastically higher than the county rate at 261.33 per 10,000. In terms of hospitalizations for diabetes, 95937 (Dunnigan) had the highest rate at 315.90 hospitalizations per 10,000, compared to the county rate of 146.66 per 10,000 population.

Percent – Adults Over 20-Years with Diabetes

Reported by the National Center for Chronic Disease Prevention and Health Promotion, the percent of adults over the age of 20 that have ever been told by a doctor that they have diabetes for 2012 was 7.0% for Yolo County, lower than the state percent of 8.1%. Please note that Yolo County rates were used when data were not available at the ZIP code or HSA level.

Percent – Medicare Patients with Diabetes Who Received an hA1c Exam

Preventive screening for diabetes is important. Lack of screening and follow up care for diabetes was mentioned in the primary data as a big concern for area residents. According to the Dartmouth College Institute for Health Policy & Clinical Practice in 2012, the percent of Medicare patients with diabetes who report having had a hA1c exam to monitor their diabetes diagnosis in Yolo County was 81.2%, slightly below the state percent of 81.5%.

Heart Disease

Heart disease is the leading cause of death in the nation for individuals under the age of 85; it includes a number of different types of heart-related conditions, with coronary heart disease being the most common and a major cause of heart attacks. More than 600,000 people die of heart disease each year. [4] Table 8 examines rates for mortality, ED visits, and hospitalizations due to heart disease.

[4] Centers for Disease Control and Prevention. (2015). *Heart Disease Facts*. Retrieved from: http://www.cdc.gov/heartdisease/facts.htm

Rates – Mortality, ED Visits and Hospitalizations due to Heart Disease

Table 8: Mortality, ED Visit and Hospitalization Rates for Heart Disease Compared to County, State, and Healthy People 2020 Benchmarks (Rates per 10,000 Population)

	ZIP Code	Mortality	ED Visits	Hospitalizations
Heart Disease	95606	--	29.20	60.50
	95607	--	46.42	42.59
	95616	7.68	138.75	135.01
	95618	7.50	97.42	113.50
	95620	10.13	165.15	164.89
	95627*	12.49	128.26	151.90
	95637	--	71.00	132.95
	95645*	22.11	122.76	147.73
	95653*	--	44.04	64.51
	95679	--	18.40	24.68
	95691*	14.27	176.36	277.62
	95694*	12.43	198.82	163.49
	95695*	19.12	164.97	129.84
	95697	16.41	160.39	174.29
	95698	--	56.77	87.95
	95776*	7.63	208.63	189.58
	95937	18.25	247.12	313.29
	SDH HSA	11.81	153.86	161.39
	Yolo County	*11.90*	*156.41*	*167.63*
	CA State	*15.82*	*112.64*	*222.00*
	Healthy People 2020 Target	*10.10*	--	--

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013
*Indicates Focus Community

Examination of mortality due to heart disease revealed that seven SDH HSA ZIP codes had rates higher than both the county rate and the Healthy People 2020 benchmark. The highest rate of all ZIP codes was found in Focus Community 95645 (Knights Landing), at a rate of 22.11 deaths per 10,000 population, nearly double the county rate. Seven of the ZIP codes had rates above the county and state benchmarks for ED visits due to heart disease. Most notable was ZIP code 95937 (Dunnigan) with an ED visit rate of 247.12 per 10,000 population, almost twice the county rate of 156.41 per 10,000. In addition, this ZIP code had an elevated hospitalization rate of 313.29 per 10,000 population, compared to the county and state benchmarks.

Percent – Adults Over 18 Years with Heart Disease

The California Health Interview Survey indicates that for 2011-2012, the percent of adults over the age of 18 that have ever been told by a doctor they have heart disease was 5.0% for the Yolo County area, slightly lower than the state percent at 6.3%.

Stroke, Hypertension and Kidney Disease

The fifth leading cause of death nationally is stroke.[5] Approximately 800,000 people have a stroke each year, with the most common type being that which restricts blood flow to the brain.[6] Tobacco smoking and hypertension drastically increase risk for stroke. Hypertension is common in approximately one out of every three adults.[7] Stroke, hypertension, and kidney disease are discussed together here. Hypertension also increases risk for kidney diseases, along with heart disease and diabetes. Tables 9, 10, and 11 examine mortality, ED visits, and hospitalizations related to stroke, hypertension, and kidney disease.

[5] Centers for Disease Control and Prevention. (2015). *Leading Causes of Death*. Retrieved from: http://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm

[6] Centers for Disease Control and Prevention. (2015). *Stroke Facts*. Retrieved from: http://www.cdc.gov/stroke/facts.htm

[7] Centers for Disease Control and Prevention. (2015). *Blood Pressure Facts*. Retrieved from: http://www.cdc.gov/bloodpressure/facts.htm

Rates – Mortality, ED Visits and Hospitalizations due to Stroke

Table 9: Mortality, ED Visit and Hospitalization Rates for Stroke Compared to County, State, and Healthy People 2020 Benchmarks (Rates per 10,000 Population)

	ZIP Code	Mortality	ED Visits	Hospitalizations
Stroke	95606	--	4.36	11.72
	95607	--	--	19.37
	95616	3.34	22.48	35.43
	95618	2.31	20.80	29.76
	95620	4.28	30.07	47.63
	95627*	3.49	23.52	36.65
	95637	--	7.29	10.11
	95645*	--	22.14	45.21
	95653*	--	11.20	4.32
	95679	--	--	--
	95691*	3.89	24.46	59.56
	95694*	3.77	27.55	41.54
	95695*	5.16	24.84	31.61
	95697	--	10.59	28.12
	95698	--	5.56	5.42
	95776*	2.83	33.13	51.96
	95937	4.47	18.17	49.52
	SDH HSA	3.97	25.92	41.35
	Yolo County	*3.68*	*25.13*	*40.63*
	CA State	*3.60*	*18.55*	*52.23*
	Healthy People 2020 Target	*3.40*	--	--

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013
*Indicates Focus Community

Mortality rates due to stroke were higher than county and state benchmarks in five SDH HSA ZIP codes, with the highest rate seen in 95695 (Woodland). Rates of ED visits due to stroke were also above the county benchmark in three of the ZIP codes. Rates of hospitalization due to stroke were above the county benchmark in six ZIP codes, with the highest rate in Focus Community 95691 (West Sacramento) at 59.56 hospitalizations per 10,000 population, above both the county and state benchmarks.

Rates – Mortality, ED Visits and Hospitalizations due to Hypertension

Table 10: Mortality, ED Visit and Hospitalization Rates for Hypertension Compared to County and State

	ZIP Code	Mortality	ED Visits	Hospitalizations
Hypertension	95606	--	124.78	122.22
	95607	--	220.37	171.14
	95616	0.81	399.86	210.90
	95618	1.18	299.42	181.52
	95620	0.99	513.23	274.60
	95627*	1.31	535.06	281.38
	95637	--	249.09	221.08
	95645*	--	577.25	348.00
	95653*	--	515.96	200.13
	95679	--	106.10	47.70
	95691*	0.83	566.40	442.39
	95694*	--	515.71	264.10
	95695*	1.25	600.79	269.51
	95697	--	990.23	435.93
	95698	--	337.96	211.47
	95776*	1.11	703.24	365.02
	95937	--	876.90	521.71
	SDH HSA	1.14	503.28	281.81
	Yolo County	-	*517.22*	*293.57*
	CA State	*1.21*	*408.99*	*383.74*

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013
*Indicates Focus Community

Mortality rates due to hypertension were above the state benchmark in two of the 17 SDH HSA ZIP codes. Examination of ED visits due to hypertension showed that seven of the ZIP codes had rates higher than the county and state benchmarks. Specifically, ZIP code 95697 (Yolo) had a rate of ED visits of 990.23 per 10,000 population, more than twice the state rate and nearly twice the county rate. The rate for hospitalizations due to hypertension was highest in ZIP code 95937 (Dunnigan).

Percent – Adults with Hypertension Not Taking Medication

The Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System survey results for 2006-2010 indicate that the percentage of adults self-reporting high blood pressure who do not take medication was 54.3% for Yolo County, clearly above the state percent of 30.3%.

Primary data showed that CHNA participants have difficulty accessing medications for managing hypertension, especially those with low income. As one community member stated:

> *I went to a clinic about a year and a half ago to get medicine for my high blood pressure. I got the checkup and I got a prescription for my meds, but no pharmacy sent me the meds. So then, it has been over two years since I've taken any meds for my condition because I don't know where I can get them and if I have to pay for them myself, these meds are too expensive.* (FG_4)

Rates – Mortality, ED Visits and Hospitalizations due to Kidney Disease

Table 11: Mortality, ED Visit and Hospitalization Rates for Kidney Disease Compared to County and State Benchmarks (Rates per 10,000 Population)

	ZIP Code	Mortality	ED Visits**	Hospitalizations**
Kidney Disease	95606	--	1.63	24.67
	95607	--	14.94	52.05
	95616	0.50	52.31	96.82
	95618	0.73	46.17	86.45
	95620	0.90	90.74	121.10
	95627*	--	52.25	92.47
	95637	--	19.03	99.75
	95645*	--	64.31	122.66
	95653*	--	35.34	51.57
	95679	--	--	--
	95691*	0.57	98.09	206.12
	95694*	--	109.88	120.33
	95695*	0.65	83.62	103.69
	95697	--	88.79	119.01
	95698	--	36.85	101.18
	95776*	0.65	103.44	145.67
	95937	--	108.34	227.56
	SDH HSA	0.63	76.04	120.52
	Yolo County	*0.72*	*77.06*	*126.19*
	CA State	*0.73*	*57.09*	*160.01*

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013
**OSHPD data includes data for nephritis, nephrotic syndrome, and nephrosis
*Indicates Focus Community

Mortality rates due to kidney disease were elevated in two SDH HSA ZIP codes with the highest rate in 95620 (Dixon). Rates of ED visits due to kidney disease were above the county and state benchmarks in seven ZIP codes, with the highest rates in 95694 (Winters) and 95937 (Dunnigan). Rates of hospitalization due to kidney disease were high in three ZIP codes, two of those being in the Focus Communities of 95691 (West Sacramento) and 95776 (Woodland), and the highest rate in 95937 (Dunnigan) at 227.56 hospitalization per 10,000 population.

Cancer – Incidence, ED Visit, Hospitalization, Mortality and Screening Rates by Specific Cause of Cancer

Cancer is one of the leading causes of death in the nation, with more than 8% of the population receiving a cancer diagnosis at least once in their lifetime.[8] In an attempt to gain a better understanding of how the communities within the SDH HSA are affected by cancer, the assessment included the examination of cancer incidence for female breast, colorectal, lung and prostate cancers at the ZIP code level. All-cause cancer mortality and ED visits and hospitalizations for specific causes of cancer are also examined by ZIP

[8] Centers for Disease Control and Prevention. (2015). *Cancer*. Retrieved from: http://www.cdc.gov/nchs/fastats/cancer.htm

code and included lung cancer, colorectal cancer, prostate cancer, and female breast cancer. These specific cancers were chosen for this assessment because they are among the leading causes of new cases and/or of deaths due to cancer among Americans today. Screening rates for breast cancer, cervical cancer and colorectal cancer were also examined at the HSA level.

Rates – Breast (female), Colorectal, Lung, and Prostate Cancer Incidence

Cancer incidence communicates risk for cancer within the SDH HSA. Table 12 shows incidence rates for female breast, colorectal, lung and prostate cancers for each of the ZIP codes. Rates for each ZIP code are compared to the state rate, as well as the SDH HSA rate.

Table 12: Cancer Incidence (New Cases) for Female Breast Cancer, Colorectal Cancer, Lung Cancer and Prostate Cancer (Rates per 10,000 Population)

	ZIP Code	Breast Cancer-Female	Colorectal Cancer	Lung Cancer	Prostate Cancer
Cancer Incidence	95606	--	--	--	--
	95607	--	--	--	--
	95616	15.08	2.28	2.58	10.85
	95618	16.44	2.78	2.11	9.52
	95620	16.15	3.77	5.49	11.36
	95627*	14.72	--	--	10.32
	95637	--	--	--	--
	95645*	20.02	--	--	--
	95653*	--	--	--	--
	95679	--	--	--	--
	95691*	16.24	3.63	3.41	10.77
	95694*	11.07	3.76		13.14
	95695*	20.05	3.59	5.12	9.98
	95697	--	--	--	--
	95698	--	--	--	--
	95776*	16.82	3.59	3.00	7.36
	95937	--	--	--	--
	SDH HSA	16.60	3.48	3.55	10.24
	CA State	*13.16*	*3.88*	*4.54*	*11.61*

Source: California Cancer Registry, 2010-2012
*Indicates Focus Community

Eight of the 17 SDH HSA ZIP codes had breast cancer incidence rates above the state rate, including five Focus Communities. The ZIP codes with the highest rates of breast cancer incidence were Focus Communities 95695 (Woodland) and 95645 (Knights Landing) at 20.05 and 20.02 cases per 10,000 population, respectively. Two ZIP codes had rates of lung cancer incidence that were above the state benchmark, with 95620 (Dixon) having the highest rate at 5.49 new cases per 10,000 population. Focus Community 95694 (Winters) was the only ZIP code with an elevated incidence rate for prostate cancer, at 13.14 new cases per 10,000 population.

Primary data participants discussed caner as a diagnosis of concern within the SDH HSA, especially for those living in the rural and remote parts of the county. When asked about the health issues seen in the community, one resident said, "*cancer…like lung, breast and colon cancers. Stomach cancer.*" (FG_5)

One service provider elaborated on the complications of receiving a cancer diagnosis, noting the challenges some rural residents face in regards to transportation and getting adequate care:

> *…we had a mom with four little kids who had stage 4 breast cancer and she needed to get to Winters, because Winters has a very good healthcare clinic that serves everyone, whether they have insurance or not, or whether they are documented or not. But, it takes her two and a half hours because she has to go this only way that they provide, see what I'm saying?* (KI_2)

Rates – All-cause Cancer Mortality and Lung Cancer ED Visits and Hospitalizations

An all-cause cancer mortality rate shows the overall effect of cancer as an illness in the SDH HSA. Unfortunately, mortality data due to specific cancers is not available at the sub-county level, and therefore is not included in this assessment. However, ED visits and hospitalization rates due to lung cancer are reported in Table 13, followed by rates for colorectal, prostate and female breast cancer in Table 14.

Table 13: Mortality Rates for All-Cause Cancer, and ED Visits and Hospitalization Rates for Lung Cancer Compared to County, State, and Healthy People 2020 Benchmarks (Rates per 10,000 Population)

ZIP Code	Mortality All-Cause Cancer	ED Visits Lung Cancer	Hospitalizations Lung Cancer
95606	--	--	9.04
95607	--	--	--
95616	11.21	3.54	2.86
95618	12.64	0.51	2.58
95620	12.74	4.00	7.18
95627*	14.09	2.35	6.83
95637	--	--	7.40
95645*	17.29	3.11	7.00
95653*	--	--	--
95679	--	--	--
95691*	13.78	2.78	6.98
95694*	16.70	3.25	4.79
95695*	20.11	5.21	7.48
95697	17.61	3.28	9.14
95698	--	--	--
95776*	13.60	2.06	2.91
95937	17.23	5.89	10.22
SDH HSA	14.93	3.34	5.15
Yolo County	*15.08*	*3.42*	*4.85*
CA State	*15.41*	*2.68*	*7.95*
Healthy People 2020	*16.10*	--	--

Source: Mortality: CDPH, 2012; ED visits: OSHPD, 2011-2013
*Indicates Focus Community

Five of the 17 SDH HSA ZIP code communities exceeded the county, state and Healthy People 2020 benchmarks for mortality due to all-cause cancer, with the highest rate in Focus Community 95695 (Woodland) at 20.11 deaths per 10,000 population. Four of the ZIP codes had a rate for ED visits due to lung cancer that were higher than the county benchmark of 3.42 ED visits per 10,000, with the highest rate in 95937 (Dunnigan) at 5.89 ED visits per 10,000 population. Nine of the ZIP codes had lung cancer-related hospitalization rates above the county benchmark, with the highest rate being in ZIP code 95937 (Dunnigan), where the rate of hospitalizations was 10.22 hospitalizations per 10,000 population, more than double the county rate.

Rates – Female Breast, Colorectal, Prostate Cancer ED Visits and Hospitalizations

A lack of access to primary health care greatly affects the risk for late diagnosis of cancer, especially those cancers for which early diagnosis and prevention are important in order to reduce further related morbidity and mortality. Table 14 examines rate of ED visits and hospitalizations related to female breast cancer, colorectal cancer (male and female) and prostate cancer.

Table 14: Rates of ED Visits and Hospitalizations for Female Breast Cancer, Colorectal Cancer, and Prostate Cancer (Rates per 10,000 Population)

ZIP Code	ED visits Female Breast Cancer	Hospitalization Female Breast Cancer	ED visits Colorectal Cancer	Hospitalization Colorectal Cancer	ED visits Prostate Cancer	Hospitalization Prostate Cancer
95606	--	--	--	--	--	14.71
95607	7.80	--	--	6.73	12.89	23.99
95616	4.74	6.63	1.04	3.29	5.35	8.25
95618	6.78	7.35	0.94	3.12	4.04	7.68
95620	14.16	10.47	2.05	5.36	7.00	9.97
95627*	4.38	9.93	2.32	6.28	3.56	11.14
95637	6.95	--	--	--	7.39	18.08
95645*	8.77	--	--	6.85	6.16	9.52
95653*	--	12.42	4.08	--	--	--
95679	--	12.17	--	--	--	--
95691*	5.83	8.39	2.50	5.22	4.10	9.36
95694*	4.11	9.37	3.77	6.98	12.21	7.60
95695*	7.48	8.60	2.72	4.21	5.69	5.71
95697	--	--	2.29	12.14	0.00	12.13
95698	--	--	--	--	15.66	24.18
95776*	8.51	9.52	2.56	6.12	4.65	6.34
95937	7.87	--	--	6.27	15.59	9.89
SDH HSA	7.25	8.19	2.20	4.98	6.02	8.37
Yolo County	*6.09*	*7.62*	*2.22*	*4.63*	*5.68*	*7.96*
CA State	*6.59*	*11.07*	*1.85*	*6.43*	*5.79*	*12.37*

Source: OSHPD, 2011-2013
*Indicates Focus Community

Examination of ED visits related to breast cancer in females revealed that eight SDH HSA ZIP codes had rates above the county and state benchmarks. The highest rate of breast cancer-related ED visits was found in ZIP code 95620 (Dixon) at 14.16 ED visits per 10,000 population, and the highest rate of hospitalizations was found in Focus Community 95653 (Madison) at 12.42 per 10,000 population. Rates for ED visits related to colorectal cancer showed that seven ZIP codes had rates above the county and state benchmarks. Hospitalization data for colorectal cancer showed nine ZIP codes had higher rates than the county benchmark rate, with the ZIP code of 95697 (Yolo) substantially higher at 12.14 per 10,000 population. ED visit rates for prostate cancer were higher than the county rate in eight of the ZIP codes, with the highest rate found in 95698 (Zamora) at nearly triple the county rate. Eleven ZIP codes were higher than the county benchmark for prostate cancer hospitalization, with the two highest rates in 95698 (Zamora) and 95607 (Capay) at 24.18 and 23.99 visits per 10,000 population, respectively.

Screening rates – Breast (Mammogram), Cervical (Pap) and Colorectal (Sigmoid/colonoscopy) Cancer

Data on the percent of Medicare enrollees ages 67-69 or older shown in Figure 8 reports that the percent receiving a mammogram within the last two years was higher in Yolo County than the state benchmark. The percent of female adults over the age of 18 that reported having had a pap test in the last three years for Yolo County was also slightly higher than the state at 79.8% than the state percent of 78.3%. The percentage of 50-year-olds in Yolo County that reported having had a sigmoidoscopy or colonoscopy at least once was substantially higher in Yolo County at 75.0% compared to the state at 57.9%.

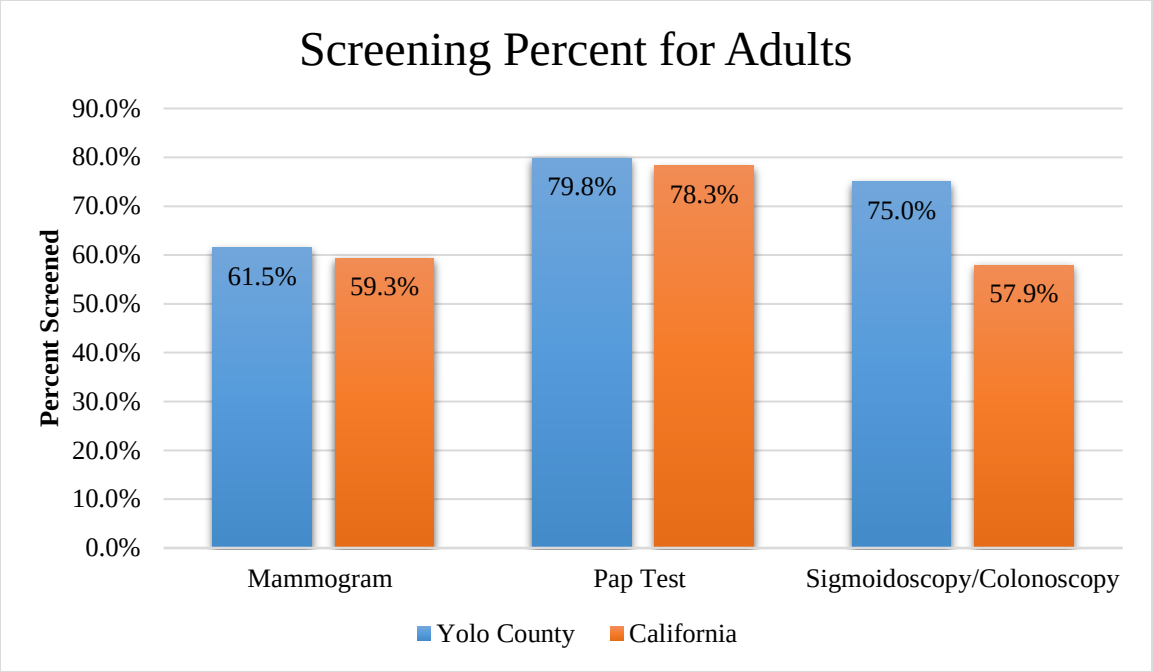

Figure 8: Screening Rates in Adults for Mammograms, Pap Test and Sigmoidoscopy/Colonoscopy

Respiratory Health – Chronic Obstructive Pulmonary Disease (COPD), Asthma, and Tuberculosis

COPD is a progressive lung disease that makes it very hard to breathe and refers to the two main conditions of emphysema and chronic bronchitis.[9] Tobacco smoking is the biggest risk factor for COPD. As many as 6.8 million people have COPD at the national level. Tuberculosis is a respiratory condition caused by a bacterium called *Mycobacterium tuberculosis*. In 2014 there were 2.96 cases of TB per 100,000 population in the United States.[10] In an effort to understand the impact of respiratory illness in SDH HSA, mortality rates for chronic lower respiratory disease (CLRD) are presented in Table 15 below, along with rates of ED visits and hospitalizations related to COPD. Rates of ED visits and hospitalization due specifically to asthma are examined independently in Table 16.

Rates – Mortality, ED Visits and Hospitalizations due to Chronic Obstructive Pulmonary Disease (COPD)

[9] National Heart, Lung and Blood Institute. (2013). *What is COPD?* Retrieved from: http://www.nhlbi.nih.gov/health/health-topics/topics/copd

[10] Centers for Disease Control and Prevention. (2014). Tuberculosis. Retrieved from: http://www.cdc.gov/tb/statistics/default.htm

Table 15: Mortality Rates due to Chronic Lower Respiratory Disease, ED Visits and Hospitalization Rates due to COPD Compared to County, State, and Healthy People 2020 Benchmarks (Rates per 10,000 Population)

	ZIP Code	Mortality CLRD	ED Visits COPD	Hospitalizations COPD
Chronic Lower Respiratory Disease (CLRD) & Chronic Obstructive Pulmonary Disease (COPD)	95606	--	535.30	243.48
	95607	--	302.32	229.17
	95616	2.42	100.49	64.97
	95618	2.00	99.05	70.40
	95620	2.39	229.01	126.76
	95627*	4.15	270.53	129.21
	95637	--	168.48	149.56
	95645*	--	432.22	208.57
	95653*	--	452.49	206.08
	95679	--	295.38	213.12
	95691*	5.51	288.11	198.38
	95694*	2.18	181.55	122.18
	95695*	7.96	370.22	147.62
	95697	--	509.91	117.91
	95698	--	193.73	115.99
	95776*	3.90	289.01	115.68
	95937	4.02	404.68	223.89
	SDH HSA	4.08	226.87	121.79
	Yolo County	*4.43*	*235.04*	*128.61*
	CA State	*3.46*	*218.30*	*154.44*
	Healthy People 2020	--	*56.80*	*50.10*

Source: Mortality: CDPH, 2012; ED visits: OSHPD, 2011-2013
*Indicates Focus Community

Two Focus Communities, 95691 (West Sacramento) and 95695 (Woodland), had mortality rates due to CLRD above the county and state benchmarks. Eleven ZIP codes had rates above both the county and state benchmarks for ED visits due to COPD, with the highest rate found in 95606 (Brooks) at 535.30 ED visits per 10,000 population, more than two times the county benchmark rate and almost 10 times the Healthy People 2020 benchmark. This same ZIP code 95606 (Brooks) had the highest rate of hospitalizations due to COPD at 243.48, compared to the county rate of 128.61 per 10,000 and the Healthy People benchmark of 50.10 per 10,000 population.

Rates – ED Visits and Hospitalizations due to Asthma

Asthma is one of the leading health issues in the US. National data indicate that one in 12 adults and one in 11 children have asthma.[11] Table 16 examines ED visits and hospitalizations due to asthma (all ages).

Table 16: ED Visit and Hospitalization Rates due to Asthma Compared to County and State Benchmarks (Rates per 10,000 Population)

	ZIP Code	ED Visits	Hospitalizations
Asthma	95606	268.41	67.01
	95607	168.22	97.93
	95616	57.62	36.48
	95618	57.13	43.60
	95620	160.19	79.35
	95627*	198.01	47.79
	95637	92.85	59.94
	95645*	268.41	101.79
	95653*	385.83	87.20
	95679	165.82	73.30
	95691*	174.53	95.26
	95694*	119.94	72.84
	95695*	260.88	68.09
	95697	364.26	76.78
	95698	183.43	79.39
	95776*	211.28	63.98
	95937	270.54	90.15
	SDH HSA	150.51	63.69
	Yolo County	*153.89*	*65.31*
	CA State	*148.86*	*70.55*

Source: OSHPD, 2011-2013
*Indicates Focus Community

Thirteen of the SDH HSA ZIP codes had ED visit rates due to asthma that fell above the county and state benchmarks, while 12 ZIP codes fell above the county benchmark for asthma-related hospitalizations. The highest rates of ED visits were found in ZIP codes 95653 (Madison) at 385.83 ED visits per 10,000 population and in 95697 (Yolo) at 364.26 visits per 10,000 population. The highest rate of hospitalizations due to asthma was seen in Focus Community 95645 (Knights Landing) at 101.79 per 10,000 population, which was clearly above both the county and state benchmarks.

Key informants and community members mentioned asthma as a major issue for area residents, especially for those that live in rural areas of the county or live close to agricultural fields. Managing asthma was mentioned as a big area of need. As one focus group participant stated, "*Asthma and allergies are very common because of the fields around that bring pollen and dust. Coughs are very common." (FG_6)* Another resident noted that the medication can be cost prohibitive, "*And the asthma medicine is very expensive*." (FG_4)

[11] Centers for Disease Control and Prevention. (n.d.) *Asthma Fact Sheet*. Retrieved from: http://www.cdc.gov/asthma/impacts_nation/asthmafactsheet.pdf

Percent – Adults Over 18 Years with Asthma

As reported by the Centers for Disease Control and Prevention from the Behavioral Risk Factor Surveillance System survey, the percent of adults over the age of 18 that have ever been told by a doctor that they have asthma was 16.1% for Yolo County, above the state percent of 14.2% in 2011-2012.

Rates – ED Visits and Hospitalizations due to Tuberculosis

Table 17: ED Visit and Hospitalization Rates due to Tuberculosis Compared to County and State Benchmarks (Rates per 10,000 Population)

	ZIP Code	ED Visits	Hospitalizations
Tuberculosis	95606	--	--
	95607	--	--
	95616	0.22	0.19
	95618	--	0.23
	95620	--	--
	95627*	--	--
	95637	--	--
	95645*	--	--
	95653*	--	--
	95679	--	--
	95691*	--	0.18
	95694*	--	0.96
	95695*	0.17	0.33
	95697	--	--
	95698	--	--
	95776*	0.15	0.27
	95937	--	--
	SDH HSA	0.12	0.22
	Yolo County	*0.13*	*0.20*
	CA State	*0.15*	*0.82*

Source: OSHPD, 2011-2013
*Indicates Focus Community

Three of the SDH HSA ZIP codes reporting data had ED visits due to TB at or above both the county and state benchmarks, with the highest rate in ZIP code 95616 (Davis). Four of the ZIP codes had elevated hospitalization rates due to TB compared to the county rate. The highest rate was in Focus Community 95694 (Winters) at 0.96 hospitalizations per 10,000 population, nearly five times higher than the county benchmark.

Mental Health

Mental illness is defined as "health conditions that are characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distress and/or impaired functioning."[12] Depression is the most common type of mental illness in the United States and by 2020 is expected to be the second leading cause of disability worldwide. Mental illness is strongly correlated with many risks for chronic diseases such as physical inactivity, smoking, excessive drinking, and insufficient sleep.[13] Mental health data at the sub-county level is difficult to obtain. ED visits and hospitalizations due to mental health conditions are provided in Table 18 for the SDH HSA.

Rates – ED Visits and Hospitalizations due to Mental Health

Table 18: ED Visit and Hospitalization Rates due to Mental Health Issues Compared to County and State Benchmarks (Rates per 10,000 Population)

	ZIP Code	ED Visits	Hospitalizations
Mental Health	95606	439.07	331.88
	95607	415.50	270.78
	95616	135.07	107.79
	95618	106.13	91.48
	95620	160.04	126.71
	95627*	136.73	112.01
	95637	154.03	114.69
	95645*	170.53	153.16
	95653*	317.36	200.18
	95679	170.35	187.91
	95691*	183.19	193.68
	95694*	148.55	115.95
	95695*	341.27	170.36
	95697	214.87	227.03
	95698	151.83	141.28
	95776*	216.48	130.59
	95937	210.84	162.67
	SDH HSA	190.99	137.95
	Yolo County	*195.58*	*143.92*
	CA State	*149.93*	*186.92*

Source: OSHPD, 2011-2013 *Indicates Focus Community

Seven of the 17 ZIP codes in the SDH HSA had rates of ED visits for mental health conditions that exceeded both the county and state benchmarks. The highest rates of ED visits due to mental health issues were found in the rural areas of 95606 (Brooks) and 95607 (Capay), at 439.07 and 415.50 visits per 10,000 population respectively, over twice the county rate of 195.58 visits per 10,000. Nine of the ZIP codes exceeded the county rate for mental health hospitalizations, with six of those ZIP codes also above the state benchmark of 186.92 hospitalizations per 10,000 population.

[12]Centers for Disease Control and Prevention. (2013). Mental Health Basics. Retrieved from: http://www.cdc.gov/mentalhealth/basics.htm

[13] Ibid.

One of the major findings of the primary data was the high frequency of mental illness in the SDH HSA. The need for access to mental health/behavioral health services was mentioned in 19 of the 22 primary data sources. Changes in the mental health provider network in the last few years has resulted in many residents going untreated for mental illness. Participants discussed the difficulty patients often have in getting adequate mental health care, as demonstrated in the following quotes:

> *Psychiatric services for adults can be tough, especially like long-term support and care, including case management and medication management.* (KI_4)

> *Mental health is an issue. Access to child psychiatry almost doesn't exist in Yolo County, so I'd say that's a problem.* (KI_3)

Mental illnesses discussed ranged from anxiety and depression to schizophrenia and bipolar disorder. Participants spoke about the need for provider sensitivity when working with diverse populations. They also spoke specifically about mental illness in the homeless population, stating the majority of individuals experiencing homelessness suffer from some form of mental illness. One service provider pointed out the stigma that these patients often experience.

> *Mental health services are very difficult to access and there is stigma…There is a stigma to homelessness, to individuals that might show up at the ER that are smelly, that are dirty…so when you look at the quality of life of those populations, I think it would be very, very difficult.* (KI_16)

In addition, mental health services for older adults were brought up frequently. As one provider stated, "*There is currently no geriatric psychiatrist in Yolo County. The county is trying to hire a person but they haven't been able to find somebody*." (KI_15) Participants also spoke about the isolation, loneliness and depression that older adults can experience. As one provider described, "*They're losing people, they're afraid of dying, they're afraid of what might happen next with their health. So, stress and loneliness. Mental health, it's really big for seniors as a whole*." (KI_5)

Rate – Alzheimer's Disease Mortality

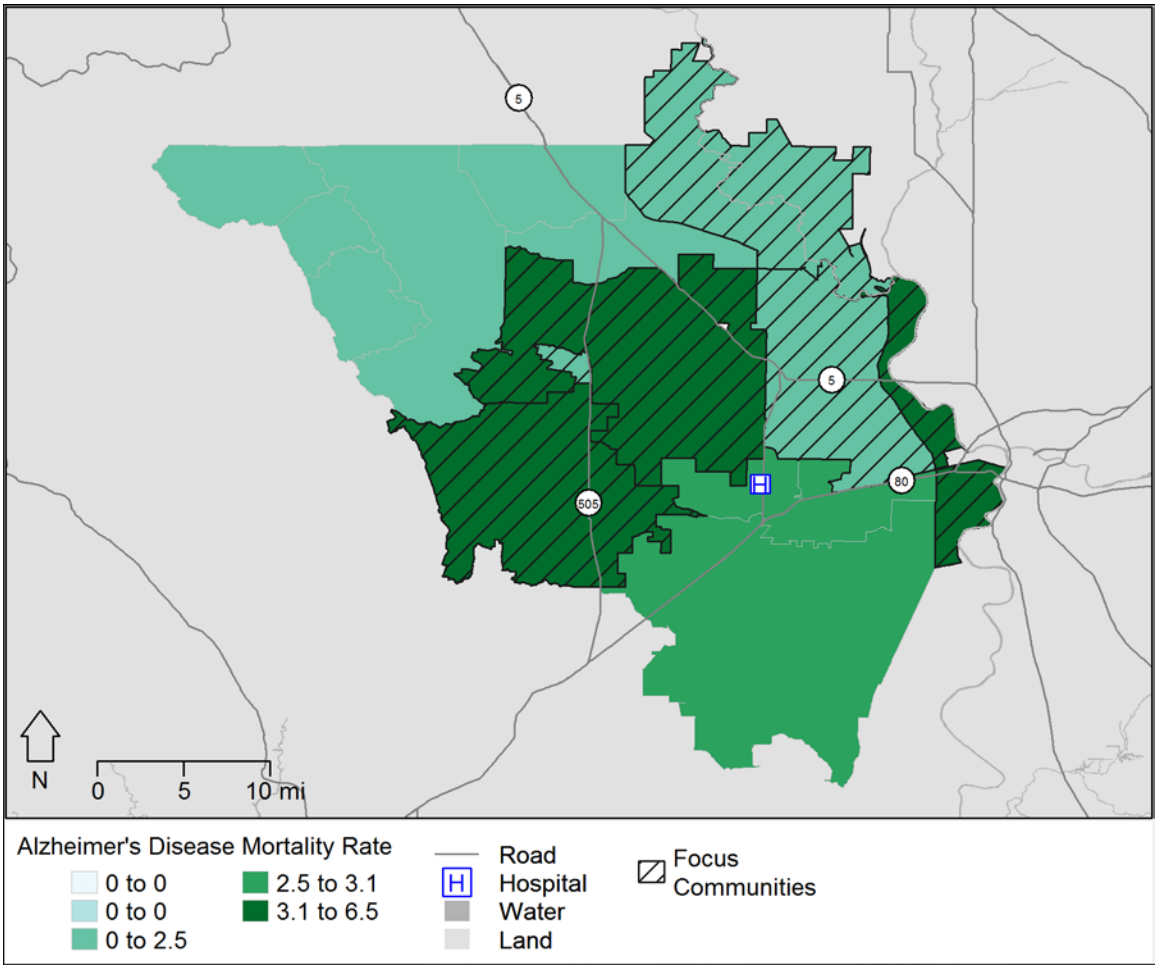

Figure 9: Alzheimer's Disease Mortality Rate

Figure 9 displays areas in the SDH HSA that have elevated rates of mortality due to Alzheimer's disease. Two Focus Communities, 95695 (Woodland) and 95694 (Winters) had notably high rates at 6.45 and 5.85 deaths per 10,000 population, which exceeded the county rate of 3.68 deaths per 10,000. Focus Community 95691 (West Sacramento) had a rate of 3.16 deaths per 10,000, slightly higher than the state rate of 3.12 deaths per 10,000 population.

Alzheimer's and dementia were brought up by CHNA participants as an important health concern within the SDH HSA. Service providers explained that there is a huge need for early and correct assessment of Alzheimer's and dementia, as well as a need for more services. One service provider described the complications related to a dementia diagnosis:

> *That's a huge issue, especially in Yolo County because if you are poor and hoping to get services in mental health, if you have a dementia diagnosis even though you're psychotic, the dementia diagnosis will wash you out of services. So it is kind of separate unfortunately*. (KI_11)

Another service provider explained how Alzheimer's and dementia can have implications for economic security within a community:

> *So there are people who have to quit their jobs and people who have to retire early and even my supervisor…he says it's not a secret that his wife retired so that she could stay home with her mother with Alzheimer's and she's like I can't ever go anywhere because I have to be home all the time because she's not safe. So there's a huge gap for the people in the middle of that who don't have the finances so that's a barrier...* (KI_15)

Percent – Adults Reporting Insufficient Social and Emotional Support at the HSA Level

Aggregated data from the Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System survey for 2006-2012 showed that 23.7% of respondents in Yolo County, over the age of 18, indicated that they receive insufficient social and emotional support most of the time. This percent was slightly lower than the state percent at 24.6% of respondents. Participants also spoke about the importance of residents feeling a sense of social and community connectedness with one another.

Dental Health

Oral health is important to overall quality of life. Data used in this assessment to examine the status of oral health in the Sutter Davis HSA were ED visits and hospitalization due to dental conditions. This data is dated from 2011 – 2013, before the reinstatement of dental coverage under the state Medicaid (Medi-Cal) program.

Rates – ED Visits and Hospitalizations due to Dental Health

Table 19: ED Visit and Hospitalization Rates due to Dental Issues Compared to County and State Benchmarks (Rates per 10,000 Population)

	ZIP Code	ED Visits	Hospitalizations
Dental Health	95606	119.40	--
	95607	69.84	--
	95616	20.40	3.64
	95618	17.54	4.88
	95620	37.98	6.77
	95627*	88.91	8.52
	95637	25.33	--
	95645*	95.16	7.80
	95653*	67.68	10.69
	95679	115.84	--
	95691*	53.60	10.80
	95694*	38.71	5.76
	95695*	68.16	7.65
	95697	89.41	8.72
	95698	47.69	--
	95776*	54.56	6.01
	95937	63.69	11.26
	SDH HSA	43.15	7.01
	Yolo County	*47.18*	*6.89*
	CA State	*41.34*	*7.81*

Source: OSHPD, 2011-2013
*Indicates Focus Community

Rates of ED visits due to dental health issues were elevated in 12 of the 17 SDH HSA ZIP codes. ZIP codes 95606 (Brooks) and 95679 (Rumsey) had the highest rates for ED visits at more than double the county and state rates. The rate for hospitalizations was high in seven ZIP codes, with 95937 (Dunnigan) experiencing the highest rate at 11.26 visits per 10,000 population, well above the county and state benchmarks.

Key informants and focus group participants brought up dental health as a major concern within the SDH HSA. Participants discussed the lack of dentists that accept Denti-Cal, the lack of comprehensive care and the high cost of paying out of pocket for dental care. One resident stated, "*Many people unfortunately avoid taking care of their dental needs because it is too expensive and they might lose their molars for lack of funds.*" (FG_4)

Injury – Intentional (Suicide and Self- inflicted injury) and Unintentional

In 2013, suicide was the 10th leading cause of death nationally, and the second leading cause of death for Americans 15-34 years of age.[14] Unintentional injury was the third leading cause of death overall, but the first leading cause of death for Americans 1-44 years of age.

[14] Centers of Disease Control and Prevention. (2015). Ten leading causes of death by age group – 2013. Retrieved from: http://www.cdc.gov/injury/wisqars/leadingcauses.html

Rates – Mortality, ED Visits and Hospitalizations due to Suicide and Self-inflicted Injury

Table 20: Mortality Rates due to Suicide and ED Visits and Hospitalization Rates due to Self-Inflicted Injury Compared to County, State, and Healthy People 2020 Benchmarks (Rates per 10,000 Population)

	ZIP Code	Mortality	ED Visits	Hospitalizations
Suicide/Self-Inflicted Injury	95606	--	10.20	5.48
	95607	--	8.62	--
	95616	0.52	8.87	2.86
	95618	1.25	5.05	2.69
	95620	--	8.54	3.21
	95627*	1.21	5.09	4.79
	95637	--	--	--
	95645*	--	5.54	4.98
	95653*	--	10.18	--
	95679	--	--	--
	95691*	1.24	10.13	3.97
	95694*	--	9.75	3.35
	95695*	1.04	10.15	5.77
	95697	--	7.92	--
	95698	--	9.06	5.19
	95776*	0.78	7.91	4.95
	95937	--	5.42	4.83
	SDH HSA	1.03	9.02	3.98
	Yolo County	*0.95*	*8.99*	*4.05*
	CA State	*1.04*	*8.18*	*4.40*
	Healthy People 2020	*1.00*	--	--

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013
*Indicates Focus Community

Mortality rates due to suicide were higher than the county rate in four SDH HSA ZIP codes, with the highest rates in 95618 (Davis) and 95691 (West Sacramento). ZIP code 95606 (Brooks) had the highest rate for ED visits due to self-inflicted injury at 10.20 visits per 10,000 population, higher than both the county and state benchmarks. Seven ZIP codes had elevated rates for hospitalizations due to self-inflicted injury with the highest rate in Focus Community 95695 (Woodland) at 5.77 hospitalizations per 10,000 population.

Suicide and self-inflicted injury came up as noteworthy concerns within the primary data, and participants spoke about the need for more mental health services and suicide prevention programs. One service provider explained:

> *There is the saying that suicide isn't a wish to die, it is a wish for emotional pain to end. When someone goes to the doctor, to the physician and it is hard, I have friends who are physicians and I know the difficulty that they have. They have so many people that they have to treat and go from one to another, they have to make quick decisions and all of this, but for those people that are coming in that are just waiting for someone, this healthcare professional or someone to be able to ask these questions and that's what I would like to see*. (KI_16)

Rates – Mortality, ED Visits and Hospitalizations due to Unintentional Injury

Table 21: Mortality, ED Visit and Hospitalization Rates due to Unintentional Injury Compared to County and State Benchmarks (Rates per 10,000 Population)

	ZIP Code	Mortality	ED Visits	Hospitalizations
Unintentional Injury	95606	--	1829.91	297.84
	95607	--	836.24	204.36
	95616	1.09	519.20	80.80
	95618	1.71	407.75	68.78
	95620	2.59	762.98	125.27
	95627*	--	718.04	144.31
	95637	--	443.87	158.63
	95645*	--	818.27	176.42
	95653*	--	1179.31	178.12
	95679	--	1211.13	221.97
	95691*	3.70	700.54	165.00
	95694*	2.08	644.23	115.40
	95695*	4.47	778.54	140.22
	95697	--	1017.91	185.51
	95698	--	693.14	190.64
	95776*	2.77	675.70	107.55
	95937	--	839.10	174.99
	SDH HSA	2.81	640.60	116.81
	Yolo County	*2.84*	*645.28*	*121.09*
	CA State	*2.88*	*666.38*	*154.85*
	Healthy People 2020	*3.40*	--	--

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013
*Indicates Focus Community

Two ZIP codes in the SDH HSA had elevated mortality rates for unintentional injury that exceeded the county, state, and Healthy People 2020 benchmarks, with the highest rate seen in Focus Community 95695 (Woodland). ED visits and hospitalizations for unintentional injury were high in 13 ZIP codes, with 95606 (Brooks) at 1829.91 ED visits per 10,000 population, substantially higher than the county and state benchmarks. This same ZIP Code, 95606, had the highest hospitalization rate for unintentional injury. Another ZIP code with highly elevated rates for both ED and hospitalization visits due to unintentional injury was 95679 (Rumsey).

Risk Behaviors and Living Conditions in the SDH HSA

Risk behaviors contribute to increased risk for morbidity and mortality for most health conditions in a community, and are often the focus of community-based health promotion efforts. These risk behaviors include smoking, poor nutrition, physical inactivity, violent behavior, alcohol and drug usage, and risky sexual behaviors. In order to gain a clear understanding of reasons behind why individuals engage in risky behavior, it is equally important to consider the conditions in which they live. These living conditions include the physical, social, economic/work, and service environment.

Risk Behaviors – Substance Abuse, Poor Nutrition, Physical Inactivity, and Risky Sexual Behavior

This section of the report will detail all indicators used in the assessment to examine the various risk behaviors in the SDH HSA.

Substance Abuse

Substance abuse, specifically the use of alcohol and drugs, is a leading preventable cause of death in the United States, costing states millions of dollars each year in treatment costs.[15] Alcohol impaired driving is the cause of 33% of all fatal car accidents.[16] This assessment included examination of multiple indicators addressing substance abuse. The indicators presented here include: rates of ED visits and hospitalizations related to substance abuse by ZIP code, alcohol and tobacco smoking prevalence, liquor store access and percent of household expenditures for alcohol and tobacco. Prescription drug abuse has also become a major problem for adults nationally.[17]

[15] Centers for Disease Control and Prevention. (2015.) *Alcohol and Drug Use*. Retrieved from: http://www.cdc.gov/stltpublichealth/didyouknow/topic/alcohol.html
[16] Ibid.
[17] Ibid.

Rates – ED Visits and Hospitalizations due to Substance Abuse

Table 22: ED Visit and Hospitalization Rates due to Substance Abuse Compared to County and State Benchmarks (Rates per 10,000 Population)

	ZIP Code	ED Visits	Hospitalizations
Substance Abuse**	95606	1703.66	337.40
	95607	648.91	243.91
	95616	187.11	52.28
	95618	127.60	44.17
	95620	291.83	103.97
	95627*	411.19	160.77
	95637	269.63	138.39
	95645*	559.04	185.08
	95653*	794.75	149.53
	95679	1245.47	267.05
	95691*	406.08	198.89
	95694*	265.58	103.96
	95695*	618.50	152.29
	95697	612.32	152.81
	95698	193.15	140.44
	95776*	383.46	103.47
	95937	471.66	198.39
	SDH HSA	341.30	111.95
	Yolo County	*360.54*	*121.75*
	CA State	*253.8*	*145.00*

Source: OSHPD, 2011-2013 **coded under Mental Health codes
*Indicates Focus Community

The rate of substance abuse-related ED visits in Yolo County was substantially higher than the state rate. Eleven of the SDH HSA ZIP codes exceeded the county benchmark for ED visits, while 12 ZIP codes were above the county rate for substance abuse-related hospitalizations. By far, ZIP code 95606 (Brooks) had the highest rate of ED visits and hospitalizations related to substance abuse, at nearly five times the county rate for ED visits and nearly three times the county rate for hospitalizations. ZIP code 95679 (Rumsey) also had elevated rates for substance abuse-related ED visits and hospitalizations.

Fifteen out of 22 sources mentioned the need for more inpatient substance abuse treatment facilities in the SDH HSA, with many saying that the current infrastructure for care is not meeting the demand. Many residents seek episodic care in the emergency departments and community clinics in their neighborhoods. However, such lack of consistent intensive care results in a revolving door for many residents struggling with substance abuse. Many participants talked about the relationship between substance abuse and mental health, for example:

> *I don't think we can ignore substance abuse as part of the mental health equation. I mean, I think that has to be up there when 77% of our jail population is there because of substance related crimes and 75% of our child welfare cases involve substances and probably at least 50% of our hospitalizations, they have substances onboard when they come in the ER…I think we really need*

to work together between systems to develop a better continuum of care for people with substance abuse disorders. (KI_14)

Similarly, a number of participants spoke about how substance abuse affects community cohesion. One resident stated:

> *I feel that in my community there is a lot of people that have done a lot of drug use or substance abuse and these persons can't control themselves and even their relatives can't tolerate them any longer. They let them go out on the street and then, us, the neighbors end up looking after them, so they don't get hurt, but it feels as though their own relatives want them gone or to go away and I feel that is very significant and upsetting, too.* (FG_4)

Percent – Adults Reporting Excessive Alcohol Consumption

Results of the national Center for Disease Control and Prevention Behavioral Risk Factor Surveillance System survey indicate that approximately 18.9% of respondents in Yolo County report engaging in excessive alcohol consumption (more than 2 drinks per day for males and more than 1 per day for females), a percent higher than the state rate at 17.2%.

Rate – Liquor Store Access per 100,000 Population

Data on liquor stores from the US Census Bureau for 2012 reveal that Yolo County has 6.77 liquor stores per 100,000, lower than the state rate of 10.02 per 100,000 population.

Percent – Home Expenditures Spent on Alcohol

Alcohol expenditure data from Nielsen shows the percent of at-home expenditures on alcohol at the census tract level. Data for 2014 aggregated to the HSA level shows that the percent of expenditures for the SDH HSA was 15.5%, above the state percent at 12.9%.

Percent – Prevalence of Tobacco Usage

Data taken from the California Health Interview Survey for 2014 shows that the percent of smoking for adults and teens was 7.5% in Yolo County, lower than the state at 10.8%.

Percent – Home Expenditures Spent on Tobacco

Tobacco expenditure data from Nielsen indicates the percent of at-home expenditures on tobacco at the census tract level. This indicator aggregated to the HSA level shows that the percent of expenditures for the SDH HSA is 1.1% compared to the state percent at 1.0% for 2014.

Poor Nutrition and Physical Inactivity

Consideration of diet and exercise data for this health assessment also includes an examination of obesity data. Though obesity is a clear outcome of poor dietary choices and a lack of adequate exercise, it is also a contributor to most of the morbidity and mortality health conditions mentioned in the previous sections of the report. Many factors contribute to high rates of obesity, poor nutrition, lack of physical activity and chronic disease in the SDH HSA. These factors include conditions of poverty, access to health care and healthy foods, pollution in a community, and education to name a few.

Percent – Overweight and Obesity in Youth

Table 23: Percent Overweight and Obese in Youth Grades 5th, 7th and 9th as Measured by the Fitnessgram

Indicator	Percent Overweight	Percent Obese
Yolo County	19.8%	17.7%
SDH HSA	14.1%	29.0%
CA State	*19.3%*	*19.0%*

California Department of Education, 2013-2014

As the data presented in Table 23 indicates, the percent of overweight youth is slightly higher in Yolo County in comparison to the state benchmark. The percent of youth experiencing obesity is substantially higher in the SDH HSA compared to the Yolo County and state benchmark. Additionally, data by race and ethnicity indicated that in Yolo County, 17.3% of White students are overweight, compared to 22.5% for Hispanic students. Unfortunately, overweight and obesity data are seldom available at the sub-county level in order to examine how rates compare within the SDH HSA.

Participants spoke about youth obesity and the many factors that play into this health outcome. One service provider said:

> *I see a lot of people who seem to be overweight and the children that are overweight, and it just takes a lot to buy healthily, cook healthily, and we're trying to address that...so I think a barrier to healthy eating is being poor*. (KI_13)

Percent – Mothers Reporting Breastfeeding

Research indicates that when a child is breastfed, the risk for negative health conditions decreases; specifically, there is a reduction in the risk for infant mortality. According to data from the California Department of Public Health for 2012, the percent of mothers' breastfeeding their infants at birth was higher for Yolo County at 96.2% compared to the state percent of 93.0%. Data by race and ethnicity in Yolo County revealed that 97.2% of Whites, 95.6% of Hispanic/Latinos, and 95.9% of Asians report breastfeeding, in comparison to only 88.1% of Blacks.

Area – USDA Defined Food Desert

The USDA defines a food desert as: "urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food. Instead of supermarkets and grocery stores, these communities may have no food access or are served only by fast food restaurants and convenience stores that offer few healthy, affordable food options."[18] The lack of access to healthy food results in a poor diet and can lead to higher levels of obesity and other diet-related diseases, such as diabetes and heart disease. The USDA further describes a food desert as "a census tract with a substantial share of residents who live in low-income areas that have low levels of access to a grocery store or healthy, affordable food retail outlet."[19] Figure 9 identifies the food deserts in the SDH HSA.

[18] US Department of Agriculture. (n.d.) *Food Deserts*. Retrieved from: https://apps.ams.usda.gov/fooddeserts/fooddeserts.aspx

[19] Ibid.

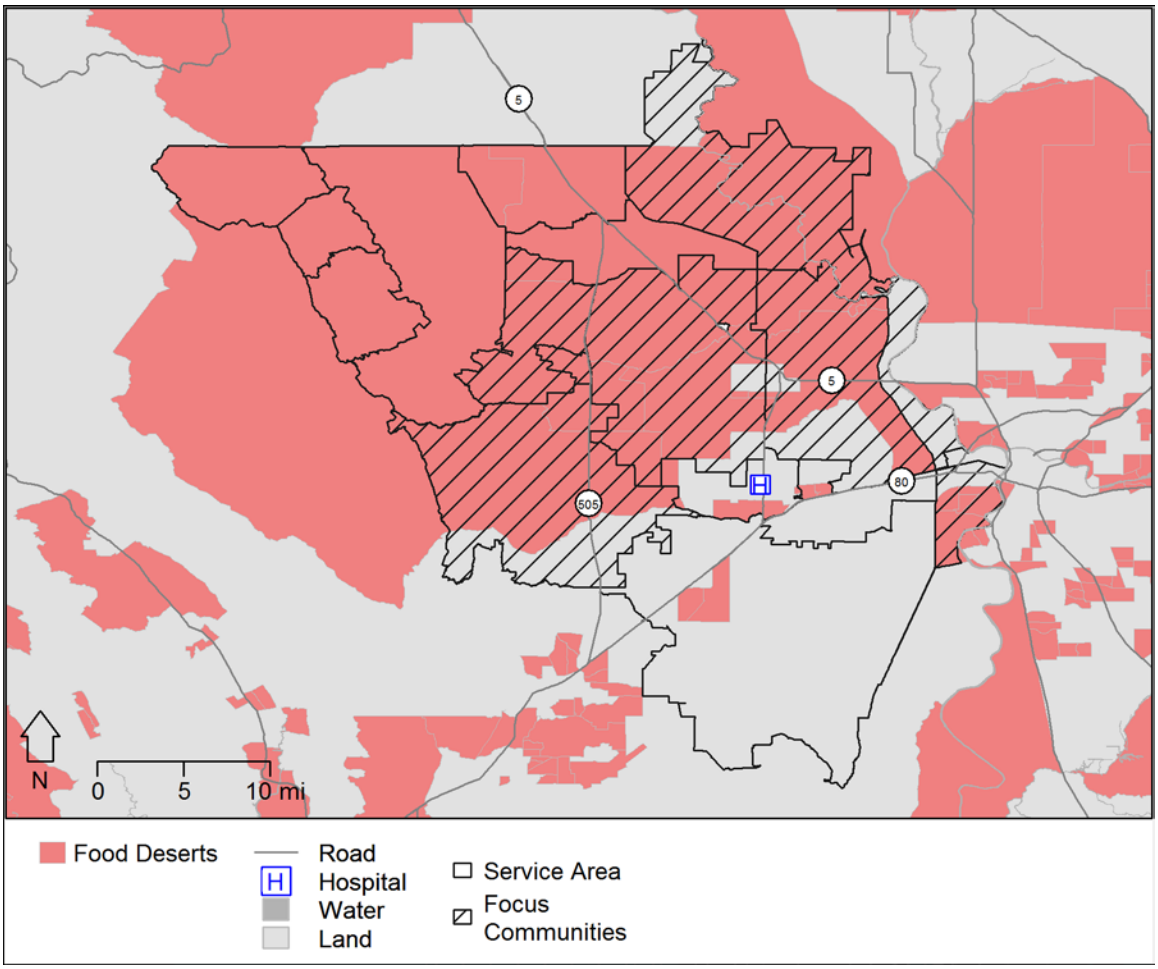

Figure 10: USDA Defined Food Deserts

As shown in Figure 10, portions of all 17 SDH HSA ZIP codes are designated as USDA food deserts. Eight of those ZIP codes are entirely within a food desert, mostly in the rural and remote areas of western Yolo County: 95606 (Brooks), 95607 (Capay), 95627 (Esparto), 95637 (Guinda), 95653 (Madison), 95679 (Rumsey), 95698 (Zamora) and 95937 (Dunnigan).

Primary data indicated that a lack of retail grocery stores in low income areas in the SDH HSA means a lack of access to fresh fruits or vegetables for residents. Participants spoke about there being an absence of high quality grocery stores and healthy foods in the rural and remote areas of the county, yet an overabundance of unhealthy options. In addition, participants spoke about the need for nutrition education presented in a culturally appropriate way. As one service provider mentioned:

> *The other thing I think has an impact is having community health educators who can culturally engage their own populations to teach them that, yeah this was the norm in the country that we lived in; however, do it slowly with patience because they're not going to change overnight, but help them to see that they are their own self advocates for their health and the fact that their food contains so much sugar and is high in fat. You're eating more of it because of the convenience store that is right there.* (KI_1)

Percent – Population with Food Insecurity and Receiving Supplementary Nutrition Assistance Program

According to Feeding America, the percentage of population with food insecurity in 2013 for Yolo County was higher than the state percent. Moreover, the percentage of population receiving SNAP (Supplementary Nutrition Assistance Program) benefits in 2011 was lower for Yolo County compared to the state percent.

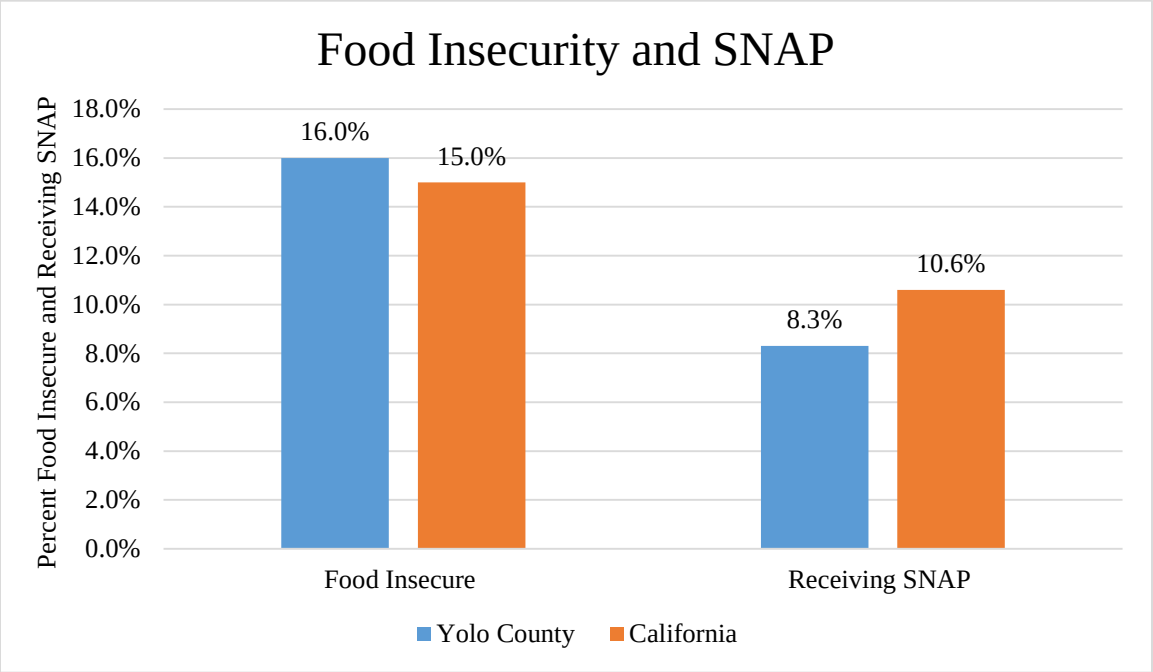

Figure 11: Percent Food Insecure and Percent Receiving SNAP

Index – Modified Retail Food Environment Index (mRFEI)

The modified Retail Food Environment Index (mRFEI) consists of two aspects of food availability: both the presence of food outlets within a ZIP code, as well as the relative abundance of healthier food outlets. Negative mRFEI values occur in areas with no food outlets. All other values report the percentage of healthier food outlets, from among all food outlets, in the ZIP code. Figure 12 shows the mRFEI for the SDH HSA. Lighter areas indicate poor or no access to healthy food outlets and darker areas indicate greater access to healthy food outlets.

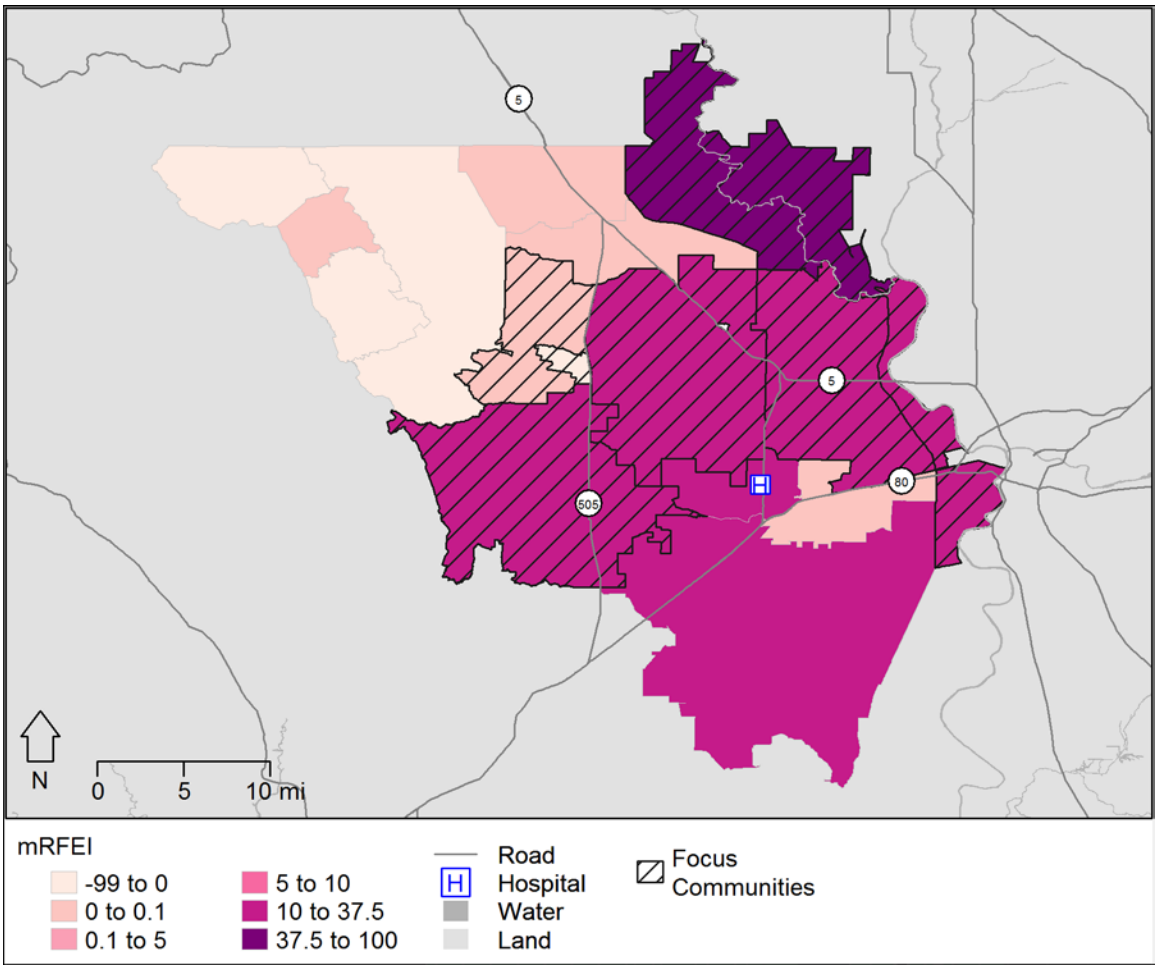

Figure 12: Modified Retail Food Environment Index (mRFEI)

As shown in Figure 12, many ZIP codes in the SDH HSA have lower mRFEI scores, indicating poor or no access to healthy foods. Most notable to mention are the rural ZIP codes of 95606 (Brooks), 95607 (Capay), 95653 (Madison), 95679 (Rumsey), and 95697 (Yolo).

Rate – Fast Food Restaurants and Grocery Stores per 100,000 Population

According to business data reported by the US Census Bureau, the rate of fast food restaurants for the SDH HSA was 69.75 per 100,000 population, lower than the state rate of 74.51 per 100,000 population. Additionally, the rate of grocery stores for the SDH HSA was slightly lower than the state rate.

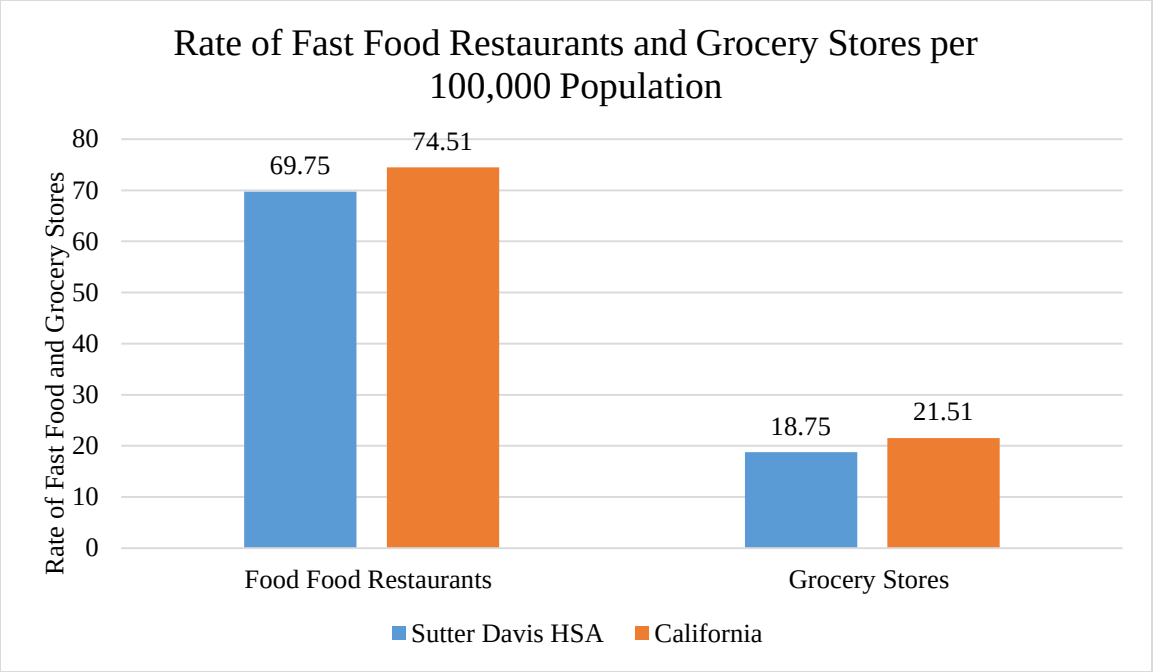

Figure 13: Fast Food Restaurants and Grocery Stores per 100,000 Population

Percent – Youth Eating Less than Five Servings of Fruits and Vegetables a Day

Data from the 2011-2012 California Health Interview Survey indicated that 44.2% of youth in Yolo County report eating less than five servings of fruits and vegetables daily, below the state rate at 47.4%. Examination by race and ethnicity showed that in Yolo County, 30.8% of youth who are White report eating less than five servings a day, compared to Hispanic/Latino youth at 34.2%.

Percent – Home Expenditures Spent on Fruits and Vegetables and Soda

Data from Nielsen for 2014 show the percent spent for fruits and vegetables for the SDH HSA was 13.4%, lower than the state percent at 14.1%. However, the inverse is true for soda expenditures. The soda expenditure percent is 4.0%, higher than the state percent of 3.6%.

Percent – Physical Inactivity for Adults and Youth

Indicators that examine physical activity in the SDH HSA are very hard to find. In 2012, the Centers for Disease Control (CDC) reported that the percent of adults over the age of 20 indicating they perform no regular physical activity for the SDH HSA was 18.2%, compared to the state rate of 16.6%. Physical inactivity for youth in the SDH HSA, as reported using the Fitnessgram Physical Fitness Test, was also higher than the state. There were 44.0% of youth in grades 5, 7, and 9 classified as physically inactive, compared to the state percent of 35.9%. Examination of youth physical inactivity by race and ethnicity in Yolo County revealed that while 28.7% of Whites were classified as physically inactive, 33.8% of Blacks, 25.0% of Asians, 47.8% of Hispanic/Latinos and 35.5% of non-Hispanic multiple race were classified as physically inactive.

The lack of physical activity was mentioned by participants in half of the SDH HSA primary data sources. Interviewees discussed the need for more active living resources, such as classes, parks, affordable gyms and other recreational opportunities, especially for young people. Participants also talked about the barriers to physical activity, such as the need for improved infrastructure in some communities to allow

more people to walk and bike safely. In addition, people spoke about other cultural barriers to active living such as the hot climate, lack of motivation or time, and the use of technology. One service provider described how screen time is related to youth physical inactivity:

> *When you see the teenagers all walking together but, they're not talking to one another. They're all on their cell phones individually. It's a very isolated kind of growing up period now that we didn't experience and I think that I don't know how you reach those kids necessarily to get them more involved and out of the house and out of those games and off the cell phones and all the social media kind of things. I think that's something that's something that really needs to be looked at as to how to keep our youth population exercising more when you don't always have PE as we use to call it in school. They just don't have those kind of opportunities and encouraging them to get out and start doing thing.* (KI_1)

Percent of Population Living Within One-half Mile of a Park

Access to recreational areas contributes to whether or not people will be physically active. Figure 14 shows the percent of the population by ZIP code in the SDH HSA that lives within one-half mile of a recreational park. The lighter colors denote fewer residents with nearby park access and darker colors show more residents living within one-half mile of a park.

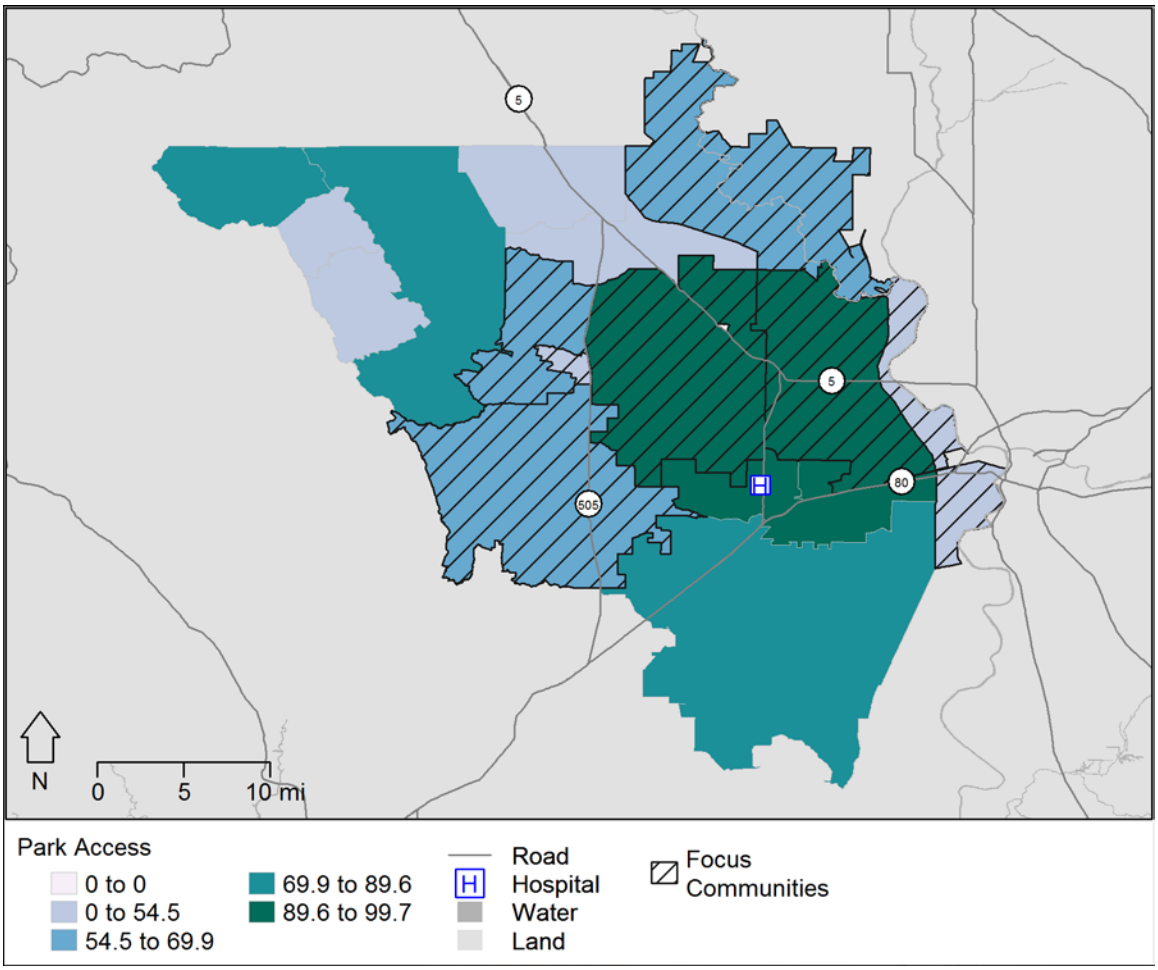

Figure 14: Percent of Population by ZIP Code that Live within One-Half Mile of a Park

As displayed in Figure 14, access to a park varies among the ZIP codes. ZIP codes 95606 (Brooks), 95637 (Guinda), 95653 (Madison), 95697 (Yolo), 95698 (Zamora), and 95937 (Dunnigan) have the lowest percent of population with access to a park in their community. Having access to a park or physical space where people of all ages can engage in play and be physically active is important for overall health and wellbeing.

Risky Sexual Behavior -- Teen Birth Rate and Sexually Transmitted Infections (Chlamydia, Gonorrhea, and HIV/AIDS)

Rate – Teen Births to Women Under the Age of 20

The teen birth rate (births to women under the age of 20) is an indicator used in this assessment to examine sexual behavior throughout the SDH HSA. Data from 2013 indicates that the national rate for teen births (age 15-19) currently sits at 26.5 per 1,000 live births.[20] Figure 15 shows the teen birth rate for the SDH HSA.

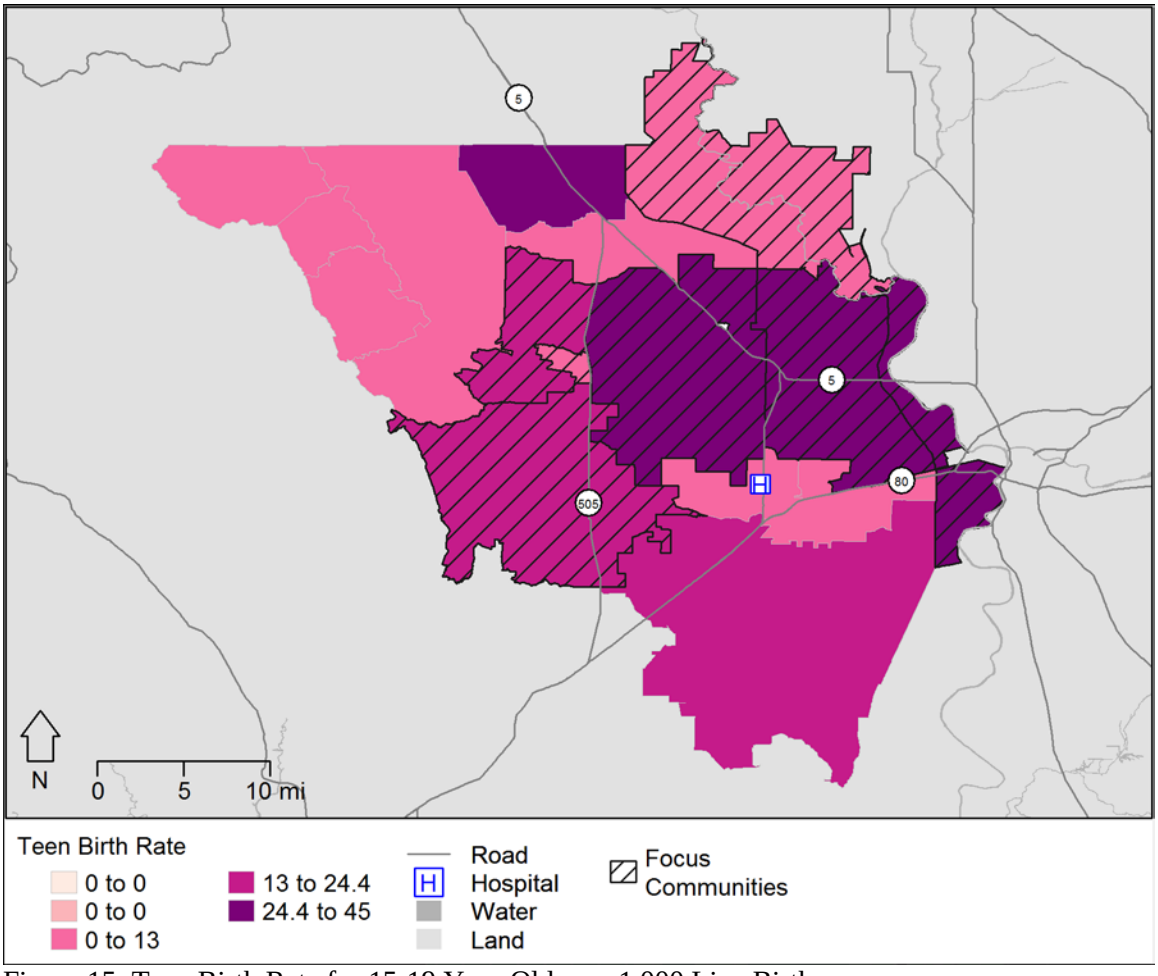

Figure 15: Teen Birth Rate for 15-19 Year-Olds per 1,000 Live Births

[20] Centers for Disease Control and Prevention. (2015). *Teen Births*. Retrieved from: http://www.cdc.gov/nchs/fastats/teen-births.htm

Compared to the national benchmark, many SDH HSA ZIP codes have high teen birth rates. Three of the 17 ZIP codes have teen birth rates over the national rate of 26.5 per 1,000 live births. These three ZIP codes include the areas of 95937 (Dunnigan), 95776 (Woodland), and 95695 (Woodland), at 44.93, 36.03, and 24.50 teen births per 1,000 live births.

Sexually Transmitted Infections (STI) - Chlamydia, Gonorrhea, and HIV/AIDS

Rates of STIs, including chlamydia, gonorrhea, and HIV, illustrate the presence of risky sexual behavior in the SDH HSA. Since STIs are largely preventable, knowing where community members are infected by STIs helps with targeting interventions for treatment and prevention. Table 24 displays incidence rates for chlamydia and gonorrhea by ZIP code for 2014, compared to the county and state benchmarks. Incidence rates are a measure of risk for a condition. Table 25 shows ED visits and hospitalizations related to STIs, as well as those specific to HIV/AIDS.

Rates – Chlamydia and Gonorrhea Incidence

Table 24: Chlamydia and Gonorrhea (New Cases) Compared to County and State Benchmarks (Rates per 10,000 Population)

	ZIP Code	Chlamydia Incidence	Gonorrhea Incidence
STI Incidence	95606	--	--
	95607	--	--
	95616	23.54	3.75
	95618	30.45	2.93
	95620	--	--
	95627*	34.69	
	95637	--	--
	95645*	--	--
	95653*	--	--
	95679	--	--
	95691*	36.07	9.86
	95694*	16.99	7.99
	95695*	42.46	14.33
	95697	--	--
	95698	--	--
	95776*	41.21	11.32
	95937	37.88	
	Yolo County	*35.89*	*9.54*
	CA State	*45.34*	*11.68*

Source: Yolo County Public Health, 2014
*Indicates Focus Community

Incidence rates for chlamydia were higher than the county benchmark in four SDH HSA ZIP codes, with the highest rate in Focus Community 95695 (Woodland), where 42.46 new cases occur per 10,000 population. Incidence rates for gonorrhea are higher than the county benchmark in three ZIP codes, with the highest rate in 95695 (Woodland), where 14.33 new cases occur per 10,000 population, exceeding both the county and state rates.

Rates – ED Visits and Hospitalization due to STIs and HIV/AIDS

Table 25: ED Visit and Hospitalization Rates due to STIs and HIV/AIDS Compared to County and State Benchmarks (Rates per 10,000 Population)

	ZIP Code	ED visits STIs	Hospitalizations STIs	ED visits HIV/AIDS**	Hospitalizations HIV/AIDS**
Sexually-Transmitted Infections	95606	--	--	--	--
	95607	--	--	--	--
	95616	0.43	1.11	0.15	0.29
	95618	0.42	1.05	0.15	0.28
	95620	1.17	1.98	0.00	1.32
	95627*	--	--	--	--
	95637	--	--	--	--
	95645*	2.16	--	--	--
	95653*	--	--	--	--
	95679	--	--	--	--
	95691*	2.32	2.23	1.45	0.60
	95694*	1.76	0.81	0.40	--
	95695*	2.05	2.42	0.55	0.99
	95697	--	--	--	--
	95698	--	--	--	--
	95776*	1.99	1.86	0.33	0.79
	95937	2.95	--	--	--
	SDH HSA	1.42	1.69	0.51	0.65
	Yolo County	*1.51*	*1.68*	*0.53*	*0.60*
	CA State	*3.20*	*4.58*	*1.95*	*3.36*

Source: OSHPD, 2011-2013
**HIV/AIDS is considered a subcategory of STIs in the ICD 9 diagnostic codes.
*Indicates Focus Community

As indicated in Table 25, six SDH HSA ZIP codes had STI-related ED visit rates that exceeded the county benchmark, while four ZIP codes had STI-related hospitalization rates that were above the county benchmark. ZIP code 95937 (Dunnigan) had the highest rate of ED visits for STIs, while Focus Community 95695 (Woodland) had the highest rate for STI-related hospitalizations. Rates of both HIV-related ED visits and hospitalizations exceeded county benchmarks in Focus Community 95695 (Woodland). The highest rate of HIV-related ED visits was in 95691 (West Sacramento), where 1.45 visits occurred per 10,000 population. The highest rate of hospitalizations for HIV was in 95620 (Dixon), where 1.32 hospitalizations occurred per 10,000 population. Focus Community 95695 (Woodland) exceeded county benchmarks for ED visits and hospitalization rates related to STIs and HIV/AIDS.

Rate – Prevalence of HIV/AIDS per 100,000 Population

The CDC reported that for 2010, the prevalence of HIV/AIDS in the SDH HSA was 108.5 cases per 100,000 population, lower than the state at 363.0 cases per 100,000 population. Data by race and ethnicity for HIV/AIDS prevalence in Yolo County showed that Whites and Hispanics/Latinos had 111.92 and 113.47 cases per 100,000, respectively, while Blacks had 520.34 cases per 100,000 population, nearly five times the county rate.

Percent – Adults Never Screened for HIV

Data from the national Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System survey for 2011-2012 indicates that as many as 61.8% of respondents between 18-70 years of age in Yolo County report never being screened for HIV, higher than the state percent of 60.8%.

Living Conditions – Physical Environment, Social Environment, Economic/Work Environment and Service Environment

This section of the report will examine various indicators which help to illuminate the daily living conditions of SDH HSA residents. The indicators are organized in accordance to the BARHII model discussed previously in the sections: physical environment, social environment, economic/work environment, and service environment.

Physical Environment

Examination of the physical environment of the SDH HSA includes indicators of transportation, traffic accidents, housing, and pollution.

Area – Population Living One-Half Mile Near a Transit Stop

There are limits to the distances community members will travel to access public transportation services. These distances are documented in research and vary due to a number of factors including climate, attractiveness of the area, and the amount of traffic on streets.[21] Most research states that individuals will travel no more than one-fourth to one-third of a mile to access public transportation. Identifying areas in the HSA that are at least one-half mile from a transit station helps to highlight transportation availability in the area. Figure 16 shows areas of the SDH HSA that are within one-half mile from a transit stop.

[21] *Building Transit-Friendly Communities: A design and development strategy for the Tri-State Metropolitan Region* (1997). Regional Plan Association. Retrieved from: http://ntl.bts.gov/DOCS/GL.html

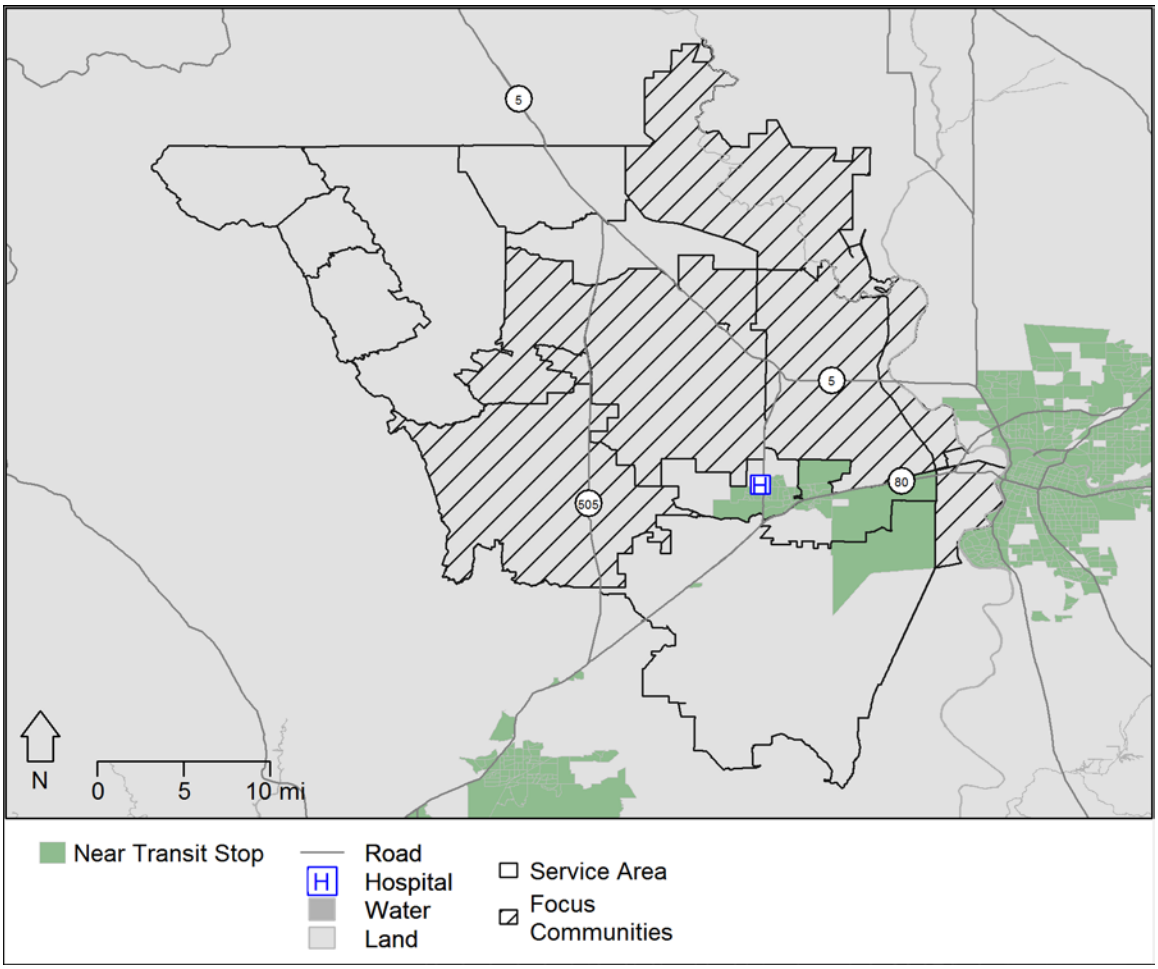

Figure 16: Locations in the HSA within One-Half mile of a Transit Stop

In Figure 16, grey shaded portions of the map are more than a half-mile from a transit stop. As the figure displays, almost all ZIP codes in the SDH HSA are in areas that lack public transportation availability, with the exception of 95616 (Davis), 95618 (Davis) and 95620 (Dixon).

Percent – Households with No Vehicle

Having access to a vehicle is an important factor in the determination of a person's ability to access the things they need to stay healthy. A working vehicle means the ability to get to work, to the grocery store, to school, and to access health care. Figure 17 shows the percent of households with no vehicle in the SDH HSA, which is particularly an issue for seasonal or agricultural workers. As one community member stated, *"A lot of people here are seasonal workers and don't drive, and when they need to go into town for an appointment they look for people to give them rides" (FG_6).* Having no access to a vehicle, especially if there aren't reliable public transportation options, may significantly affect access to other resources.

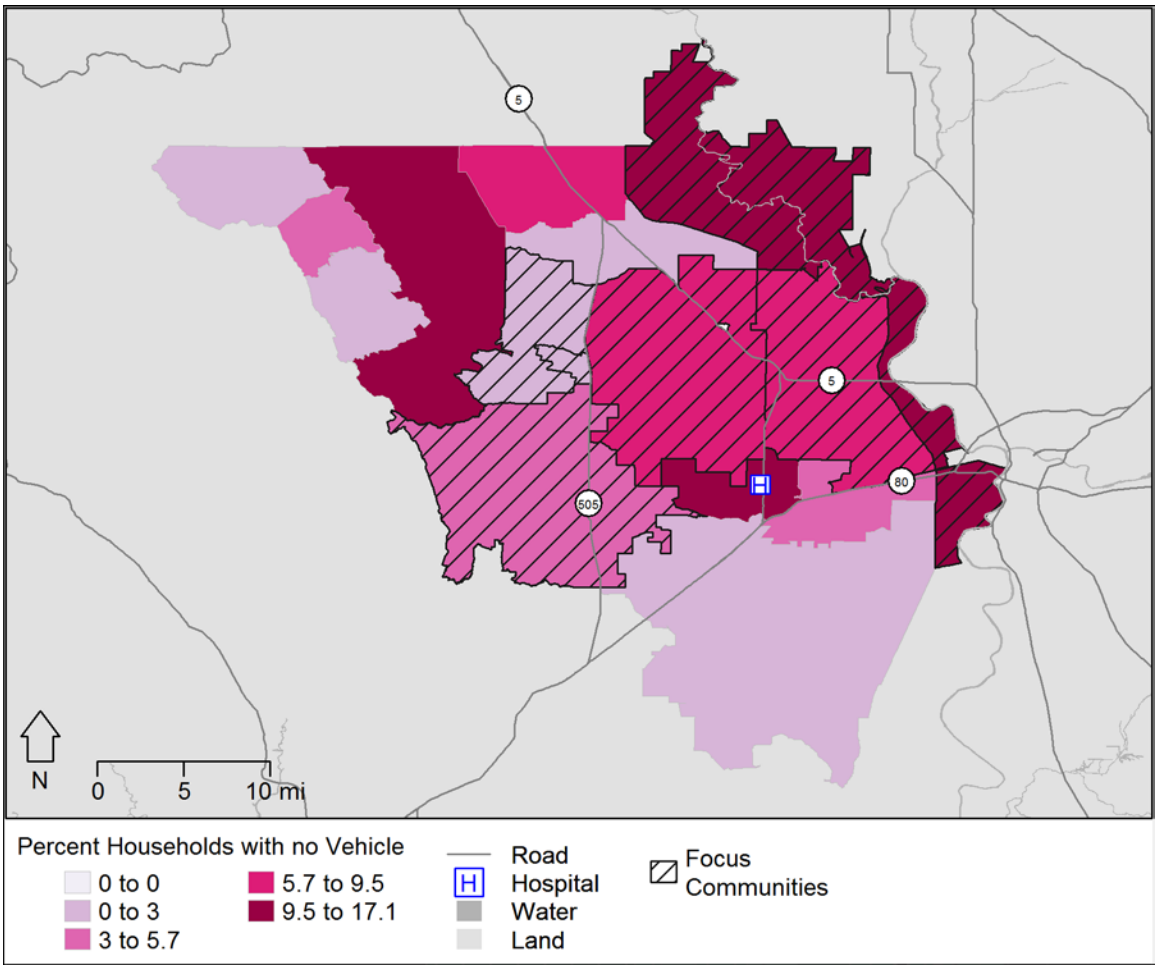

Figure 17: Percent Households with No Vehicle

The percent of households with no vehicle for Yolo County is 8.6%, above the state percentage of 7.8%. As Figure 17 shows, the Focus Communities of 95645 (Knights Landing) and 95691 (West Sacramento) have particularly high percentages of households with no vehicles, at 13.1% and 9.5% respectively. The ZIP code of 95607 (Capay) had the highest percentage of households with no vehicle at 17.2%.

Lack of safe and affordable transportation was mentioned as a barrier for SDH HSA residents, and is the seventh prioritized health need. Transportation was mentioned as a barrier to accessing health care, healthy foods, employment, and education. Participants, especially those in the rural parts of the county, stated that the current public transportation system within the SDH HSA can be inaccessible, expensive, and sometimes very slow. One service provider said:

> *We need affordable, on-demand transportation that includes the rural areas.* (KI_2)

Many community members expressed specific concerns about transportation challenges for disabled and older adults. A service provider explained:

> *For seniors, the number one issue is transportation. How do they get to the hospital, or their doctor's appointments? How do they get to the pharmacy? If you're a senior with a walker you can't just take public transportation, they just can't maneuver it.* (KI_5)

Other participants spoke about transportation as a major barrier to accessing health care services. As one community member stated:

> *There are no buses that go into town, so you have to find a ride. It becomes extremely difficult because to get into town is so far. We need a bus that comes to us…specifically for giving rides to doctor's appointments.* (FG_6)

Another resident said, *"We need to have more transportation services available in order to go to the doctor or dentist. The bus only comes by three times per week."* (FG_5) Participants spoke about the lack of public transportation options and the time that it takes to get to health care resources which can add unnecessary stress to resident's daily lives. One key informant stated:

> *Yeah, public transportation is a big challenge and depending on where you live, it can be almost impossible to access hospitals in Sacramento, which is often times where high risk births end up. For a low-income family trying to get to that NICU, using public transportation, it can take several hours and just be impossible.* (KI_3)

Percent – Workers that Commute More than 60 minutes to Work

Long commute times are associated with increased likelihood of being overweight, higher blood pressure, increased stress and neck pain, exposure to more pollution, and other negative health effects.[22] Figure 18 displays the percent of workers in each SDH HSA ZIP code which commute more than 60 minutes to work.

[22] MacMillan, A. (2015). Five ways your commute is hurting your health. Retrieved from: http://news.health.com/2015/03/31/5-ways-your-commute-is-hurting-your-health/

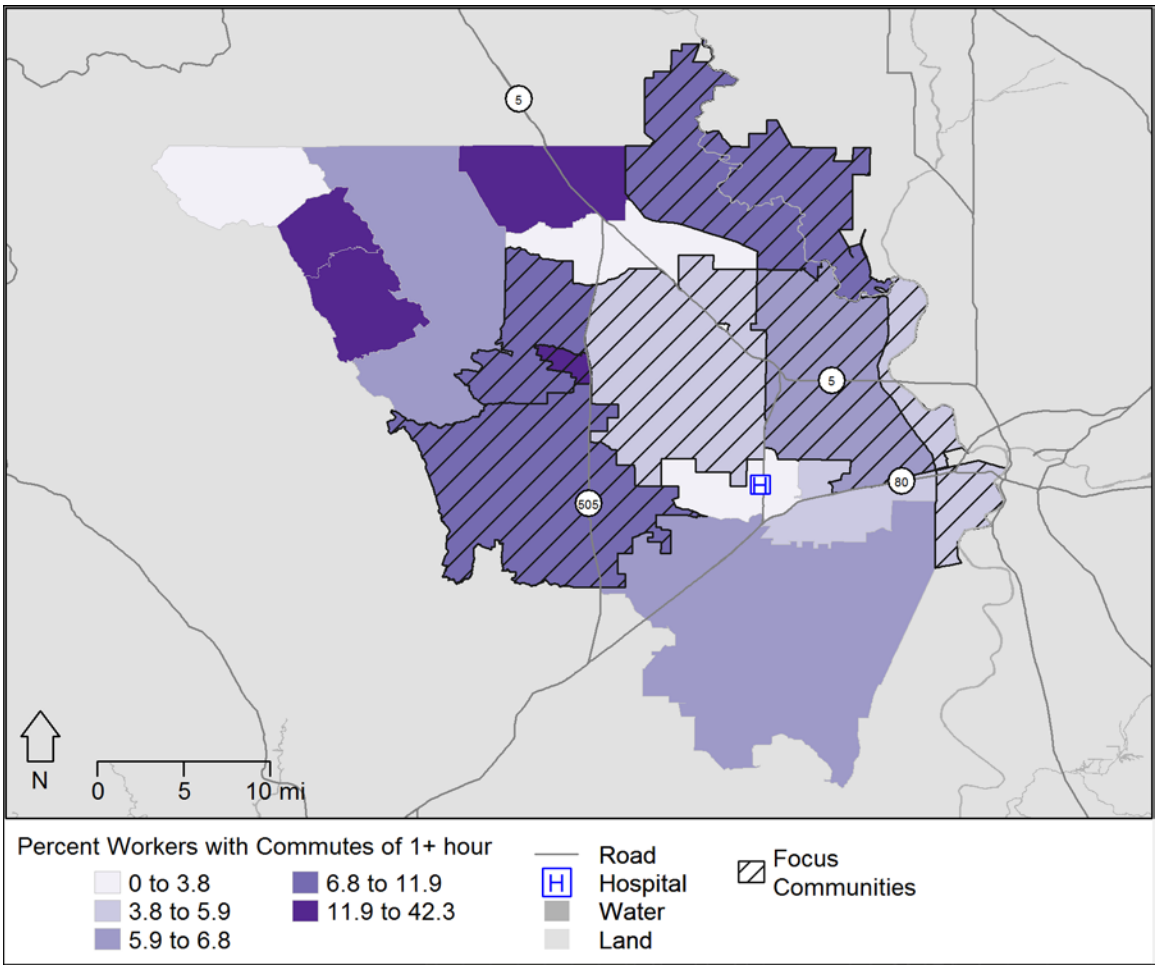

Figure 18: Percent Workers with Commutes of 1+ Hour

The four SDH HSA ZIP codes with the highest percentage of residents commuting more than 60 minutes to work include: 95606 (Brooks) at 42.3%, 95653 (Madison) at 33.1%, 95637 (Guinda) at 13.4% and 95627 (Esparto) at 11.1%, in comparison to the county at 5.1% and the state at 10.1%.

Percent – Workers Reporting Commuting Alone and Walking/Biking to Work

Data from the US Census Bureau indicted that 68.2% of respondents in the SDH HSA over the age of 16 years old reported commuting to work alone, lower than the state percent of 73.2%. The Census data also indicated that 11.5% of SDH HSA respondents stated that they walk or bike to work, which is substantially higher than the state percent of 3.8%.

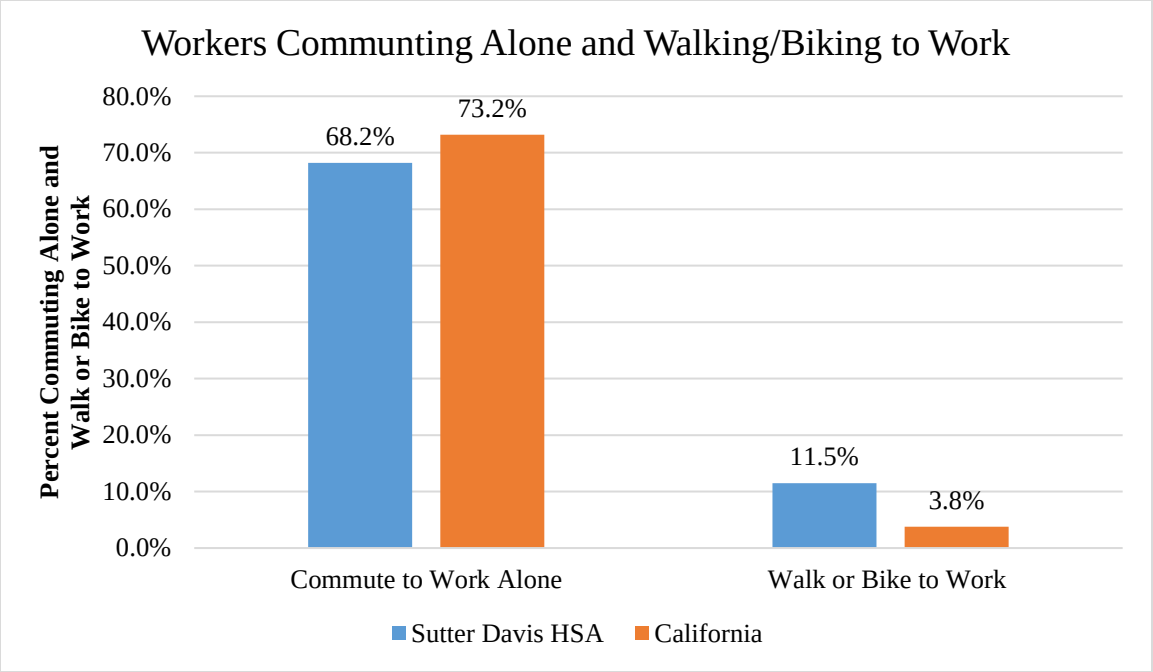

Figure 19: Percent of Workers Commuting to Work Alone and Walking or Biking to Work

Rate – Road Density Network per Square Mile

Examination of road network density revealed that Yolo County has fewer roads per square mile than the state. The number of roads per square mile for Yolo County is 1.69, compared to the state rate of 2.02 roads per square mile. Increased road density is related to increased exposure to vehicle emissions and other environmental pollutants which negatively impact health.

Area – Fatal Traffic Accidents

Data from the National Highway Traffic Safety Administration showed that the SDH HSA ZIP codes with elevated numbers of fatal traffic accidents included: 95620 (Dixon), 95691 (West Sacramento), and 95776 (Woodland). The ZIP code of 95691 (West Sacramento) had the most with seven accidents in 2013, followed by 95620 (Dixon) with four. Though it can be expected that fatal traffic accidents are more likely to occur on major highways, fatal traffic accidents in residential communities help to illuminate safety issues in the area. ZIP code 95691 (West Sacramento) is a heavily residential area, yet had the highest number of fatal traffic accidents.

Rate – Fatal Accidents per 100,000 Population Involving a Motor Vehicle and/or Pedestrian

The rate of fatal motor vehicle accidents, as reported by the California Department of Public Health for 2010-2012, showed that the SDH HSA rate of fatal accidents was 3.96, below the state rate of 5.18 per 100,000 population. However, fatal accidents involving a pedestrian (motor vehicle killed a pedestrian) was 2.56, above the state rate of 1.97 per 100,000 population.

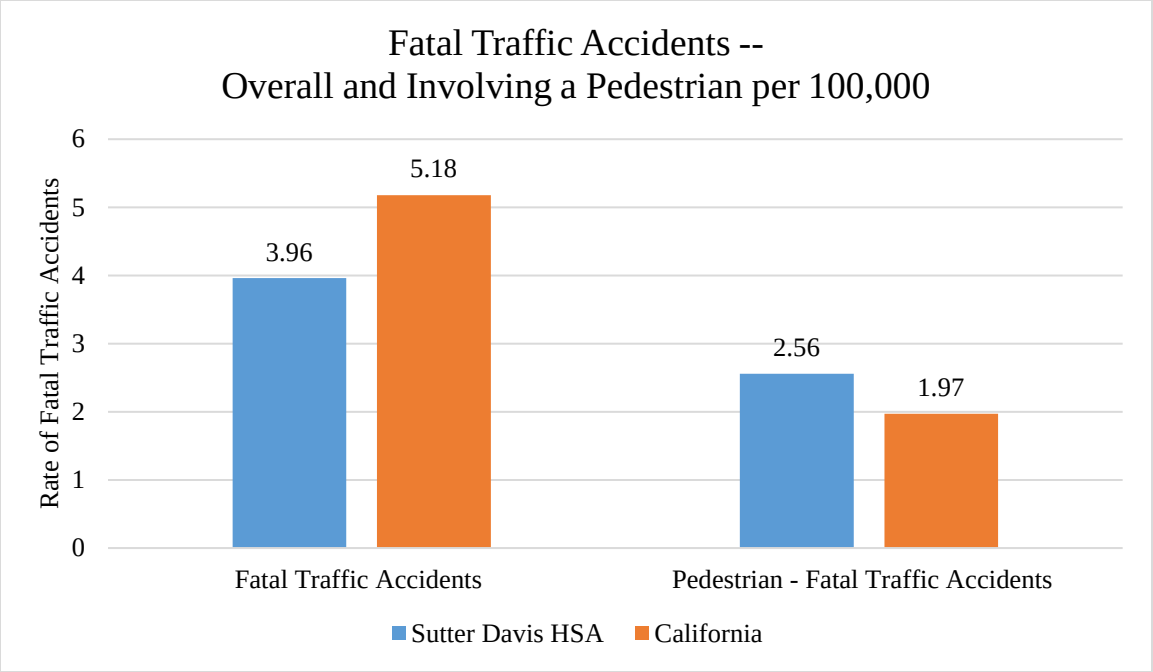

Figure 20: Rate of Fatal Accidents Overall and Involving a Pedestrian

Key informants spoke about a concern over the built environment in many areas within the SDH HSA. One big issue of concern was the lack of sidewalks and proper lighting for pedestrians, especially in the more rural areas, or in places where a lot of older adults live. One key informant said about the rural area where they live, "*We need street lights desperately. Our sidewalks are just terrible…you can trip and fall. And lighting at night, pitch black.*" (KI_2)

Housing Stability – Percent Housing Vacancy, People per Housing Unit and Percent Renting

Stable, clean and affordable housing is an essential public health need. The lack of a stable place to live can have negative health effects on individuals and families, making it hard to manage daily life responsibilities.[23] Table 26 shows rates for various housing indicators by ZIP code as an indicator of housing stability.

[23] John Hopkins University. (2016). Stable Housing. Retrieved from: http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-to-eliminate-cardiovascular-health-disparities/about/influences_on_health/stable_housing.html

Table 26: Housing Vacancy, People Living per Housing Unit, and Percent of Population Renting by ZIP Code

ZIP Code	Percent Housing Vacancy	People per Housing Unit	Percent Renting
95606	26.2	2.04	35.4
95607	--	1.86	38.7
95616	5.3	2.54	62.4
95618	4.6	2.85	43.2
95620	6.6	3.08	37.1
95627*	17.3	3.12	32.7
95637	10.9	3.79	29.9
95645*	9.7	2.85	47.9
95653*	--	3.11	42.0
95679	--	1.00	72.4
95691*	7.2	2.76	36.7
95694*	2.5	2.86	41.8
95695*	7.3	2.64	46.0
95697	--	2.50	54.5
95698	--	2.33	--
95776*	7.7	3.14	37.2
95937	19.8	3.58	41.2
Yolo County	*6.6*	*2.76*	*47.1*
CA State	*8.6*	*2.94*	*44.7*

Source: Census, 2013
*Indicates Focus Community

Percentages of housing vacancy exceeded the county benchmark in eight of the SDH HSA ZIP codes, with five of those also exceeding the state benchmark of 8.6%. High vacancy rates are indicators of housing market conditions[24], specifically the affordability of housing in the area. The number of people per housing unit is an indicator of multiple people living together, which can be an indicator of poverty. People-per-housing-unit rates exceeded the county benchmark in half of the ZIP codes, with the highest rate in 95637 (Guinda) at 3.79 people per housing unit. A large number of renters in a given geographical area can be an indicator of the area's economic stability as well as housing costs. Four of the ZIP codes exceeded the county and state benchmarks for the percentage of renters, with the highest percent in 95679 (Rumsey), where 72.4% of residents were renting their homes.

Key informant and focus group participants spoke about housing insecurity and the high cost of housing in areas throughout the SDH HSA, especially in lower income communities where job related skills and employment are also lacking. As one key informant stated:

> *Affordable and deeply subsidized housing is a gap. If you take any of these folks that are chronically mentally ill or any of our homeless population…there are limited vouchers for deep subsidies which causes major concern. So when people don't have a roof over their heads and they're on the streets in the community they are just ripe for all sorts of problems.* (KI_13)

[24] Belsky, E.S. (n.d.) *Vacancy rates: A policy primer*. Housing Policy Debate, vol 3(I3), 793-814. Retrieved from: http://content.knowledgeplex.org/kp2/img/cache/kp/2627.pdf

Though many community members spoke about housing challenges, a common theme was the need to address the availability of safe, permanent housing for vulnerable individuals, particularly in the Focus Communities of West Sacramento and Woodland. One key informant pointed out the connection between housing and accessing health services, *"If you're a transitional age youth experiencing a first episode of psychosis, there are lots of challenges associated with getting housing, and stigma, and being able to access behavioral health services."* (KI_9)

Rate – Households that are HUD Households per 10,000 Housing Units

The United States Department of Housing and Urban Development (HUD) reported in 2013 that the total number of HUD-funded housing units in Yolo County was 445.41 units per 10,000 housing units, substantially above the state rate of 368.32 units per 10,000. This is an important indicator as access to affordable housing impacts a person's economic stability and ability to access other basic needs such as health care, affordable healthy foods, and places to be physically active.

Percent – Households with at Least One Substandard Housing Condition

HUD also reports that in 2013, the percent of households defined as substandard was 44.8% in Yolo County, lower than the state percent at 48.4% of households.

Housing Costs – Households with Mortgage Costs Greater than 30% and Households with Rental Costs Greater than 30% of Household Income

The high cost of housing can be a barrier for community members to maintain stable housing and optimal health. Data on the cost of housing for the SDH HSA included the examination of two indicators: housing costs with a mortgage payment greater than 30% of the household's income, and rentals with housing costs greater than 30 % of the household income. Figures 21 and 22 show these two indicators across the SDH HSA.

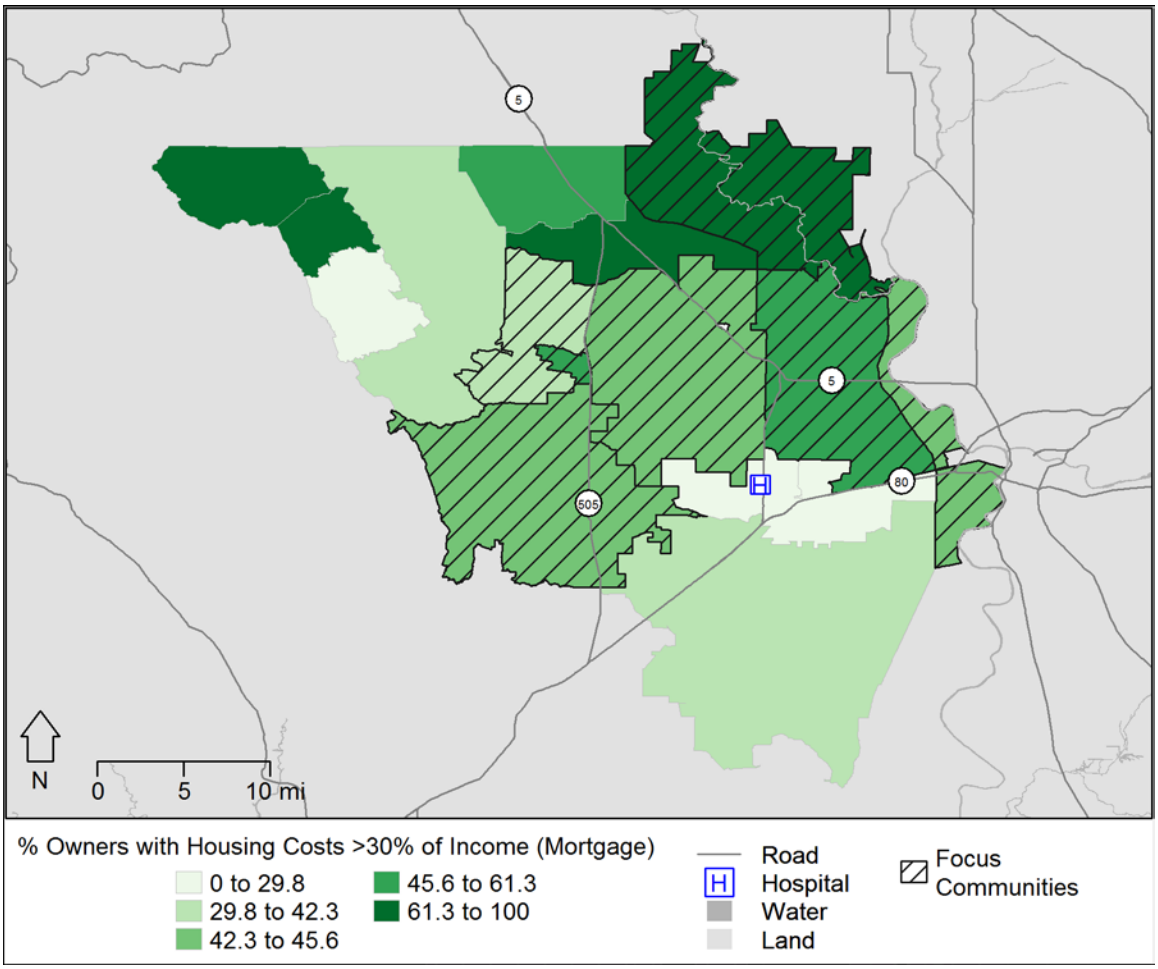

Figure 21: Percent of Residents by ZIP Code with Housing Costs above 30% of their Household Income with a Mortgage Payment

Four of the SDH HSA ZIP codes fell into the highest category of residents with a housing mortgage cost of greater than 30% of household income. These ZIP codes include 95679 (Rumsey) at 100%, followed by 95698 (Zamora) at 80.0%, 95645 (Knights Landing) at 69.9%, and 95637 (Guinda) at 64.1%, in comparison to the county at 40.0% and the state at 48.1%.

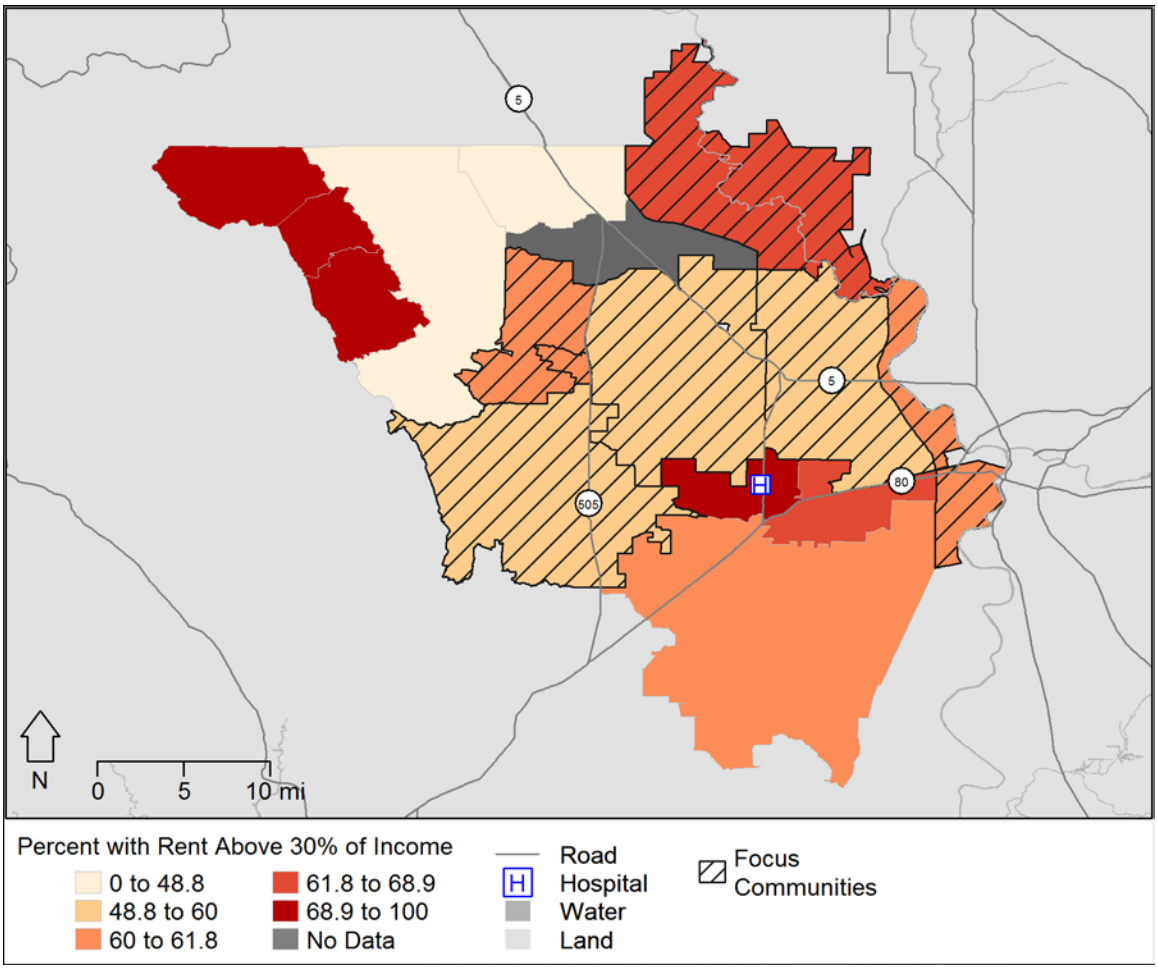

Figure 22: Percent of Residents by ZIP Code with Housing Rental Costs above 30% of their Household Income

All but two of the SDH HSA ZIP codes had a high percent of residents with rent above 30% of their income. This was especially true for the ZIP codes of 95606 (Brooks), 95637 (Guinda), and 95679 (Rumsey), which all showed that 100% of residents spend above 30% of their income on housing rental costs. The ZIP codes of 95616 (Davis) and 95618 (Davis) also had a high percent of residents with high rental costs, at 68.9% and 65.9% respectively.

Index – Pollution Burden Score

The California Environmental Protection Agency and the Office of Environmental Health Hazard Assessment developed the *California Communities Environmental Health Screening Tool, Version 2.0*.[25] This tool was designed to identify California communities that are disproportionately burdened by multiple sources of pollution. The tool combines 13 types of pollution, environmental factors to produce a "pollution burden" score for each census tract in the state ranging between a minimum of 0 and a maximum of 100, with higher scores indicating a greater pollution burden. The pollution factors included ozone and $PM_{2.5}$ concentrations, diesel PM emissions, pesticide use, toxic releases from facilities, traffic

[25] *California Communities Environmental Health Screening Tool, Version 2.0 (CalEnviroScreen 2.0). Guidance and Screen Tool*. October 2014. Retrieved from: http://oehha.ca.gov/ej/pdf/CES20FinalReportUpdateOct2014.pdf

density, drinking water contaminants, cleanup sites, impaired water bodies, groundwater threats, hazardous wastes facilities and generators, and solid waste sites and facilities.

A pollution burden score was identified for each census tract in the SDH HSA and is displayed in Figure 23. Each census tract's pollution burden score ranged from 0 to 100 and was assigned to a quintile, displayed in the figure using color gradation. In the figure census tracts with darker colors have higher pollution burden scores.

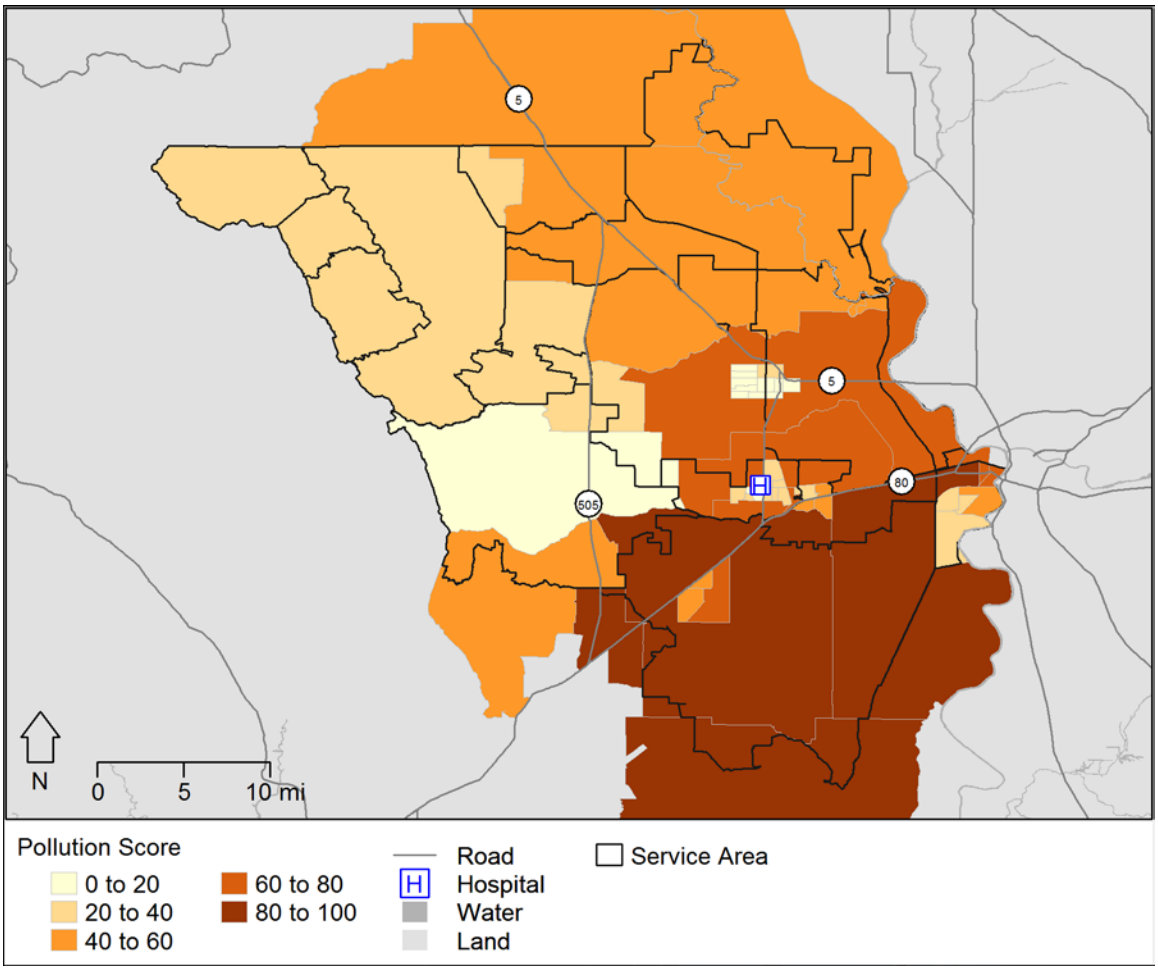

Figure 23: Pollution Burden Score by Census Tracts in the SDH HSA

Figure 23 shows that portions of ZIP code 95618 (Davis) and 95694 (Winters) and most of 95620 (Dixon) had a pollution burden score in the highest quintile, 80-100. Portions of ZIP codes 95616 (Davis), 95618 (Davis), 95691 (West Sacramento) and 95776 (Woodland) had census tracts with scores in the second highest quintile. Exposure to pollution contributes to the high rates of respiratory illness mentioned previously in this report.

Primary data participants spoke about issues of pollution in terms of pesticide use in agricultural fields located close to housing, as well as poor air quality from smoke, dust and vehicles. One focus group participant said, "*We tend to get sick twice or three times per year because of the pesticides used on the fields around here*" (FG_5)

Social Environment

This assessment included indicators for crime, assault and homicide in the SDH HSA. Crime data included major crimes, violent crime, property crime, arson and domestic violence.

Rates – Major Crime, Violent Crime, Property Crime, Arson and Domestic Violence

Criminal activity in a community has a strong effect on a community's actual and perceived safety. Data on major crimes reported to the California Department of Justice are provided for the law enforcement jurisdictions in the SDH HSA and compared to an estimated county benchmark.

Table 27: Major Crime, Violent Crime, Property Crime, Arson and Domestic Violence per 10,000 Population by Police Jurisdiction

Police Municipality	Major Crimes*	Violent Crime	Property Crime	Arson	Domestic Violence
Davis	388.47	17.18	369.47	1.82	28.74
West Sacramento	345.90	41.78	302.28	1.83	83.57
Winters	184.58	11.81	169.82	2.95	64.97
Woodland	402.23	48.67	347.48	6.08	60.66
Yolo County Sheriff	208.49	17.74	187.12	3.63	35.89
Yolo County	*353.06*	*31.74*	*318.06*	*3.26*	*52.94*

Source: California Department of Justice, 2013; *combination of violent crimes, property crimes, and arson

Table 27 indicates that major crime rates reported for Davis and Woodland jurisdictions are noticeably higher than the Yolo County estimated major crime rate. The highest rates of violent crime occurred in West Sacramento and Woodland, where rates were above the county benchmark. Rates of property crime were highest in the Davis and Woodland jurisdictions. The highest rate of arson was found in the Woodland jurisdiction, where arsons occurred at nearly double the county rate. Rates for domestic violence crimes exceeded the county benchmark in West Sacramento, Winters, and Woodland, with the highest rate in West Sacramento, where 83.57 cases occurred per 10,000 population.

Lack of safe and violence-free communities was mentioned as a significant barrier for SDH HSA residents, and is the fourth prioritized health need. Most notably, 16 of the 22 sources mentioned that community safety is compromised with the use and abuse of alcohol and other drugs. One key informant said, *"Alcohol, drugs, yelling, screaming, acting out, fighting…we see all that.*" (KI_10) Participants also alluded to domestic violence and the impact it had on youth, resulting in childhood trauma. In addition, many comments were made about the connection between perceived violence and active living, for example:

> *I feel that everything has to do with having good nutrition, prevention from illnesses such as diabetes or high blood pressure and exercising. All of those things help in keeping us healthy, but there is the safety issue that if you don't feel safe, you are not going to go out for a walk or take your family somewhere.* (FG_4)

Rates – ED Visits and Hospitalizations due to Assault

Understanding safety in the SDH HSA requires the examination of both crime rates as shown above, as well as incidents of intentional harm, such as rates of assault. Rates of ED visits and hospitalizations related to assault (intentionally harming another person) are included in this assessment to gain an understanding of violence in the SDH HSA. Figure 24 and 25 show ED visits and hospitalizations related to assault in the area.

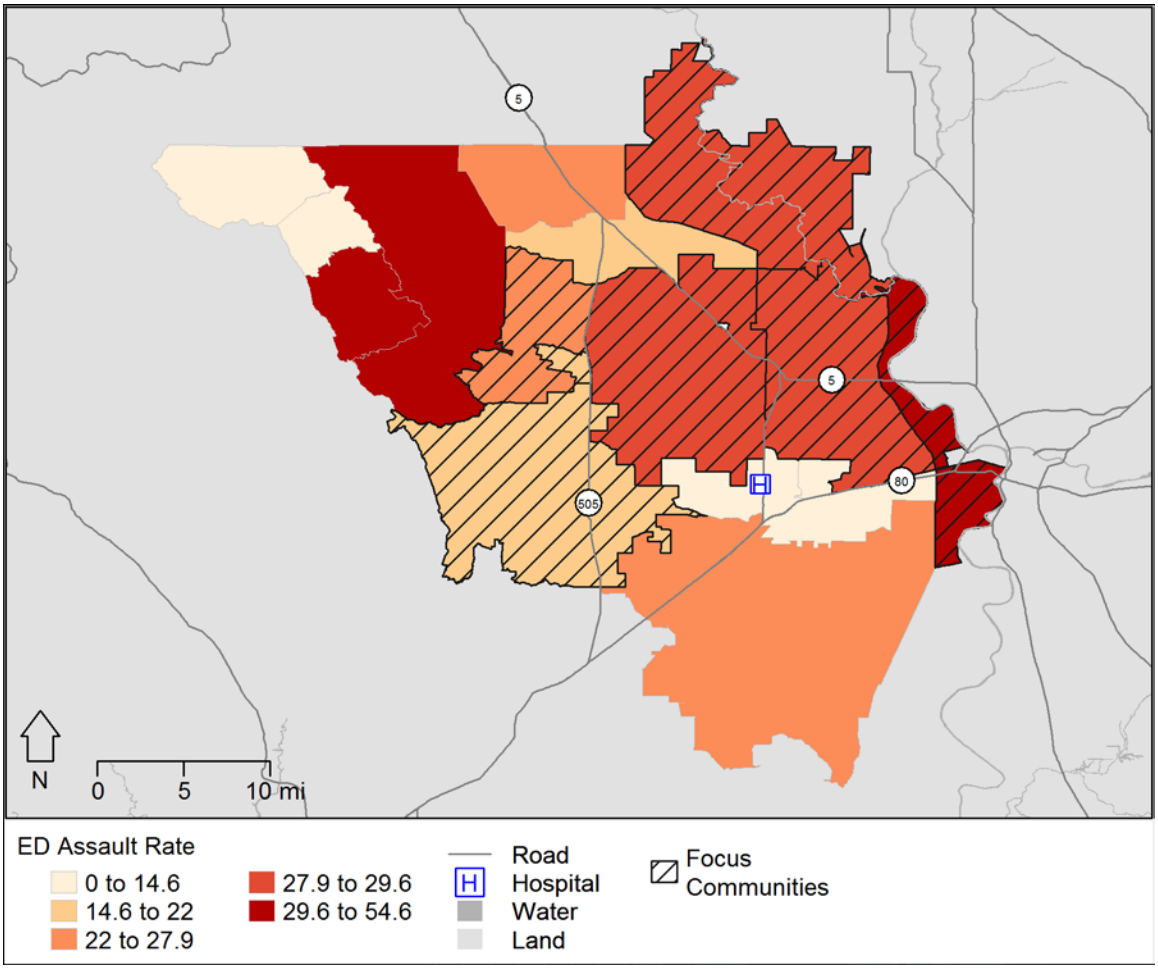

Figure 24: ED Visits Related to Assault

The highest rates of ED visits due to assault in the SDH HSA were seen in ZIP codes 95606 (Brooks), 95607 (Capay), and 95691 (West Sacramento), ranging from 32.96 to 54.55 visits per 10,000 population. These rates were considerably higher than the county benchmark of 24.21 and the state benchmark of 30.36 ED visits per 10,000 population.

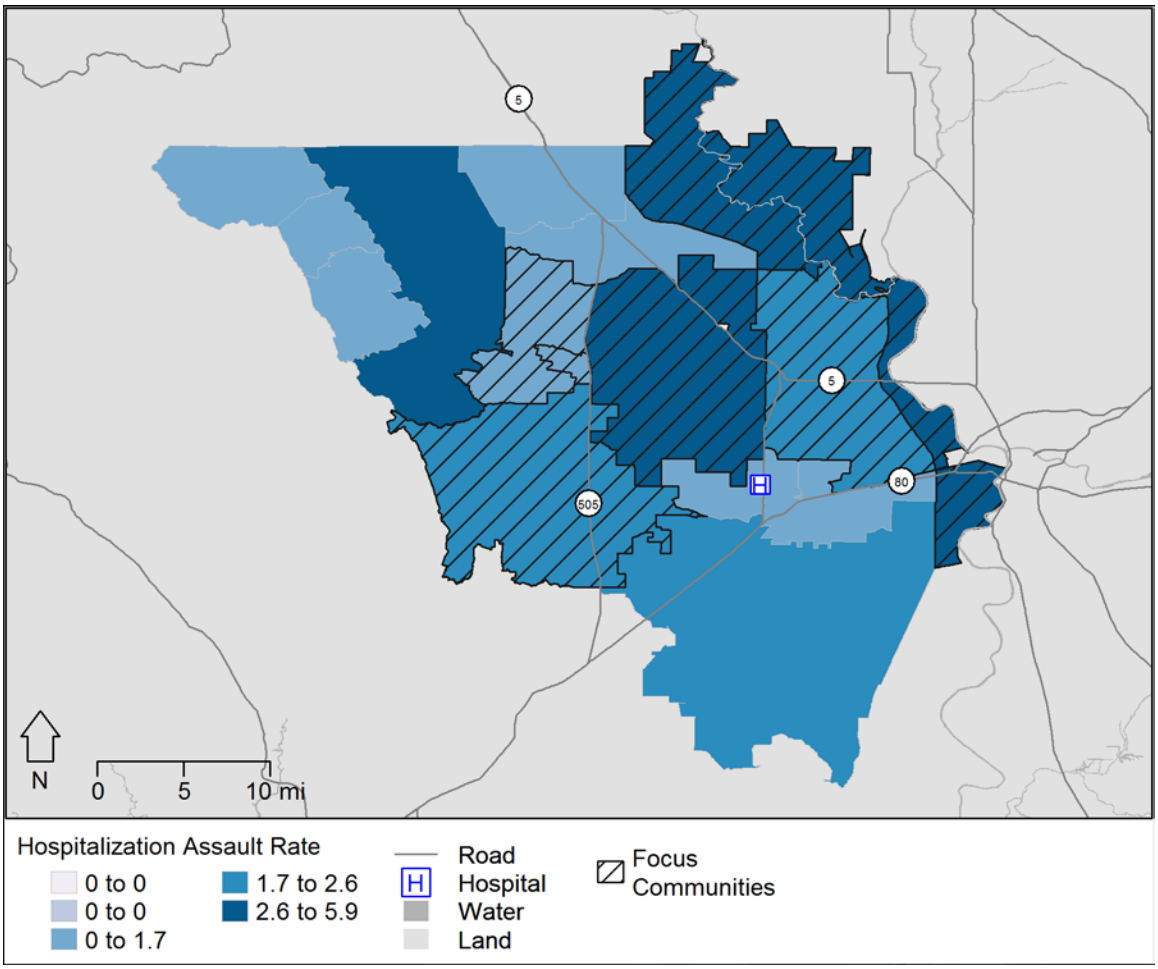

Figure 25: Hospitalizations Related to Assault

The highest rates of hospitalizations due to assault in the SDH HSA were seen in ZIP codes 95607 (Capay), 95691 (West Sacramento) and 95695 (Woodland), ranging from 3.90 to 5.82 hospitalizations per 10,000 population. The highest rate was in 95691 (West Sacramento) at 5.82 hospitalizations per 10,000, over twice the county rate of 3.02 hospitalizations per 10,000 population.

Rate – Mortality due to Homicide

Data from the California Department of Public Health collected for 2010-2012 revealed that the SDH HSA had a lower rate of mortality due to homicide than the state benchmark. The rate of mortality due to homicide was 1.59 deaths per 100,000 population, clearly lower than the state rate of 5.15 deaths per 100,000.

Economic and Work Environment

Economic stability is crucial to overall health and wellbeing. Community members that struggle to pay for basic needs like stable housing, adequate food and health care are at greater risk of negative health outcomes. This assessment examined indicators related to lack of employment, income, poverty and insurance status.

Percent – Unemployed and Median Income by ZIP Code

Table 28: Percent Unemployed and Median Income by ZIP Code

	ZIP Code	Percent Unemployed	Median Income
Economic Stability	95606	13.3	$178,295
	95607	8.4	$77,697
	95616	9.6	$44,741
	95618	7.2	$82,313
	95620	10.5	$71,261
	95627*	11.7	$58,092
	95637	14.7	$72,778
	95645*	14.4	$44,954
	95653*	25.4	$42,083
	95679	--	--
	95691*	10.8	$63,559
	95694*	8.1	$55,163
	95695*	11.0	$51,158
	95697	11.5	$60,469
	95698	--	$47,857
	95776*	10.4	$61,599
	95937	25.7	$56,705
	Yolo County	*10.4*	*$55,918*
	CA State	*11.5*	*$61,094*

Source: Census, 2013

*Indicates Focus Community

As Table 28 shows, 10 of the SDH HSA ZIP codes exceeded the county benchmark for the percent of residents unemployed. The highest rates were seen in ZIP codes 95937 (Dunnigan) at 25.7% and 95653 (Madison) at 25.4%. Median annual incomes were below the county benchmark in six of the ZIP codes, and nine ZIP codes fell below the state benchmark. The lowest median income was observed in 95653 (Madison) at $42,083, substantially lower than both the county and state levels.

Many key informants and community members spoke about economic stability and the influence it has on many areas of healthy living, including its effect on access to quality health care, healthy foods, transportation, stable housing, etc. The following quotes demonstrate the challenges that individuals face, especially those who are English language learners or low-wage earners:

> *For me it's difficult because you have to have a job to be able to pay for everything, and with just one employer it's hard to make ends meet, so you're constantly having to look for jobs. Here, everybody's bones hurt – their knee, their back…it's because the work is very hard and heavy, the men work from 12-14 hours a day, from 4am to 8pm, and everything hurts when they come home.* (FG_6)

> *Here, the first obstacle a man faces is lack of knowledge and not speaking English. Then secondly a different system to get a job. The man he has a feeling he's responsible to support his family, he forces himself to do the best he can…but what can he get? He can get a minimum wage job, but with minimum wage you cannot survive. So, you have one job and you look for another job, two jobs.* (KI_8)

Percent – Population Living in Poverty (Total population, Families with Children, Single Female-Headed Households, and Elderly Households)

Table 29: Percent Population Living in Poverty, Percent Families with Children in Poverty, Percent Single FHH in Poverty, and Percent Elderly Households in Poverty

	ZIP Code	Percent Below 100% Federal Poverty Level	Percent Families with Children in Poverty	Percent Single Female Headed Households (FHH) in Poverty	Percent Elderly Households in Poverty
Poverty	95606	8.2	--	--	--
	95607	8.9	--	--	--
	95616	30.9	9.3	27.5	1.2
	95618	18.8	7.0	24.0	1.2
	95620	11.2	14.2	40.3	1.5
	95627*	15.4	20.5	54.2	1.8
	95637	--	--	--	--
	95645*	23.2	31.3	65.9	4.8
	95653*	8.7	--	--	--
	95679	--	--	--	--
	95691*	15.9	18.4	40.3	1.1
	95694*	10.7	14.0	14.7	2.1
	95695*	13.1	14.1	27.6	3.6
	95697	6.5	10.2	--	--
	95698	--	--	--	--
	95776*	10.9	12.1	17.9	1.4
	95937	15.2	26.2	--	1.9
	SDH HSA	17.5	--	--	--
	Yolo County	*19.1*	*14.7*	*28.8*	*2.1*
	CA State	*15.9*	*17.8*	*36.8*	*2.3*

Source: Census, 2013 *Indicates Focus Community

Two of the 17 SDH HSA ZIP codes had a higher percentage of households living below the Federal Poverty Level (FPL), relative to the county rate. ZIP codes 95616 (Davis) and Focus Community 95645 (Knights Landing) had the highest rates, with 30.9% and 23.2% of households below the FPL, respectively. ZIP codes 95645 (Knights Landing) and 95937 (Dunnigan) had the highest percentages of children in poverty at 31.3% and 26.2%, respectively. Among single female-headed households (FHH), the highest rates of poverty were in 95645 (Knights Landing) and 95627 (Esparto), where 65.9% and 54.2% of FHHs are living in poverty, respectively. Focus Community 95645 (Knights Landing) had a substantially higher rate of elderly households in poverty, at over double the county rate. One ZIP code, 95645 (Knights Landing), had high poverty rates compared to county benchmarks in all four categories.

Many key informants and community members spoke about poverty and the influence it has on many areas of healthy living, including its effect on access to quality health care, healthy foods, transportation, stable housing, etc. For example, one focus group participant said, "*They just couldn't afford the Obamacare, some people needed to pay $450 or $500 per month and that's half of the rent*." (FG_5). A service provider shared a similar perspective:

They come in very overwhelmed and they're not just thinking about their health. They're thinking, how am I going to pay for this surgery that isn't covered? I don't have a car, or my car is repossessed, or the electricity is going to be turned off. They already come in with those kinds of marbles running around in their heads. (KI_1)

Percent – Population Uninsured

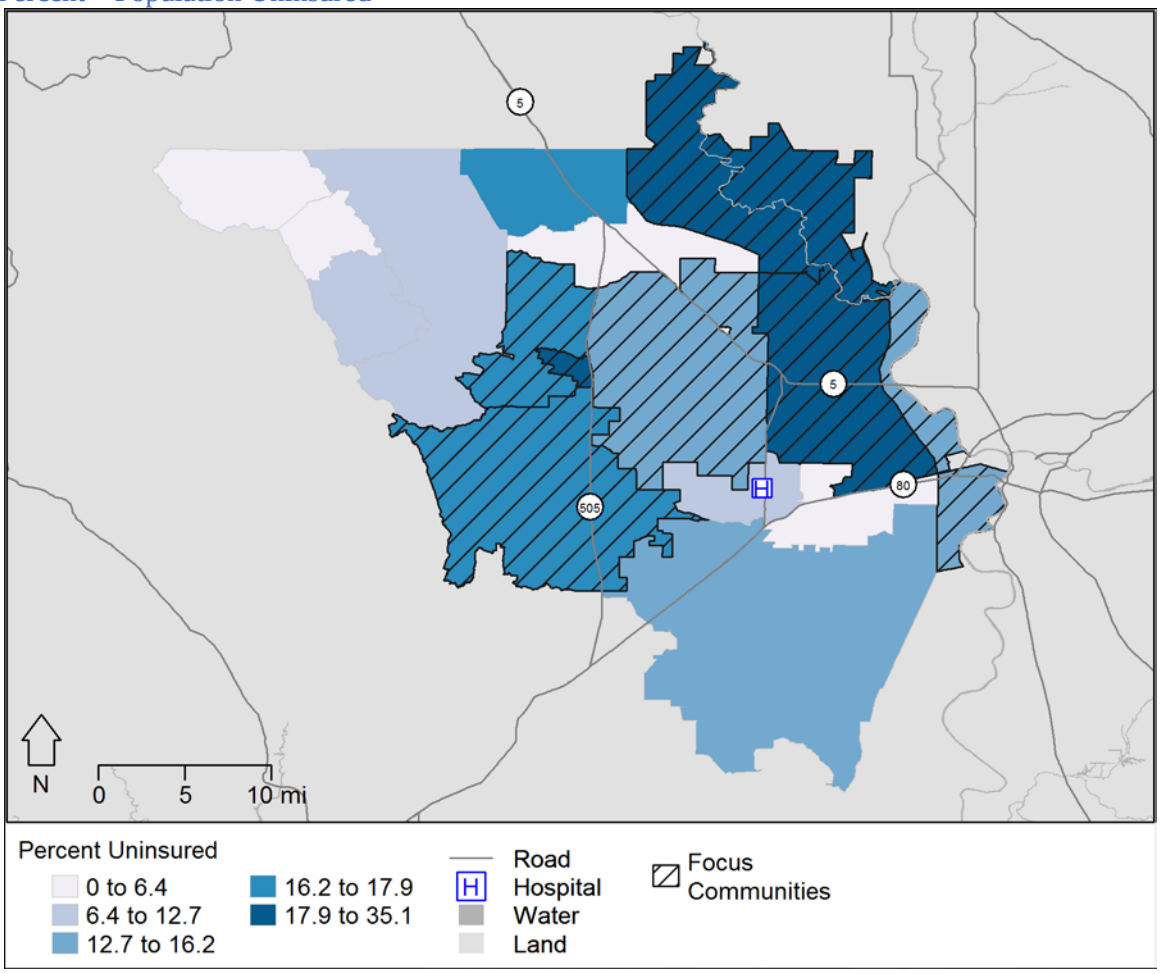

Figure 26: Percent Uninsured by ZIP Code in the SDH HSA

The percent of population without health insurance for Yolo County was 13.2%, below the state level of 17.8%. Three ZIP codes were in the highest bracket of percent uninsured, including 95653 (Madison) at 35.1%, 95697 (Yolo) at 23.1% and 95776 (Woodland) at 17.9%. Primary data findings related to health insurance are discussed in the "Access to care" section of this report.

Service Environment

This assessment examined access to care measures and education in order to best understand the service environment for the SDH HSA. Information in this section of the report examines access to care for primary care, mental health care and dental health.

Access to care (Primary Care, Mental Health, and Dental)

Rate – Primary Care Physicians per 100,000 Population

Data from the US Department of Health and Human Services reveals that the rate of primary care physicians per 100,000 population was 112.2 for Yolo County in 2012, above the state rate of 77.2 physicians per 100,000 population.

Area – Health Professional Shortage Area -- Primary Care

Health Professional Shortage Areas (HPSAs) are designated by the U.S. Government Health Resources and Services Administration (HRSA) as having shortages of primary medical, dental, or mental health providers; these shortages may be geographic (e.g., a county or service area), demographic (e.g., a low income population) or institutional (e.g., comprehensive health center, federally qualified health center, or other public facility).[26]

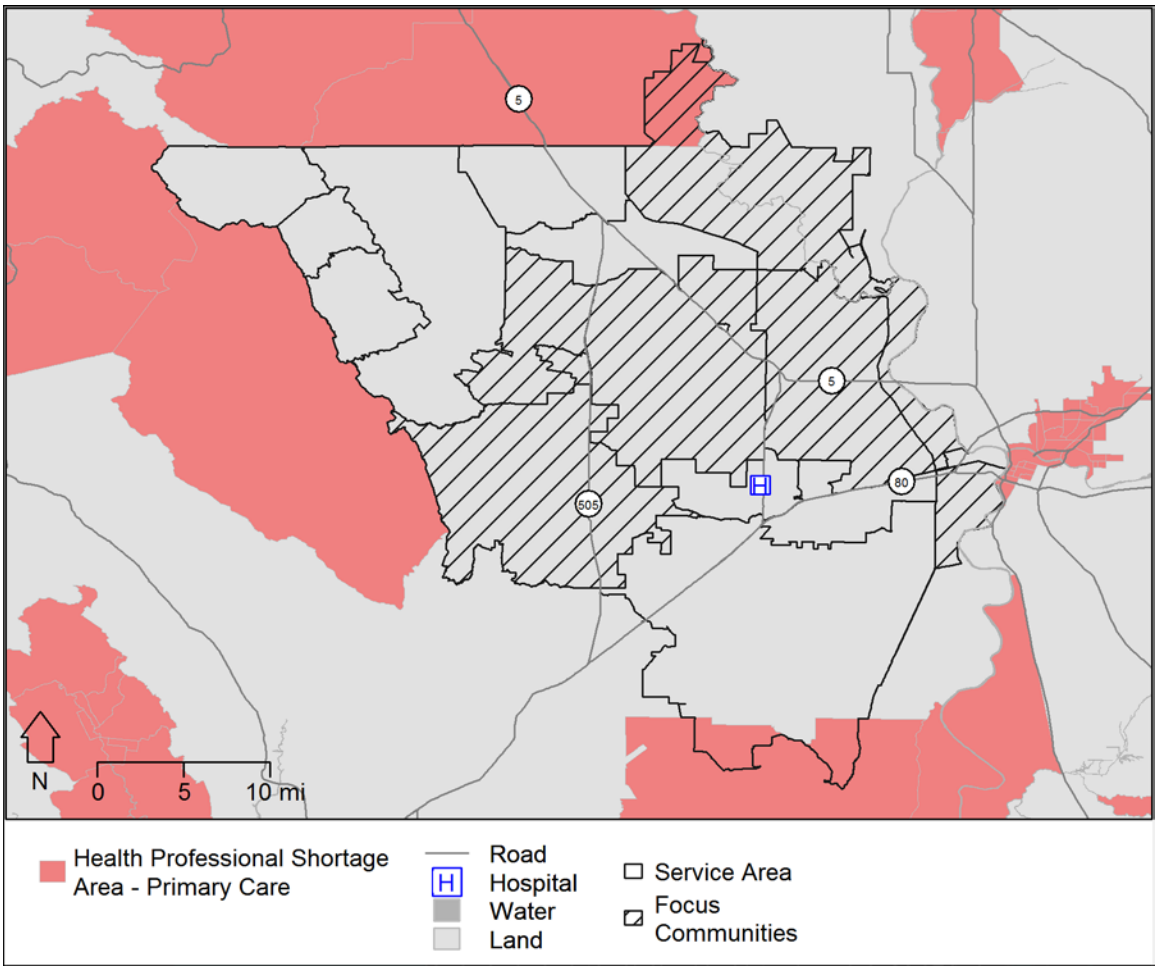

Figure 27: Primary Care HPSA in the SDH HSA

[26] Health Resources and Services Administration. (n.d.). *Primary Medical Care HPSA: Designation Overview*. Retrieved from: http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/primarycarehpsaoverview.html

Nine ZIP codes were designated as HPSAs for Primary Care, including: 95606 (Brooks), 95607 (Capay), 95620 (Dixon), 95637 (Guinda), 95645 (Knights Landing), 95679 (Rumsey), 95691 (West Sacramento), 95694 (Winters), and 95937 (Dunnigan).

One of the significant findings of the primary data was the need for increased access to primary care for residents of the SDH HSA. Though insurance coverage for residents in the HSA has increased as a result of the Affordable Care Act, key informant and community members consistently mentioned a lack of providers, especially Medi-Cal providers. According to participants, this often resulted in long wait times to get an appointment with a primary care provider. One key informant stated:

> *There is an absolute shortage of primary care physicians in this region. We do not have enough doctors. We are graduating wonderful nurse practitioners and PAs. We are not graduating enough physicians in this region to fill the need, because of the increase of people with coverage.* (KI_3)

Another frequently discussed topic was the low-reimbursement rates for Medi-Cal providers. One key informant said, *"I think the reimbursement rates are really low, so can we up the reimbursement rates to make it more attractive to providers in our community?"* (KI_13)

Percent – Prenatal Care in the First Trimester and Low Birth Weight

Table 30: Percent of Live Births with the Mother Receiving Prenatal Care in the First Trimester and Percent of Births with Low Birth Weight

	ZIP Code	Percent of Live Births with Prenatal Care in First Trimester	Percent of Births with Low Birth Weight
Prenatal Health	95606	--	--
	95607	--	--
	95616	84.9	6.2
	95618	86.8	6.2
	95620	79.9	5.5
	95627*	78.6	6.7
	95637	--	--
	95645*	81.6	6.8
	95653*	--	--
	95679	--	--
	95691*	83.9	6.2
	95694*	81.2	6.0
	95695*	78.8	6.1
	95697	82.4	6.8
	95698	--	--
	95776*	80.3	6.4
	95937	78.9	6.8
	SDH HSA	81.6	5.7
	Yolo County	*82.7*	*5.6*
	CA State	*83.6*	*6.8*

Source: CDPH, 2010-2012 *Indicates Focus Community

Data revealed that a lower percentage of pregnant mothers received prenatal care in the first trimester in eight of the SDH HSA ZIP codes, relative to the county and state benchmarks. The ZIP code with the lowest percentage was Focus Community 95627 (Esparto), where only 78.6% of mothers received prenatal care in the first trimester of pregnancy. Nearly all of the ZIP codes reporting data on percentage of births with low birth weight were above the county benchmark, and three ZIP codes were equivalent to the state benchmark for low birth weight babies per 1,000 live births.

Rate – Federally Qualified Health Centers per 100,000 Population

Data from the US Department Health and Human Services for 2015 indicated that the rate of Federally Qualified Health Centers (FQHC) in the SDH HSA was at 3.37 FQHCs per 100,000 population, higher than the state rate of 1.97 FQHCs per 100,000 population.

Rate – Preventable Hospital Events per 10,000 Population

The rate of preventable hospitalizations reported by the Office of Statewide Health Planning and Development for 2011 for Yolo County was 42.54 events per 10,000 population, substantially lower than the state rate of 83.17 per 10,000 population. Preventable hospital events are ambulatory care-sensitive conditions which could have been prevented if adequate access to primary care was available and utilized by the community.

Rate – Mental Health Providers per 100,000 Population

Data from the US Department of Health and Human Services for 2015 reveals that the rate of mental health providers per 100,000 population was 208.6 for Yolo County, compared to the state rate of 157.0 per 100,000 population.

Area – Health Professional Shortage Area- Mental Health

Figure 28 displays areas in the SDH HSA that were federally designated HPSAs for mental health providers, and shows that all 17 ZIP codes fall within an HPSA for mental health providers.

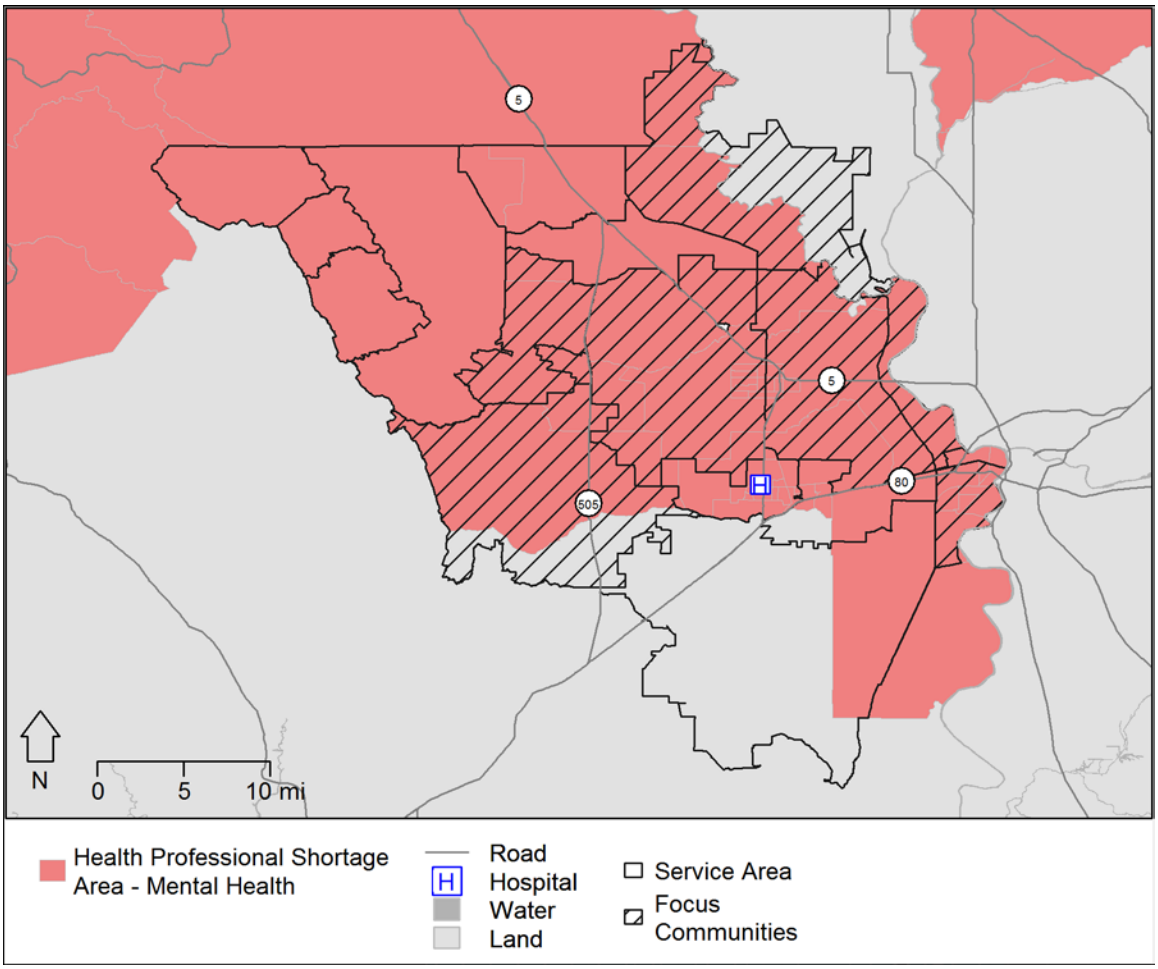

Figure 28: Health Provider Shortage Area-Mental Health

Rate – Dental Health Providers per 100,000 Population

Data from the US Department of Health and Human Services for 2015 revealed that the rate of dental health providers per 100,000 population was 51.8 for Yolo County, lower than the state rate of 77.5 per 100,000 population.

Area – Health Professional Shortage Area - Dental Health

There were no federally designated HPSAs for dental care in the SDH HSA. However, key informants and community members mentioned dental issues as a health concern. Many participants mentioned the need for access to dental care, especially for low-income adults in need of restoration services. One key informant said, *"There are a lot of dentists in Yolo County, but there isn't a lot of access for the uninsured and those on Medi-Cal."* (KI_3) Many community members live without a full mouth of teeth, providing a barrier to eating adequate crunchy fruits and vegetables, and effecting employability and overall quality of life.

Education

Educational attainment is important for overall health and wellbeing. Education is positively associated with health status.

Percent – High School Students Graduating in Four Years

The California Department of Education reports the graduation rate as the percent of high school students receiving their high school diploma in four years. The high school graduation rate in 2013 for Yolo County was 87.5%, above the state percent at 80.4%. High School graduation rates in Yolo County by race and ethnicity showed that 93.2% of Whites graduate in four years, compared to 86.8 % of Blacks, 81.1% of Hispanic/Latinos, 93.4% of Asians and 84.9% of non-Hispanic others.

Percent – Adults Over the Age of 25 with No High School Diploma

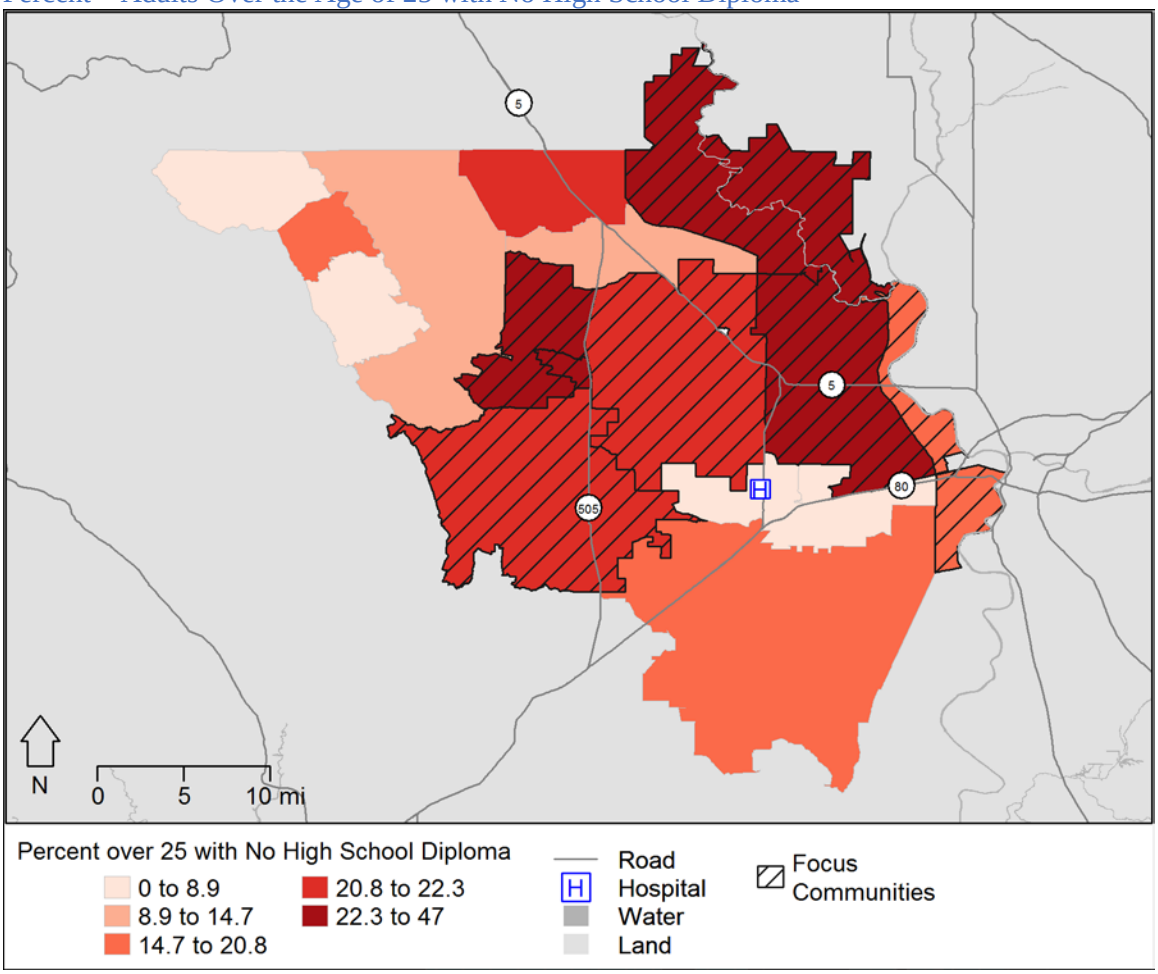

Figure 29: Percent over 25 Years Old with No High School Diploma

The percent of residents without a high school diploma was 15.7% for Yolo County and 18.8% for the state. Nine of the 17 SDH HSA ZIP codes had a higher percentage of residents without a diploma than both the county and state benchmarks. The most notable were Focus Communities 95653 (Madison) at 47.0%, 95645 (Knights Landing) at 40.1%, and 95627 (Esparto) at 30.9%.

Percent – Non-proficient Reading Level in Fourth Grade

Data from the California Department of Education for 2012-2014 indicated that 34.0% of 4th graders in Yolo County are not proficient in reading at the 4th grade level, slightly below the state benchmark of 36.0%. Reading proficiency in 4th grade is important because it is linked to poverty, unemployment and barriers to healthcare access. Percent of reading proficiency differs significantly by race and ethnicity. An examination of reading proficiency in Yolo County by race and ethnicity revealed that 18.0% of White students were not proficient, 44.1% of Black students, 47.0% of Hispanic/Latino students, 41.2% of Native American/Alaskan Native students, 36.8% of Native Hawaiian/Pacific Islander students, and 25.1% of Asian students were not proficient in reading at the 4th grade level.

Percent – 3 and 4 Year Olds Enrolled in Preschool

Data from the US Census Bureau for 2009-2013 indicated that 60.1% of 3 and 4 year-olds in the SDH HSA are in preschool, well above the state benchmark of 49.1%. This data is important as access to early education is a social determinant of health.

Rate – Suspensions per 100 Students

The rate of suspensions for the SDH HSA, as reported by the California Department of Education, was 5.60 per 100 students, above the state rate of 4.04 per 100 students. This is an important health indicator because it is related to educational attainment and crime in the community as an adult.

Social Services

Indicators used in this assessment to examine social services included data on the percent of population receiving services, including public insurance, Medicaid, public assistance, and percent of families eligible for free and reduced price lunch.

Percent – Population on Public Health Insurance

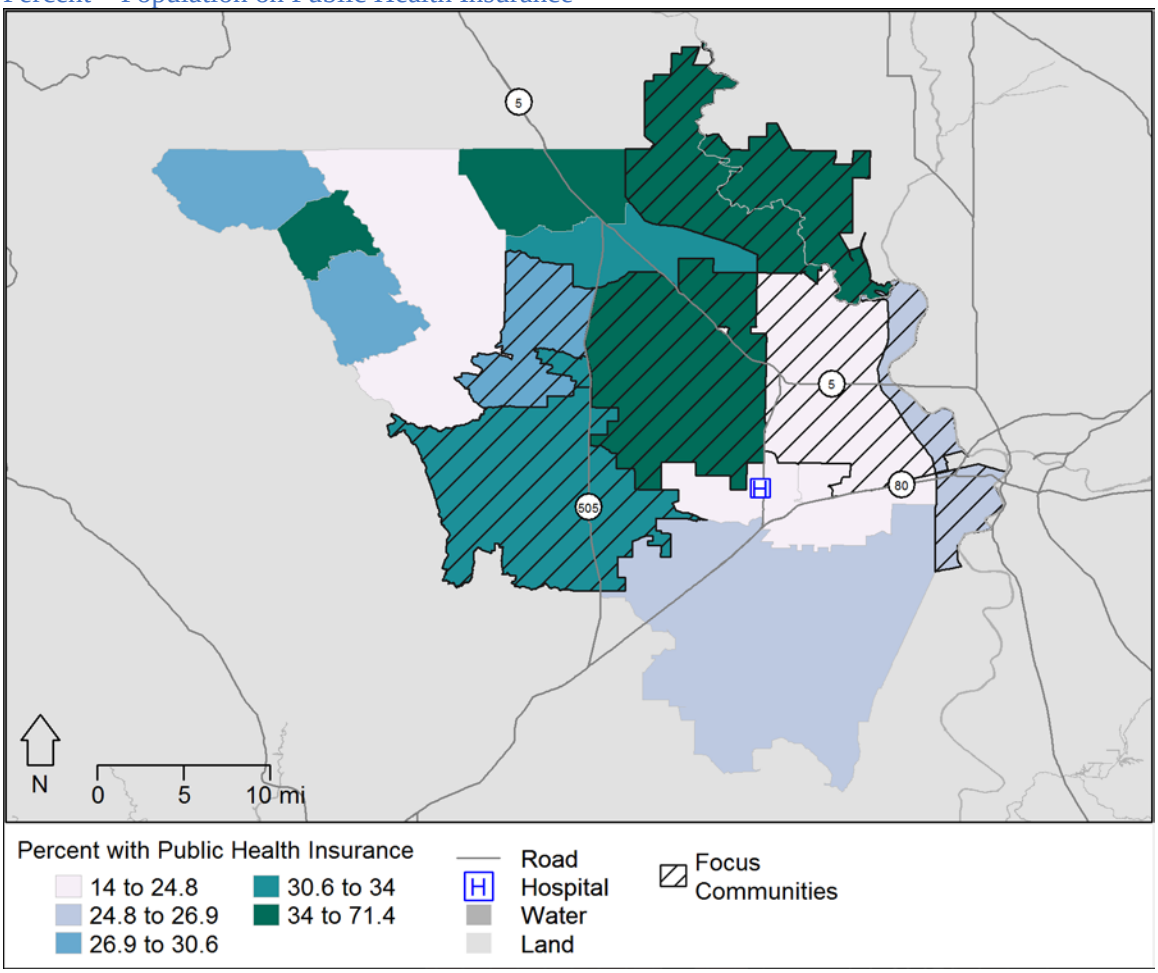

Figure 30: Percent of Population on Public Health Insurance

Data on the percent of residents with public insurance showed clear economic and access disparities. Four of the 17 SDH HSA ZIP codes had percentages of residents with public insurance higher than the county percent at 24.9% and the state at 29.5%. These ZIP codes include: 95637 (Guinda) at 71.4%, 95645 (Knights Landing) at 40.3%, 95937 (Dunnigan) at 38.6% and 95695 (Woodland) at 34.2%.

Percent – Population receiving Medicaid (Medi-Cal)

Though the above data provides information on the percent of population on all sources of public health insurance, the US Census Bureau reports the percent of population receiving Medicaid specifically. For the SDH HSA, 16.6% of residents receive Medicaid, below the state percent of 23.4%.

Percent – Population Receiving Public Assistance

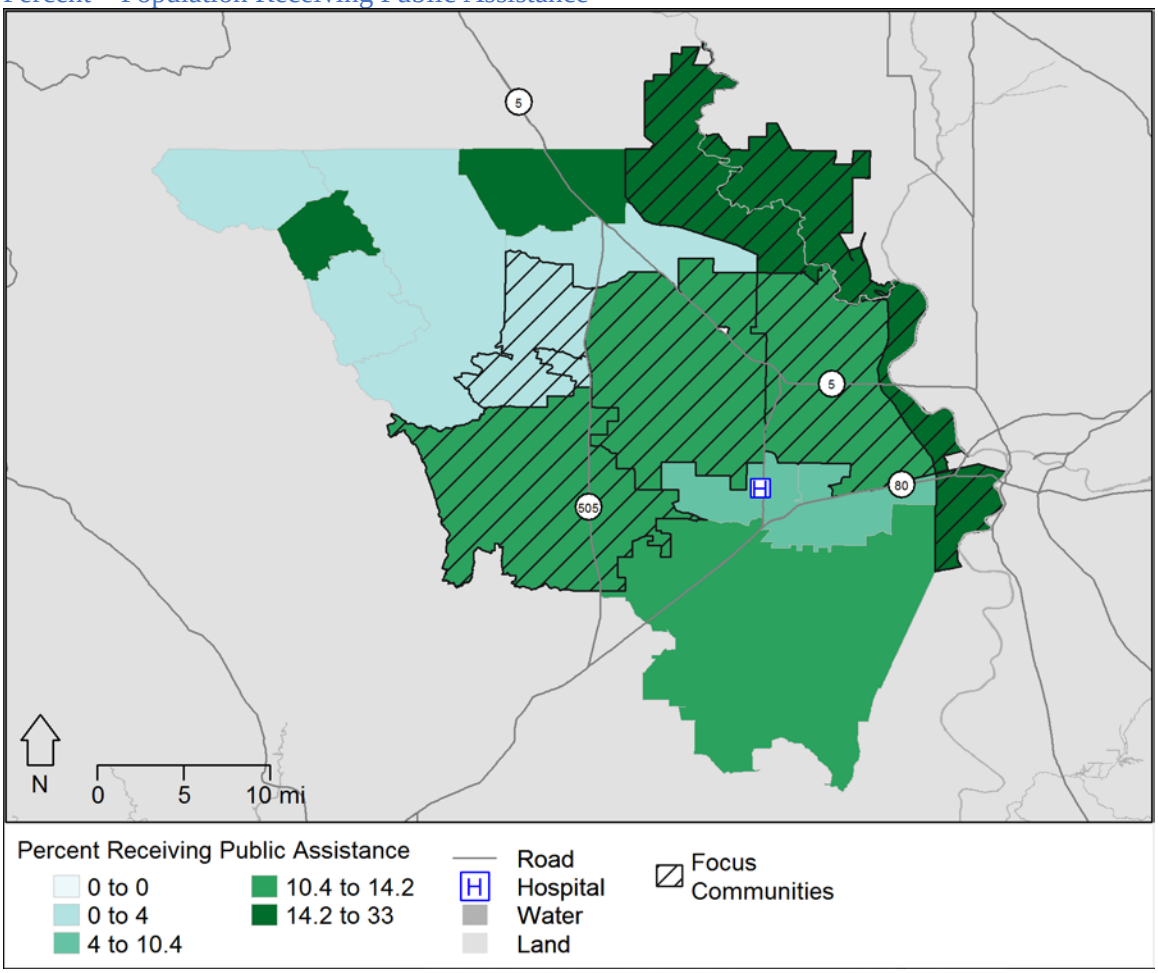

Figure 31: Percent of Population Receiving Public Assistance

The percent of population receiving public assistance varied across the SDH HSA, with four ZIP codes at a higher percentage than both the county and state benchmarks of 10.9% and 12.1%, respectively. ZIP code 95637 (Guinda) had the highest percent at 33.0%, followed by 95937 (Dunnigan) at 29.5%.

Percent – Students Eligible for Free and Reduced Priced Lunch in Schools

Data from the National Center for Education Statistics for 2013-2014 indicated that 50.5% of school-aged children in the SDH HSA are eligible for Free and Reduced Priced Lunch, below the state percent of 58.1%. This indicator is important because it identifies service needs associated with poverty, which is a social indicator of health status in a community.

PRIORITIZED DESCRIPTION OF SIGNFICANT COMMUNITY HEALTH NEEDS

The following is a list of eight significant health needs for the SDH HSA in prioritized order. The process and method for the determination of significant health needs and the prioritization criteria follows. Each prioritized significant health need is then detailed further with the quantitative and qualitative data that supports its inclusion.

1. Active Living and Healthy Eating
2. Access to Behavioral Health Services
3. Disease Prevention, Management and Treatment
4. Safe, Crime and Violence Free Communities
5. Access to High Quality Health Care and Services
6. Basic Needs (Food Security, Housing, Economic Security, Education)
7. Affordable and Accessible Transportation
8. Pollution-Free Living and Work Environments

Process and Methods for Prioritizing Significant Health Needs

Potential Health Need (PHN) Categories

Significant health needs were identified through an integration of both qualitative and quantitative data. The process began by generating a list of eight broad potential health needs (PHN categories) that could exist within the SDH HSA as well as subcategories of these broad needs as applicable. The PHN categories and subcategories were identified through consideration of the following inputs: the health needs identified in the 2013 CHNA process; the categories in the Kaiser Permanente Community Commons Data Platform (CCDP) - preliminary health needs identification tool; and a preliminary review of primary data. This resulted in a list of eight PHNs for the SDH HSA.

Quantitative/Qualitative Analysis on PHN Categories

Once the PHN categories were created, quantitative and qualitative indicators associated with each category and subcategories were identified in a crosswalk table. The potential health need categories, subcategories and associated indicators were then vetted and finalized by members of the CHNA Collaborative prior to identification of the significant health needs. A full list of the secondary indicators and primary data concepts associated with each PHN category is displayed in Appendix C.

Thresholds for Significant Health Needs (SHNs)

While all potential health needs exist within the SDH HSA to a greater or lesser extent, the purpose was to identify those that were most significant. A health need was determined to be significant through extensive analysis of the secondary and primary data for the HSA.

For the secondary (quantitative) data, indicators were flagged that compared unfavorably in size and scope of the problem to state benchmarks, or had evident disparities among racial/ethnic groups. Indicators from the CCDP were flagged if: (a) the SDH HSA value performed poorly (>2% or 2 percentage point difference) or moderately (between 1-2% or 1-2 percentage point difference) compared to the state benchmark. Indicators sourced by Valley Vision were flagged if they compared unfavorably to benchmarks by any amount as presented in Appendix B.

Prioritized Significant Health Need Identification Process

Once significant health needs were identified, they were prioritized through the following process. First, health needs were given a score based upon the degree to which they met the criteria outlined above. Health needs that met or exceeded the thresholds for both the primary (50%) and secondary (40%) data categories were given a score of two (2 points); health needs that met or exceeded the thresholds for only one of the categories were given a score of one (1 point). The health needs were then ranked so that those with two points were put into a higher tier for prioritization than those with one point.

Secondly, health needs were further ranked within their tiers based upon additional analysis of the primary data. As previously mentioned, the interview guide for primary data collection prompted participants to identify the health issues in their communities that were salient to them and most urgent/important to address. Thematic analyses were conducted on the responses to this question and matched with the significant health need categories. The percentage of sources referring to each health need as a priority was calculated from this analysis, and then used for further prioritization of the health needs within tiers. Health needs with a higher percentage of sources were ranked above those with a lower percentage of sources identifying that health need as a priority.

Prioritized Significant Health Needs for Sutter Davis Hospital

Table 31 displays the full results of data synthesis to identify and prioritize the significant health needs for the SDH HSA. Each prioritized health need is listed with the corresponding secondary and primary data which led to its determination as a need.

Table 31: Prioritization of Significant Health Needs with Data Scoring and Ranked by Importance

Sutter Davis Hospital (N=22)					
	RANK	**Significant Health Needs**	**QUANT**	**QUAL**	**IMPORTANCE**
			40%*	50%*	
Tier 2	1	Active Living and Healthy Eating	45%	90%	52%
	2	Behavioral Health	50%	95%	43%
	3	Disease Prevention/Management	50%	71%	24%
	4	Safe Communities	50%	86%	19%
Tier 1	5	Access to Care	24%	100%	67%
	6	Basic Needs	24%	100%	33%
	7	Transport	33%	71%	24%
	8	Pollution Free Communities	67%	38%	5%

Tier 2 signifies that a health need met both the quantitative and qualitative thresholds. The health needs in tier 2 were then sorted by percent importance.

Tier 1 signifies that a health need met one of the quantitative or qualitative thresholds. The health needs in tier 1 were then sorted by percent importance.

1. Active Living and Healthy Eating

This category includes all components of healthy eating and active living including health behaviors (e.g. fruit and vegetable consumption), associated health outcomes (e.g. diabetes) and aspects of the physical environment/living conditions (e.g. food deserts). The category does not include food security, which is a component of the Basic Needs category.

Quantitative Indicators	Qualitative Themes
● Physical Inactivity – Adults ● Physical Inactivity – Youth ● Heart disease – ED visits ● Diabetes Management ● Fruit and vegetable expenditures ● Percent youth overweight ● Percent youth obese ● Colorectal cancer – ED visits ● Diabetes – ED visits ● USDA defined food desert ● Hypertension – ED visits ● Soda expenditures ● Food Environment - Grocery Stores	● Lack of access to safe places to be physically active - crime and drug abuse limit physical activity in some cases ● Need more walkable communities - areas of the county lack sidewalks and bike lanes - adequate lighting is needed in some areas ● Participation in recreational opportunities can be cost-prohibitive, especially for youth and older adults ● Physical Education and physical activity lacking in some schools ● Use of technology leads to sedentary lifestyles ● Lack of access to healthy affordable foods in the community ● Food deserts in low SES communities - lack of grocery stores with quality fruits and vegetables - abundance of unhealthy food options ● High cost of eating healthy – cheaper food is more shelf-stable and filling ● Knowledge on how to make healthier choices and prepare healthier foods is vital, nutrition education best delivered in a culturally sensitive way

2. Access to Behavioral Health Services

This category encompasses the following needs related to behavioral health:

- Access to mental health and substance abuse prevention and treatment services
- Tobacco education, prevention and cessation services
- Social engagement opportunities (especially for youth and seniors)
- Suicide prevention

This category includes health behaviors (e.g. substance abuse), associated health outcomes (e.g. COPD) and aspects of the social and physical environment (e.g. social support and access to liquor stores). In addition, this category includes life expectancy since persons with severe mental health issues may have a lower life expectancy.

Quantitative Indicators	Qualitative Themes
● Alcohol consumption ● Alcohol expenditures ● Tobacco expenditures ● Alzheimer's Disease – Mortality ● Chronic Lower Respiratory Disease - Mortality	● Depression, anxiety and daily stress common, especially for older adults and youth ● Barriers in accessing mental health care - lack of child and geriatric psychiatrists - lack of providers who accept Medi-Cal - Long wait times - Lack of transportation, especially for rural residents

● Chronic Obstructive Pulmonary Disease – ED visits ● Health Professional Shortage Area – Mental Health ● Smoking prevalence ● Lung Cancer -- ED visits ● Substance abuse -- ED visits ● Mental health -- ED visits ● Self-Inflicted Injury – ED visits	● Provider insensitivity towards vulnerable populations (i.e. homeless, seniors, LGBTQ, racial/ethnic groups) ● Mental health care in the Emergency Department is difficult and stigma is an issue ● Older adults with Alzheimer's and dementia – there is a huge gap of assessment and services ● Need more social engagement support for older adults to prevent depression and anxiety ● Co-morbidity between mental health and physical health - better care coordination is needed ● Adverse childhood experiences have led to an increase in children and young adults needing mental health services ● Alcohol and drug use a major issue ● Drug/alcohol and tobacco abuse common with people experiencing homelessness ● Need more substance abuse treatment programs ● Need more programs for youth to keep them engaged and less likely to engage in substance abuse

3. Disease Prevention, Management and Treatment

This category encompasses the following health outcomes that require disease prevention and/or management measures as a requisite to improve health status:

- Cancer: Breast, Cervical, Colorectal, Lung, Prostate
- CVD/Stroke: Heart Disease, Hypertension, Renal Disease, Stroke
- HIV/AIDS/STDS: Chlamydia, Gonorrhea; HIV/AIDS
- Asthma

This category includes health behaviors that are associated with chronic and communicable disease (e.g., fruit/vegetable consumption, screenings), health outcomes that are associated with these diseases or conditions (e.g. overweight/obesity), and associated aspects of the physical environment (e.g. food deserts).

Quantitative Indicators	Qualitative Themes
● Alcohol consumption ● Alcohol expenditures ● Tobacco expenditures ● Smoking prevalence ● Heart disease – ED visits ● Asthma prevalence ● Asthma – ED visits ● Pollution Burden Score ● Lung cancer – ED visits ● Diabetes – ED visits ● Diabetes – Management ● High Blood Pressure - Unmanaged ● USDA defined food desert ● Hypertension – ED visits	● Heart disease, stroke and diabetes were the most commonly mentioned conditions in the community ● Respiratory illnesses were the second most commonly mentioned condition ● High rates of asthma and allergies, and medications are often cost prohibitive for low-income populations ● Breast, colon, prostate and lung cancer were discussed

- Fruit and Vegetable expenditures
- Physical Inactivity – Adult
- Physical Inactivity – Youth
- Percent youth overweight
- Percent youth obese
- Breast cancer – ED visits
- Breast cancer – incidence
- Chlamydia – incidence
- Gonorrhea – incidence
- Colorectal cancer – ED visits
- Prostate cancer – ED visits
- Stroke – mortality
- Stroke – ED visits
- STD – No HIV Screening

4. Safe, Crime and Violence Free Communities

This category includes safety from violence and crime, including violent crime, property crimes and domestic violence. This category includes health behaviors (e.g. assault), associated health outcomes (e.g. mortality - homicide) and aspects of the physical environment (e.g. access to liquor stores). In addition, this category includes factors associated with unsafe communities such as substance abuse and lack of physical activity opportunities, and unintentional injury such as motor vehicle accidents.

Quantitative Indicators	Qualitative Themes
● Physical inactivity – Adults ● Physical inactivity - Youth ● Alcohol consumption ● Alcohol expenditures ● Substance Abuse – ED visits ● Pedestrian accidents - mortality ● Domestic violence rates ● Major crime rates	● Alcohol and substance abuse contribute to an increase in community violence ● Domestic violence and child abuse are of concern in the county ● Adverse childhood experiences from exposure to violence result in trauma and maladaptive behavior in area youth ● Bullying against vulnerable groups (i.e. homeless, LGBTQ identifying individuals, ethnic minorities, older adults and young people) is a concern in the county ● Need more programs for youth to keep them engaged and less likely to engage in substance abuse or crime

5. Access to High Quality Health Care and Services

This category encompasses the following needs related to access to care:

- Access to Primary and Specialty Care
- Access to Dental Care
- Access to Maternal and Infant Care
- Health Education & Literacy
- Continuity of Care, Care Coordination & Patient Navigation
- Linguistically & Culturally Competent Services

This category includes health behaviors that are associated with access to care (e.g. cancer screening), health outcomes that are associated with access to care/lack of access to care (e.g. low birth weight) and aspects of the service environment (e.g. health professional shortage area). The category does not include access to mental health providers, which is a component of the Access to Behavioral Health Services category.

Quantitative Indicators	Qualitative Themes
● Access to Dentists ● Dental/Oral Diseases (ED) ● Health Professional Shortage Area – Primary Care ● Soda expenditures ● Percent receiving prenatal care	● Affordable Care Act insured low income individuals but coverage doesn't equal access ● Barriers to accessing health care for those covered by Medi-Cal: - Lack of primary care providers - Lack of specialty providers - Lack of dental providers - Long wait times to be seen - Language barriers between providers and patients - Lack of transportation, especially for rural residents ● Medi-Cal providers are hard to find and often aren't accepting new patients; reimbursement rates are low leading to few providers ● Care for undocumented individuals is a big concern in the county ● Prescription drugs can be cost prohibitive for low-income individuals ● Culturally sensitive care is important for vulnerable populations (i.e. homeless, older adults, LGBTQ, racial/ethnic groups) ● There is a need for more care coordination and navigation services for those that are new to the health care system

6. Basic Needs **(Food Security, Housing, Economic Security, Education)**

This category encompasses the following basic needs:

- Economic security (income, employment, benefits)
- Food security/insecurity
- Housing (affordable housing, substandard housing)
- Education (reading proficiency, high school graduation rates)
- Homelessness

Quantitative Indicators	Qualitative Themes
● Food Insecurity Rate ● Assisted Housing – HUD units ● Percent Households with No Vehicle	● Lack of stable employment, especially for seasonal workers ● Need more employment opportunities in the region ● Cost of living is high and wages are low ● Many older adults and disabled individuals are living in poverty

● Population in Poverty (Under 100% Federal Poverty Level) ● School Suspensions	● Large portion of individuals classify as "working poor" who don't qualify for assistance programs yet can't afford services ● Need for more job training and language classes for English language learners ● Food insecurity exacerbated by lack of reliable or affordable transportation for rural residents to food distribution sites ● Lack of safe, affordable housing for vulnerable populations, especially in West Sacramento and Woodland (i.e. transitional youth, those experiencing homelessness or chronic mental illness)

7. Affordable and Accessible Transportation

This category includes the need for public or personal transportation options, transportation to health services and options for persons with disabilities.

Quantitative Indicators	Qualitative Themes
● Population living near a transit stop ● Percent households with No Vehicle	● Many residents lack adequate reliable and affordable transportation ● Lack of transportation effects ability to get to grocery stores, food distribution sites, and other health services ● Residents in rural parts of the county have to travel far to get comprehensive health care services ● Bus routes in rural and low-income communities need to operate more frequently and go beyond current routes ● Older adults, disabled people, and youth without adequate transportation can feel isolated and depressed ● There is a need for on-demand transportation services (i.e. shuttle or van) for rural residents and older adults to get to medical and dental appointments

8. Pollution-Free Living and Work Environments

This category includes measures of pollution such as air and water pollution levels. This category includes health behaviors associated with pollution in communities (e.g. physical inactivity), associated health outcomes (e.g. COPD) and aspects of the physical environment (e.g. road network density). In addition, this category includes tobacco usage as a pollutant. The category does <u>not</u> include climate related factors such as drought and heat stress.

Quantitative Indicators	Qualitative Themes
● Physical inactivity – Adults ● Physical inactivity – Youth ● Population living near a transit stop ● Tobacco expenditures ● Smoking rate	● Asthma and allergies are major issues for area residents and medications are cost prohibitive for low-income individuals ● Smoking is an issue in the county, especially in the lower SES areas ● Pesticide use is of concern for residents living close to agricultural fields

● Heart disease – ED visits ● Asthma – prevalence ● Asthma – ED visits ● Percent youth obesity ● Chronic Lower Respiratory Disease – mortality ● Chronic Obstructive Pulmonary Disease – ED visits ● Pollution Burden Score	● Cancer is an issue for residents, especially lung, breast and colon cancers; residents connected cancer to pollution exposure

RESOURCES POTENTIALLY AVAILABLE TO MEET SIGNIFICANT HEALTH NEEDS

Sixty-six resources were identified in the SDH HSA in accordance with the analytical method detailed in Appendix C. The method included starting with the list of resources from the 2013 Sutter Davis Hospital CHNA, verification that the resource still existed, and adding newly identified resources in the primary data for the 2016 CHNA report. Examination of the resources revealed the following numbers of resources for each significant health need:

Table 32: Number of Resources for Each Significant Health Need in Prioritized Order

Significant Health Need (in priority order)	Number of resources
1. Active Living and Healthy Eating	18
2. Access to Behavioral Health Services	25
3. Disease Prevention, Management and Treatment	13
4. Affordable and Accessible Transportation	3
5. Safe, Crime and Violence Free Communities	19
6. Access to High Quality Health Care and Services	30
7. Basic Needs (Food Security, Housing, Economic Security, Education)	42
8. Pollution-Free Living and Work Environments	2

Some resources are located outside of Yolo County; however, they will serve individuals within the greater Sacramento region. For more specific examination of resources by significant health need and by geographic locations, see the full list in Appendix H.

IMPACT OF ACTIONS TAKEN SINCE PREVIOUS CHNA

Impact of Actions Taken Since the Previous CHNA

The final regulations issued by the Department of Treasury on December 29, 2014 regarding nonprofit hospitals conducting CHNAs require that each hospital's CHNA report include: "… an evaluation of the impact of any actions that were taken since the hospital facility finished conducting its immediately preceding CHNA to address the significant health needs identified in the hospital facility's prior CHNA(s) (p. 78969)."[27] Similarly, the State of California requires all non-government nonprofit hospitals licensed by the state to submit a "Community Benefits Plan" to OSHPD annually. The plan must include: "…a description of the activities that the hospital has undertaken in order to address identified community needs within its mission and financial capacity…" (p. 1).[28] OHSPD makes each hospital's community

[27] *Federal Register*, Vol. 79, No. 250, (Wednesday, December 31, 2014). Department of the Treasury, Internal Revenue Service.

[28] Hospital Community Benefit Plans (n.d.). *SB697 (Chapter 812, Statutes of 1994)*. The Office of Statewide Health Planning and Development. Retrieved April 27, 2016 from: http://www.oshpd.ca.gov/HID/CommunityBenefit/SB697CommBenefits.pdf

benefit plan available to the general public through its website or by request. The following descriptions of the impact of actions taken by SDH as noted in the hospital's annual Community Benefit Plan.

Sutter Davis Hospital

Prior to this CHNA, SDH conducted its most recent CHNA in 2013. The 2013 CHNA identified 10 specific health needs. Working within its mission and capabilities, focused its implementation on lack of access to primary and preventive services. SDH developed plans to address these health needs and the specific outcomes of these efforts are described below.

Lack of access to primary and preventative services

CommuniCare:

- In 2014, CommuniCare Health Centers saw 21,850 unduplicated patients and provided 106,796 appointments. In addition, CommuniCare connected 28,450 patients to a primary care provider.

- In 2015, CommuniCare Health Centers saw 31,645 patients and provided 119,282 appointments, showing an increase in both patients served and number of appointments provided since 2014. In addition, CommuniCare connected 28,450 patients to a primary care provider.

Free Mammogram Screenings:

- Throughout the month of October, Sutter Diagnostic Imaging centers across the region provided uninsured/underinsured women the opportunity to receive free digital mammograms. As a result of these collaborative events, we were able to screen more than 400 uninsured women. In 2014, we had Insurance Enrollment Specialists from Covered California attend some of the screening events to educate, connect and enroll patients who need it, in health insurance. As a result, the Covered CA team made many great connections with hundreds of women and will be following up with many of the women to help enroll them in insurance. In addition, we are integrated our ED Navigators into some of the screening events, to provide onsite primary and mental health care referrals and other community resources to the women.

- Throughout the month of October, Sutter Diagnostic Imaging centers across the region provided uninsured/underinsured women the opportunity to receive free digital mammograms. As a result of these collaborative events, we were able to screen 502 uninsured women in 2015. We have insurance Enrollment Specialists from Covered California attend some of the screening events to educate, connect and enroll patients who need it, in health insurance. In addition, we have integrated our ED Navigators and FQHC partners into some of the screening events, to provide onsite primary and mental health care referrals and other community resources to the women.

CONCLUSION

Nonprofit hospitals play an important role in the lives of the communities they serve. CHNAs help nonprofit hospitals, as well as other community organizations, in determining where to focus community benefit and improvement efforts, including geographic locations and specific populations living within their service areas. The intention of the CHNA is to assist in improving the lives of hospital service area residents, and the larger geographical area served. Results provided in this assessment will help inform efforts with work towards improving the health of a community and better addressing specific target populations with significant health and health-related disparities.

APPENDICES

Appendix A: Secondary Data Dictionary and Processing

Introduction

The secondary data supporting the 2016 Community Health Needs Assessment was collected from a variety of sources, and was processed in multiple stages before it was used for analysis. This document details those various stages. Approaches used to define ZIP code boundaries, and the approaches that were used to integrate records reported for PO boxes into the analysis are described. General data sources are listed, followed by a description of the basic processing steps applied to most variables and concluding with detail on additional specific processing steps used to generate a subset of more complicated indicators.

ZIP Code Definitions

All morbidity and mortality variables collected in this analysis are reported by patient mailing ZIP codes. ZIP codes are defined by the US Postal Service as a single location (such as a PO Box), or a set of roads along which addresses are located. The roads that comprise such a ZIP code may not form contiguous areas, and do not match the approach of the US Census Bureau, which is the main source of population and demographic information in the US. Instead of measuring the population along a collection of roads, the Census reports population figures for distinct, contiguous areas. In an attempt to support the analysis of ZIP code data, the Census Bureau created ZIP Code Tabulation Areas (ZCTAs). ZCTAs are created by identifying the dominant ZIP code for addresses in a given Census block (the smallest unit of Census data available), and then grouping blocks with the same dominant ZIP code into a corresponding ZCTA. The creation of ZCTAs allows us to identify population figures that, in combination the morbidity and mortality data reported at the ZIP code level, allow for the calculation of rates for each ZCTA. The difference in the definition between mailing ZIP codes and ZCTAs has two important implications for analyses of ZIP level data.

First, it should be understood that ZCTAs are approximate representations of ZIP codes, rather than exact matches. While this is not ideal, it is nevertheless the nature of the data being analyzed. Secondly, not all ZIP codes have corresponding ZCTAs. Some PO Box ZIP codes or other unique ZIP codes (such as a ZIP code assigned to a single facility) may not have enough addressees residing in a given census block to ever result in the creation of a ZCTA. However, residents whose mailing addresses correspond to these ZIP codes will still show up in reported morbidity and mortality data. This means that rates cannot be calculated for these ZIP codes individually because there are no matching ZCTA population figures.

In order to incorporate these patients into the analysis, the point location (latitude and longitude) of all ZIP codes in California[29] were compared to ZCTA boundaries.[30] Because various morbidity and mortality data sources were available in different years, this comparison was made between the ZCTA boundaries and the point locations of ZIP codes in April of the year (or the final year in the case of variables aggregated over multiple years) for which the morbidity and mortality variables were reported. All ZIP codes (whether PO Box or unique ZIP code) that were not included in the ZCTA dataset were identified. These ZIP codes were then assigned to either ZCTA that they fell inside of, or in the case of rural areas that are not completely covered by ZCTAs, the ZCTA to which they were closest. Morbidity and

[29] Datasheer, L.L.C. (2015, April 15). *ZIP Code Database DELUXE BUSINESS.* Retrieved from Zip-Codes.com: http://www.Zip-Codes.com

[30] U.S. Census Bureau. (2015). *TIGER/Line® Shapefiles and TIGER/Line® Files.* Retrieved August 31, 2011, from http://www.census.gov/geo/maps-data/data/tiger-line.html

mortality information associated with these PO Box or unique ZIP codes were then assigned added to the ZCTAs to which they were assigned.

Data Sources

The majority of mortality, morbidity, and socio-economic variables were collected from three main data sources: the US Census Bureau (Census), the California Office of Statewide Health Planning and Development (OSHPD), and the California Department of Public Health (CDPH). Census data was collected to provide both descriptions of population characteristics for the study area, and to calculate rates for morbidity and mortality variables. Table 33 below lists the 2013 population characteristic variables and sources. Table 34 below lists sources for variables used to calculate morbidity and mortality rates, which were collected for 2012, 2013, and 2014. These demographic variables were collected variously at the Census blocks and tracts, ZCTA, county, and state levels. In urban areas, Census blocks are roughly equivalent to a city block, and tracts to a neighborhood. Health outcome and health behavior indicators were also collected from the Kaiser Permanente Community Commons Data Platform (CCDP) to compliment the indicators already collected from other sources.

Kaiser Permanente Community Commons Data Platform (CCDP)

The CCDP is a web-based platform designed to assist hospitals, non-profit organizations, state and local health departments, financial institutions and other organizations seeking to better understand the needs and assets of their communities. The CCDP was used to collect additional indicators, including indicators by race and ethnicity, in order to better understand the drivers of health in the community and prioritize issues that require the most urgent attention. The list of CCDP indicators used is detailed below in Table 37, Remaining Secondary Indicators.

Table 33: Demographic Variables Collected from the US Census Bureau30

Derived Variable Name	Source Variable Names	Source
Percent Minority (Hispanic or non-White)	Total Population - Not Hispanic or Latino: - White alone	2013 American Community Survey 5-year Estimate Table B03002
Population 5 Years or Older who speak Limited English	For age groups 5 to 17; 18 to 64; and 65 years and over: Speak Spanish: - Speak English "not well"; Speak Spanish: - Speak English "not at all"; Speak other Indo-European languages: - Speak English "not well"; Speak other Indo-European languages: - Speak English "not at all"; Speak Asian and Pacific Island languages: - Speak English "not well"; Speak Asian and Pacific Island languages: - Speak English "not at all"; Speak other languages: - Speak English "not well"; Speak other languages: - Speak English "not at all"	2013 American Community Survey 5-year Estimate Table B16004
Percent Households 65 years or Older in Poverty	Income in the past 12 months below poverty level: - Family households: - Married-couple family: - Householder 65 years and over; Income in the past 12 months below poverty level: - Family households: - Other family: - Male householder, no wife present: - Householder 65 years and over; Income in the past 12 months below poverty level: - Family households: - Other family: - Female householder, no husband present: - Householder 65 years and over; Income in the past 12 months below poverty level: - Nonfamily households: - Male householder: - Householder 65 years and over; Income in the past 12 months below poverty level: - Nonfamily households: - Female householder: - Householder 65 years and over; Total Households	2013 American Community Survey 5-year Estimate Table B17017
Median income	Estimate; Median household income in the past 12 months (in 2013 inflation-adjusted dollars)	2013 American Community Survey 5-year Estimate Table B19013
GINI Coefficient	Gini Index	2013 American Community Survey 5-year Estimate Table B19083

Average Population per Housing Unit	Total population in occupied housing units	2013 American Community Survey 5-year Estimate Table B25008
Percent with Income Less Then Federal Poverty Level	Total: - Under .50; Total: - .50 to .99	2013 American Community Survey 5-year Estimate Table C17002
Percent Foreign Born	Total population - Foreign born	2013 American Community Survey 5-year Estimate Table DP02
Percent Non-Citizen	Foreign-born population - Not a U.S. citizen	2013 American Community Survey 5-year Estimate Table DP02
Percent Over 18 that are Civilian Veterans	VETERAN STATUS - Civilian population 18 years and over - Civilian veterans	2013 American Community Survey 5-year Estimate Table DP02
Percent Civilian Noninstitutionalized Population with a Disability	DISABILITY STATUS OF THE CIVILIAN NONINSTITUTIONALIZED POPULATION - Total Civilian Noninstitutionalized Population	2013 American Community Survey 5-year Estimate Table DP02
Percent with Public Assistance	INCOME AND BENEFITS (IN 2013 INFLATION-ADJUSTED DOLLARS) - With cash public assistance income	2013 American Community Survey 5-year Estimate Table DP03
Percent with Public Insurance	HEALTH INSURANCE COVERAGE - Civilian noninstitutionalized population - With health insurance coverage - With public coverage	2013 American Community Survey 5-year Estimate Table DP03
Percent Renter Occupied Households	Occupied housing units - Renter-occupied	2013 American Community Survey 5-year Estimate Table DP04
Percent Vacant Housing Units	Total housing units - Vacant housing units	2013 American Community Survey 5-year Estimate Table DP04
Percent Households with No Vehicle	Occupied housing units - No vehicles available	2013 American Community Survey 5-year Estimate Table DP04
Percent Households with Commute Times to work 60 minutes or more	Workers with travel times 60 to 89 minutes; workers with travel times 90 minutes or more; Total workers 16 years and over who did not work at home;	2013 American Community Survey 5-Year Estimate Table B08012
Total Population	Total population	2013 American Community Survey 5-year Estimate Table DP05
Percent Asian (not Hispanic)	Total population - Not Hispanic or Latino - Asian alone	2013 American Community Survey 5-year Estimate Table DP05

Percent Black (not Hispanic)	Total population - Not Hispanic or Latino - Black or African American alone	2013 American Community Survey 5-year Estimate Table DP05
Percent Hispanic (any race)	Total population - Hispanic or Latino (of any race)	2013 American Community Survey 5-year Estimate Table DP05
Percent American Indian (not Hispanic)	Total population - Not Hispanic or Latino - American Indian and Alaska Native alone	2013 American Community Survey 5-year Estimate Table DP05
Percent Pacific Islander (not Hispanic)	Total population - Not Hispanic or Latino - Native Hawaiian and Other Pacific Islander alone	2013 American Community Survey 5-year Estimate Table DP05
Percent White (not Hispanic)	Total population - Not Hispanic or Latino - White alone	2013 American Community Survey 5-year Estimate Table DP05
Percent Other or Two or More Races (not Hispanic)	Total population - Not Hispanic or Latino - Some other race alone; Total population - Not Hispanic or Latino - Two or more races	2013 American Community Survey 5-year Estimate Table DP05
Percent Female	Total population - Female	2013 American Community Survey 5-year Estimate Table DP05
Percent Male	Total population - Male	2013 American Community Survey 5-year Estimate Table DP05
Median Age	Median age (years)	2013 American Community Survey 5-year Estimate Table DP05
Population by Age Group	Under 5 years; 5 to 9 years; 10 to 14 years; 10 to 14 years; 20 to 24 years; 25 to 34 years; 35 to 44 years; 5 to 54 years; 55 to 59 years; 60 to 64 years; 65 to 74 years; 75 to 84 years; 85 years and over	2013 American Community Survey 5-year Estimate Table DP05
Percent Single Female Headed Households	Female householder, no husband present, family household	2013 American Community Survey 5-year Estimate Table S1101
Percent 25 or Older Without a High School Diploma	100 - Percent high school graduate or higher	2013 American Community Survey 5-year Estimate Table S1501

Percent Families with Children in Poverty	All families - Percent below poverty level; Estimate; With related children under 18 years	2013 American Community Survey 5-year Estimate Table S1702
Percent Single Female Headed Households in Poverty	Female householder, no husband present - Percent below poverty level; Estimate; With related children under 18 years	2013 American Community Survey 5-year Estimate Table S1702
Percent Unemployed	Unemployment rate; Estimate; Population 16 years and over	2013 American Community Survey 5-year Estimate Table S2301
Percent Uninsured	Percent Uninsured; Estimate; Total civilian noninstitutionalized population	2013 American Community Survey 5-year Estimate Table S2701
Percent of Homeowners with Mortgage with Housing Costs above 30% of Income	Percent; SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME (SMOCAPI) - Housing units with a mortgage (excluding units where SMOCAPI cannot be computed) - 30.0 to 34.9 percent; Percent; SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME (SMOCAPI) - Housing units with a mortgage (excluding units where SMOCAPI cannot be computed) - 35.0 percent or more	2013 American Community Survey 5-year Estimate Table DP04
Percent of Homeowners with no Mortgage with Housing Costs above 30% of Income	Percent; SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME (SMOCAPI) - Housing unit without a mortgage (excluding units where SMOCAPI cannot be computed) - 30.0 to 34.9 percent; Percent; SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME (SMOCAPI) - Housing unit without a mortgage (excluding units where SMOCAPI cannot be computed) - 35.0 percent or more	2013 American Community Survey 5-year Estimate Table DP04
Percent of Renters with Rent above 30% of Income	Percent; GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME (GRAPI) - Occupied units paying rent (excluding units where GRAPI cannot be computed) - 30.0 to 34.9 percent; Percent; GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME (GRAPI) - Occupied units paying rent (excluding units where GRAPI cannot be computed) - 35.0 percent or more	2013 American Community Survey 5-year Estimate Table DP04
Percent of All Housing Units with Housing Costs above 30% of Income	Percent; SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME (SMOCAPI) - Housing units with a mortgage (excluding units	2013 American Community Survey 5-year Estimate Table DP04

	where SMOCAPI cannot be computed) - 30.0 to 34.9 percent; Percent; SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME (SMOCAPI) - Housing units with a mortgage (excluding units where SMOCAPI cannot be computed) - 35.0 percent or more; Percent; GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME (GRAPI) - Occupied units paying rent (excluding units where GRAPI cannot be computed) - 30.0 to 34.9 percent; Percent; GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME (GRAPI) - Occupied units paying rent (excluding units where GRAPI cannot be computed) - 35.0 percent or more; Percent; GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME (GRAPI) - Occupied units paying rent (excluding units where GRAPI cannot be computed) - 30.0 to 34.9 percent; Percent; GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME (GRAPI) - Occupied units paying rent (excluding units where GRAPI cannot be computed) - 35.0 percent or more; Housing units with a mortgage (excluding units where SMOCAPI cannot be computed); Housing unit without a mortgage (excluding units where SMOCAPI cannot be computed);Occupied units paying rent (excluding units where GRAPI cannot be computed)

Table 34: Census Variables Used for Mortality and Morbidity Rate Calculations[3, 30]

Derived Variable Name	Source Variable Names	Source
Total Population	Total Population	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014) 2010 Decennial Census Summary File 1
Female	Female	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
Male	Male	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
Age Under 1	DP05: Under 5 years PCT12: Male and Female, ages under 1, 1, 2, 3, and 4	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014); 2010 Decennial Census Summary File 1 Table PCT12
Age 1 to 4	DP05: Under 5 years PCT12: Male and Female, ages under 1, 1, 2, 3, and 4	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014); 2010 Decennial Census Summary File 1 Table PCT12
Age 5 to 14	5 to 9 years; 10 to 14 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
Age 15 to 24	15 to 19 years; 20 to 24 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
Age 25 to 34	25 to 34 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
Age 35 to 44	35 to 44 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
Age 45 to 54	45 to 54 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
Age 55 to 64	55 to 59 years; 60 to 64 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
Age 65 to 74	65 to 74 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
Age 75 to 84	75 to 84 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
Age 85 and over	85 years and over	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
White	HISPANIC OR LATINO AND RACE - Total population - Not Hispanic or Latino - White alone	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
Black	HISPANIC OR LATINO AND RACE - Total population - Not Hispanic or Latino - Black or African American alone	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
Hispanic	HISPANIC OR LATINO AND RACE - Total population - Hispanic or Latino (of any race)	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)

Native American	HISPANIC OR LATINO AND RACE - Total population - Not Hispanic or Latino - American Indian and Alaska Native alone	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)
Asian/Pacific Islander	HISPANIC OR LATINO AND RACE - Total population - Not Hispanic or Latino - Asian alone; HISPANIC OR LATINO AND RACE - Total population - Not Hispanic or Latino - Native Hawaiian and Other Pacific Islander alone	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013, 2014)

Collected morbidity and mortality data included the number of emergency department (ED) discharges, hospital (H) discharges, and mortalities associated with a number of conditions, as well as various cancer and STI incidence rates. Aggregated 2011 – 2013 ED and H discharge data were obtained from the Office of Statewide Health Planning and Development (OSHPD). Table 35 lists the specific variables collected by ZIP code and county. These values report the total number of ED or H discharges that listed the corresponding ICD9 code as either a primary or any secondary diagnosis, or a principle or other E-code, as the case may be. In addition to reporting the total number of discharges associated with the specified codes per ZIP code/county, this data was also broken down by sex (male and female), age (under 1 year, 1 to 4 years, 5 to 14 years, 15 to 24 years, 25 to 34 years, 35 to 44 years, 45 to 54 years, 55 to 64 years, 65 to 74, 75 to 84 years, and 85 years or older), and normalized race and ethnicity (Hispanic of any race, non-Hispanic White, non-Hispanic Black, non-Hispanic Asian or Pacific Islander, non-Hispanic Native American.

Table 35: 2011 – 2013 OSHPD Hospitalization and Emergency Department Discharge Data

Category	Variable Name	ICD9/E-Codes
Cancer	Breast Cancer	174, 175
	Colorectal Cancer	153, 154
	Lung Cancer	162, 163
	Prostate Cancer	185
Chronic Disease	Diabetes	250
	Hypertension	401-405
	Heart Disease	410-417, 428, 440, 443, 444, 445, 452
	Chronic Kidney Disease	580-589
	Stroke	430-436, 438
Infectious Disease	HIV/AIDS	042-044
	STIs	042-044, 090-099, 054.1, 079.4
	Tuberculosis	010-018, 137
Injuries[31]	Assault	E960-E969, E999.1
	Self-Inflicted Injury	E950-E959
	Unintentional Injury	E800-E869, E880-E929
Mental Health	Mental Health	290, 293-298, 301,311
	Mental Health: Substance Abuse	291-292, 303-305
Respiratory	Asthma	493-494
	Chronic Obstructive Pulmonary Disease (COPD)	490-496
Other	Hip Fractures	820
	Oral cavity/Dental	520-529
	Osteoporosis	733

Mortality data, along with some birth data, for each ZIP code in 2010, 2011, and 2012 were collected from the California Department of Public Health (CDPH). The specific variables collected are defined in Table 36. The majority of these variables were used to calculate specific rates of mortality for 2012. A smaller number of them were used to calculate more complex derived indicators. To increase the stability of these derived indicators, rates were calculated using data from 2010 to 2012. These variables include the total number of live births, total number of infant deaths (ages less than 1 year), all-cause mortality by age, births with low infant birth weight, and births with mother's age at delivery under 20. Table 36 consequently also lists the years for which each variable was collected.

[31] E-code definitions for injury variables derived from CDC. (2011). *Matrix of E-code Groupings.* Retrieved March 4, 2013, from Injury Prevention & Control: Data & Statistics(WISQARS): http://www.cdc.gov/injury/wisqars/ecode_matrix.html

Table 36: CDPH Birth and Mortality Data by ZIP Code

Variable Name	ICD10 Code	Years Collected
Total Deaths		2012
Male Deaths		2012
Female Deaths		2012
Deaths by Age Group: Under 1, 1-4, 5-14, 15-24, 25-34,45-54, 55-64, 65-74, 75-84, and 85 and over		2010 - 2012
Diseases of the Heart	I00-I09, I11, I13, I20-I51	2012
Malignant Neoplasms (Cancer)	C00-C97	2012
Cerebrovascular Disease (Stroke)	I60-I69	2012
Chronic Lower Respiratory Disease	J40-J47	2012
Alzheimer's Disease	G30	2012
Unintentional Injuries (Accidents)	V01-X59, Y85-Y86	2012
Diabetes Mellitus	E10-E14	2012
Influenza and Pneumonia	J09-J18	2012
Chronic Liver Disease and Cirrhosis	K70, K73-K74	2012
Intentional Self Harm (Suicide)	U03, X60-X84, Y87.0	2012
Essential Hypertension & Hypertensive Renal Disease	I10, I12, I15	2012
Nephritis, Nephrotic Syndrome and Nephrosis	N00-N07, N17-N19, N25-N27	2012
All Other Causes	Residual Codes	2012
Total Births		2010 - 2012
Births with Infant Birth weight Under 1500 Grams, 1500-2499 Grams		2010 - 2012
Births with Mother's Age at Delivery Under 20		2010 - 2012

Cancer incidence data were obtained from the California Cancer Registry for each ZIP code. The data reported the total aggregated incidence of cancers from 2010 – 2012 for breast, colorectal, lung, and prostate cancers. ZIP codes with more than zero but fewer than three cases were masked. For processing purposes, these masked values were treated as zeroes.

Chlamydia and gonorrhea incidence data for 2014 were obtained from the County Public Health offices in El Dorado, Placer, Sacramento, and Yolo counties. The incidence data were reported by 2014 ZCTA per 10,000 population. A number of steps were taken to process these variables due to differences in reporting geography and data provided. First, some counties provided pre-calculated rates, while others provided raw counts by ZIP code. Second, some counties provided data for all ZIP codes, while others provided only data for those with reported cases exceeding a certain masking standard. Finally, because ZIP codes can cross county boundaries, each county health office provided only information on the cases that occurred in ZIP codes within their respective counties.

The following approaches were applied to address these irregularities. First, pre-calculated rates were only used for those counties for which raw counts were not reported. Second, a consistent standard to

mask rates for ZIP codes with 5 or fewer cases was applied across all counties reporting raw counts, and for counties only reporting rates for a subset of ZIP codes (i.e. Yolo County), it was assumed that counties for which data was not reported had 0 incidence rates. For ZIP codes that fell within multiple counties providing data, these cases were simply totaled for the given ZIP code. For ZIP codes that fall partially outside of the counties reporting data, the calculated rates are based only on cases occurring within the reporting counties.

The remaining secondary variables were collected from a variety of sources, and at various geographic levels. Table 37 lists the sources of these variables, and lists the geographic level at which they were reported.

Table 37: Remaining Secondary Variables

Variable	Year	Definition	Reporting Unit	Data Source
Current Smokers	2014	Current Smoking Status - Adults and Teens	County	2014 California Health Interview Survey http://ask.chis.ucla.edu/AskCHIS/tools/_layouts/AskChisTool/home.aspx#/geography (last accessed 9 Oct 2015)
Food Deserts	2010	USDA Defined Food Desert; Low Access 1 mile Urban 10 Mile rural	Tract	USDA http://www.ers.usda.gov/data-products/food-access-research-atlas/download-the-data.aspx (Last Accessed 9 Oct 2015)
Modified Retail Food Environment Index (mRFEI)	2013	Table 00CZ2 for the following NAICS codes: 445120, 722513, 445230, 452910, 445110	ZCTA	US Census Bureau 2013 County Business Patterns
Park Access	2010	Percent of 2010 ZCTA Population in blocks located within 1/2 mile of a park	ZCTA	2010 Decennial Census SF1; ESRI U.S. Parks 2014, park_dtl.gdb Series Name Data and Maps for ArcGIS® Issue 2014 - World, Europe, and United States
Health Professional Shortage Areas (Primary Care, Dental, Mental Health)	2015	Current Primary Care, Dental Health, and Mental Health Provider Shortage Areas	Shortage Areas (non-point locations)	US Department of Health & Human Services Health Resources and Services Administration; http://datawarehouse.hrsa.gov/data/datadownload/hpsadownload.aspx (last accessed 29 Aug 2015)
Major Crime Rate	2013	Major Crimes (combination of violent crimes, property crimes, and arson)	Law enforcement jurisdiction	California Attorney General - Criminal Justice Statistics Center: Crimes and Clearances http://oag.ca.gov/crime/cjsc/stats/crimes-clearances (last accessed 3 Sep 2015)

Domestic Violence Rate	2013	Domestic Violence-Related Calls for Assistance	Law enforcement jurisdiction	California Attorney General – Criminal Justice Statistics Center: Domestic Violence-Related Calls for Assistance http://oag.ca.gov/crime/cjsc/stats/domestic-violence (last access 30 Oct 2015)
Traffic Accidents Resulting in Fatalities	2013	Traffic Accidents Resulting in Fatalities	Point locations	National Highway Traffic Safety Administration Fatality Analysis Reporting System (FARS) ftp://ftp.nhtsa.dot.gov/fars/2013/DBF/ (lass accessed 8 Sep 2015)
Pollution Burden	2014	Cal EnviroScreen Pollution Burden Scores indicator (based on ozone and PM2.5 concentrations, diesel PM emissions, drinking water contaminants, pesticide use, toxic releases from facilities, traffic density, cleanup sites, impaired water bodies, groundwater threats, hazardous waste facilities and generators, and solid waste sites and facilities)	Tract	California Office of Environmental Health Hazard Assessment CalEnviroScreen Version 2.0 http://oehha.ca.gov/ej/ces2.html
Population Living Near a Transit Stop	2012	Population weighted centroid distance to the closest fixed public transit stop	Census Block Group	US EPA Smart Location Database https://edg.epa.gov/data/Public/OP/SLD/SmartLocationDb.zip (last accessed 29 Aug 2015)
Access to Dentists	2013	Dentists, Rate per 100,000 Population	County	US Department of Health and Human Services, Health Resources and Services Administration, Areas Health Resource File http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Access to Mental Health Providers	2014	Mental Health Care Provider, Rate per 100,000 Population	County	University of Wisconsin Population Health Institute, County Health Ranking http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Access to Primary Care	2012	Primary Care Physicians, Rate per 100,000 Population	County	US Department of Health & Human Services, Health Resources and Services Administration, Area Health Resource File

				http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Alcohol – Excessive Consumption	2006 – 2012	Estimated Adults Drinking Excessively (Age-Adjusted Percentage)	County	Center for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Accessed via the Health Indicators Warehouse. U.S. Department of Health and Human Services, Health Indicators Warehouse http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Alcohol – Expenditures	2014	Alcoholic Beverage Expenditures, Percentage of Total Food-At-Home Expenditures	Tract	Nielsen, Nielsen SiteReports http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Asthma – Prevalence	2011 – 2012	Percent Adults with Asthma	County	Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Additional data analysis by CARES http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Breastfeeding (Any)	2012	Percentage of Mothers Breastfeeding (Any)	County	California Department of Public Health (CDPH) – Breastfeeding Statistics http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Cancer Incidence (Cervical)	2010 – 2012	Total Aggregated Incidence of Cervical Cancers from 2010 -2012, Rate per 100,000 Population	County	Cancer Provides, 2008-2012 http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Cancer Screening - Mammogram	2008 - 2012	Annual Cervical Cancer Incidence, Rate per 100,00 Population	County	National Institutes of Health, National Cancer Institute, Surveillance, Epidemiology, and End Results Program. State Cancer Profiles http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Cancer Screening – Pap Test	2012	Percent Adults Females Age 18+ with Regular Pap Test (Age Adjusted)	County	Dartmouth College Institute for Health Policy & Practice, Dartmouth Atlas of Health Care http://www.communitycommons.o

				rg/groups/community-health-needs-assessment-chna
Cancer Screening – Sigmoid/Colonoscopy	2006 – 2012	Percent Adults Screened for Colon Cancer (Age Adjusted)	County	Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Accessed via the Health Indicators Warehouse. US Department of Health & Human Services, Health Indicators Warehouse http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Children Eligible for Free/Reduced Price Lunch	2013 - 2014	Percent Students Eligible for Free or Reduced Price Lunch	Address	National Center for Education Statistics, NCES – Common Core of Data http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Commute to Work – Alone in Car	2009 – 2013	Percentage of Workers Commuting by Car, Alone	Tract	US Census Bureau, American Community Survey http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Commute to Work – Walking/Biking	2009-2013	Percentage Walking or Biking/Work	Tract	US Census Bureau, American Community Survey http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Diabetes Management (Hemoglobin A1c Test)	2012	Percent Medicare Enrollees with Diabetes with Annual Exam	County	Dartmouth College Institute for Health Policy & Clinical Practice, Dartmouth Atlas of Health Care http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Diabetes Prevalence	2012	Percent Adults with Diagnosed Diabetes (Age Adjusted)	County	Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Economic Security – Commute Over 60 Minutes	2009 - 2013	Percent of Workers Communities More than 60 Minutes	Tract	US Census Bureau, American Community Survey http://www.communitycommons.org/groups/community-health-needs-assessment-chna

Education – High School Graduation Rate	2013	Cohort Graduation Rate	County	California, Department of Education http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Education – Reading Below Proficiency	2012 – 2013	Percentage of Grade 4 ELA Test Score Not Proficient	County	California, Department of Education http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Education – School Enrollment Age 3-4	2009 - 2013	Percentage Population Age 3-4 Enrolled in School	Tract	US Census Bureau, American Community Survey http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Federally Qualified Health Centers	2015	Federally Qualitied Health Centers, Rate per 100,000 Population	Address	U.S. Department of Health & Human Services, Center for Medicare & Medicaid Services, Provider of Services File - Sept. 2015. http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Food Environment – Fast Food Restaurants	2011	Fast Food Restaurants, Rate per 100,000 Population	Tract	U.S. Census Bureau, County of Business Patterns. Additional data analysis by CARES http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Food Environment – Grocery Stores	2011	Grocery Stores, Rate per 100,000 Population	Tract	U.S. Census Bureau, County of Business Patterns. Additional data analysis by CARES http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Food Security – Food Insecurity Rate	2013	Percentage of the Population with Food Insecurity	County	Feeding America http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Food Security – Population Receiving SNAP	2011	Percent Population Receiving SNAP Benefits	County	U.S. Census Bureau, Small Area Income & Poverty Estimates. http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Fruit/Vegetable Expenditures	2014	Fruit / Vegetable Expenditures, Percentage of Total Food-At-Home Expenditures	Tract	Nielsen, Nielsen SiteReports http://www.communitycommons.org/groups/community-health-needs-assessment-chna

Heart Disease Prevalence	2011 – 2012	Percent Adults with Heart Disease	County (Grouping)	University of California Center for Health Policy Research, California Health Interview Survey http://www.communitycommons.org/groups/community-health-needs-assessment-chna
High Blood Pressure - Unmanaged	2006 - 2010	Percent Adults with High Blood Pressure	County	Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Additional data analysis by CARES http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Housing – Assisted Housing	2013	HUD – Assisted Units, Rate per 10,000 Housing Units (2010)	County	U.S. Department of Housing and Urban Development http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Housing – Substandard Housing	2009 – 2013	Percent Occupied Housing Units with One or More Substandard Conditions	County	U.S. Census Bureau, American Community Survey http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Insurance – Population Receiving Medicaid	2009 – 2013	Percent of Insured Population Receiving Medicaid	Tract	U.S. Census Bureau, American Community Survey http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Lack of Social or Emotional Support	2006 – 2012	Percent Adult Without Adequate Social / Emotional Support (Age-Adjusted)	County	Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Accessed via the Health Indicators Warehouse. US Department of Health & Human Services, Health Indicators Warehouse http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Liquor Store Access	2012	Liquor Stores, Rate per 100,000 Population	County	U.S. Census Bureau, County Business Patterns. Additional data analysis by CARES http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Low Fruit/Vegetable	2011 - 2012	Percent Population Age 2-13 with Inadequate Fruit/Vegetable Consumption	County (Grouping)	University of California Center for Health Policy Research, California Health Interview Survey

Consumption (Youth)				http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Mental Health – Poor Mental Health Days	2006 - 2012	Average Number of Mentally Unhealthy Days per Month	County	Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Accessed via the Health Indicators Warehouse http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Mortality – Homicide	2010 - 2012	Homicide, Age-Adjusted Mortality, Rate per 100,000 Population	ZIP Code	University of Missouri, Center for Applied Research and Environmental Systems. California Department of Public Health, CDPH - Death Public Use Data http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Mortality – Motor Vehicle Accident	2010 - 2012	Motor Vehicle Accident, Age Adjusted Mortality, Rate per 100,000 Population	ZIP Code	University of Missouri, Center for Applied Research and Environmental Systems. California Department of Public Health, CDPH - Death Public Use Data http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Mortality – Pedestrian Accident	2010 - 2012	Pedestrian Accident – Age Adjusted Mortality, Rate per 100,000 Population	ZIP Code	University of Missouri, Center for Applied Research and Environmental Systems. California Department of Public Health, CDPH - Death Public Use Data http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Obesity (Youth)	2013 - 2014	Percent Obese	County	California Department of Education, FITNESSGRAM® Physical Fitness Testing http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Overweight (Youth)	2013 - 2014	Percent Overweight	County	California Department of Education, FITNESSGRAM® Physical Fitness Testing http://www.communitycommons.org/groups/community-health-needs-assessment-chna

Physical Inactivity (Adult)	2012	Percent Population with no Leisure Time Physical Activity	County	Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Physical Inactivity (Youth)	2013 - 2014	Percent Physically Inactive	County	California Department of Education, FITNESSGRAM® Physical Fitness Testing http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Preventable Hospital Service Days	2011	Age-Adjusted Discharge, Rate per 10,000 Population	County	California Office of Statewide Health Planning and Development, OSHPD Patient Discharge Data. Additional data analysis by CARES http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Soft Drink Expenditures	2014	Soda Expenditures, Percentage of Total Food-At-Home Expenditures	Tract	Nielsen, Nielsen Site Reports http://www.communitycommons.org/groups/community-health-needs-assessment-chna
STD – HIV Hospitalizations	2011	Age-Adjusted Discharge, Rate per 10,000 Population	County	California Office of Statewide Health Planning and Development, OSHPD Patient Discharge Data. Additional data analysis by CARES http://www.communitycommons.org/groups/community-health-needs-assessment-chna
STD – HIV Prevalence	2010	Population with HIV/AIDS, Rate by 100,000 Population	County	US Department of Health & Human Services, Health Indicators Warehouse. Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention http://www.communitycommons.org/groups/community-health-needs-assessment-chna
STD – No HIV Screening	2011 - 2012	Percent Adults Never Screened for HIV/AIDS	County	Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System. Additional data analysis by CARES http://www.communitycommons.o

				rg/groups/community-health-needs-assessment-chna
Tobacco Expenditures	2014	Cigarette Expenditures, Percentage of Total Household Expenditures	Tract	Nielsen, Nielsen SiteReports http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Transit – Road Network Density	2011	Total Road Network Density (Road Miles per Acre)	County	Environmental Protection Agency, EPA Smart Location Database http://www.communitycommons.org/groups/community-health-needs-assessment-chna
Violence – School Suspensions	2013-2014	Suspension Rate	County	California Department of Education. 2013-2014 school year http://www.communitycommons.org/groups/community-health-needs-assessment-chna

General Processing Steps

Rate Smoothing

All OSHPD, as well as all single-year CDPH, variables were collected for all ZIP codes in California. The CDPH datasets included separate categories that included either patients who did not report any ZIP code, or patients from ZIP codes whose number of cases fell below a minimum level. These patients were removed from the analysis. As described above, patient records in ZIP codes not represented by ZCTAs were added to those ZIP codes corresponding to the ZCTAs that they fell inside or were closest to. When consolidating ZIP codes into ZCTAs, any ZIP code with no value reported was treated as having a value of 0. If a two or more ZIP codes were combined into a single ZCTA, and at least one of those ZIP codes had a value reported, all other ZIP codes with a masked value were treated as having values of 0. Thus ZCTA values were recorded as NA only if all ZIP codes contributing values to them had masked values reported for all associated ZIP codes.

The next step in the analysis process was to calculate rates for each of these variables. However, rather than calculating raw rates, empirical Bayes smoothed rates (EBR) were created for all variables possible.[32] Smoothed rates are considered preferable to raw rates for two main reasons. First, the small population of many ZCTAs, particularly those in rural areas, meant that the rates calculated for these areas would be unstable. This problem is sometimes referred to as the small number problem. Empirical Bayes smoothing seeks to address this issue by adjusting the calculated rate for areas with small populations so that they more closely resemble the mean rate for the entire study area. The amount of this adjustment is greater in areas with smaller populations, and less in areas with larger populations.

Because the EBR were created for all ZCTAs in the state, ZCTAs with small populations that may have unstable high rates had their rates “shrunk” to more closely match the overall variable rate for ZCTAs in the entire state. This adjustment can be substantial for ZCTAs with very small populations. The difference between raw rates and EBR in ZCTAs with very large populations, on the other hand, is negligible. In this way, the stable rates in large population ZIP codes are preserved, and the unstable rates in smaller population ZIP codes are shrunk to more closely match the state norm. While this may not entirely resolve the small number problem in all cases, it does make the comparison of the resulting rates more appropriate. Because the rate for each ZCTA is adjusted to some degree by the EBR process, it also has a secondary benefit of better preserving the privacy of patients within the ZCTAs.

EBR were calculated for each variable using the appropriate base population figure reported for ZCTAs in the American Community Survey 5-year estimate tables: overall EBR for ZCTAs were calculated using total population; and sex, age, and normalized race/ethnicity EBR were calculated using the appropriate corresponding population stratification. In cases where multiple years of data were aggregated, populations for the central year were used and multiplied by the number of years of data to calculate rates. For OSHPD data, 2012 population data was used. For multi-year CDPH variables (2010 – 2012), 2011 data was used. Population data from 2012 was used to calculate single-year CDPH variables.

ZCTAs with NA values recorded were treated as having a value of 0 when calculating the overall expected rates for a state as a whole, but were kept as NA when smoothing the value for the individual ZCTA. This meant that smoothed rates could be calculated for each variable in each area, but if a given ZCTA had a value of NA for a given variable, it retained that NA value after smoothing.

EBR were attempted for every overall variable, but could not be calculated for certain variables. In these cases, raw rates were used instead. The final rates in either case for H, ED, and the basic mortality

[32] Anselin, L. (2003). *Rate Maps and Smoothing.* Retrieved February 16, 2013, from http://www.dpi.inpe.br/gi

variables were then multiplied by 10,000, so that the final rates represent H or ED discharges, or deaths, per 10,000 people.

Age Adjustment

The additional step of age adjustment[33] was performed on the all-cause mortality variables. Because the occurrence of these conditions varies as a function of the age of the population, differences in the age structure between ZCTAs could obscure the true nature of the variation in their patterns. For example, it would not be unusual for a ZCTA with an older population to have a higher rate of ED visits for stroke than a ZCTA with a younger population. In order to accurately compare the experience of ED visits for stroke between these two populations, the age profile of the ZCTA needs to be accounted for. Age adjusting the rates allows this to occur.

To age adjust these variables, we first calculated age stratified rates by dividing the number of occurrences for each age category by the population for that category in each ZCTA. Because estimates of age under 1 and from 1 to 4 were not available in the American Community Survey datasets used in this analysis, the proportion of the population under age 5 that was also under age 1 was calculated using 2010 decennial Census data for each geographic area. These proportions were then compared to the age under 5 variables from the American Community Survey datasets for each geographic area to estimate the values for the population under 1 and from 1 to 4. These estimated values were then used to calculate age stratified rates. Age stratified EBR were used whenever possible. Each age stratified rate was then multiplied by a coefficient that gives the proportion of California's total population that was made up by that age group as reported in the 2010 Census. The resulting values are then summed and multiplied by 10,000 to create age adjusted rates per 10,000 people.

Benchmark Rates

A final step was to obtain or generate benchmark rates to compare the ZCTA level rates to. Benchmarks for all OSHPD variables were calculated at the HSA, county, and state levels. HSA rates were calculated by first summing the total number of cases and relevant populations for each variable across all ZCTAs in the HSA. ZCTAs with NA values were treated at this stage as having a value of 0. Smoothed EBR rates were then calculated for each HSA using a broader set of HSAs.

County benchmark rates were calculated as raw rates for each county, or in the case of small counties, group of counties, using the relevant population variables. State rates were calculated as raw rates by first summing all county level values (treating and NA value as a 0), and then dividing these values by the relevant population value.

HSA, county, and state benchmark rates were also provided for CDPH data. HSA benchmarks were calculated in a process similar to that described above for OSHPD HSA benchmarks: the total number of cases and relevant populations were summed for each variable across all ZCTAs in the HSA, and used to calculate smoothed EBR rates using a broader set of HSAs.

[33] Klein, R. J., & Schoenborn, C. A. (2001). *Age adjustment using the 2000 projected U.S. population. Healthy People Statistical Notes, no. 20.* Hyattsville, Maryland: National Center for Health Statistics.

County and state benchmark rates were either calculated using CDPH data reported at the county and state level[34,35], or else obtained from the County Health Status Profiles 2014.[36] The resulting benchmark values for CDPH and OSHPD variable were all reported as rates per 10,000 unless the original variable was reported using some other standard as described below.

Processing for Specific Variables

Additional processing was needed to create the Community Health Vulnerability Index (CHVI), the CDPH related variables, and as well as some of the other variables. The process used to calculate these variables are described in this section below.

Community Health Vulnerability Index (CHVI)

The CHVI is a health care disparity index largely based on the Community Need Index (CNI) developed by Dignity Health.[37] The CHVI uses the same basic set of demographic variables to address health care disparity as outlined in the CNI, but these variables are aggregated in a different manner to create the CHVI. For this report, the following nine variables were obtained from the 2013 American Community Survey 5-year Estimate dataset at the census tract level:

- Percent Minority
- Population 5 Years or Older who speak Limited English
- Percent 25 or Older Without a High School Diploma
- Percent Unemployed
- Percent Families with Children in Poverty
- Percent Households 65 years or Older in Poverty
- Percent Single Female Headed Households in Poverty
- Percent Renter Occupied Households
- Percent Uninsured

All census tracts that crossed ZCTAs within the HSA were included in the analysis. Each variable was scaled using a min-max stretch, so that the tract with the maximum value for a given variable within the study area received a value of 1, and the tract with the minimum value for that same variable within the study area received a 0. All scaled variables were then summed to form the final CHVI. Areas with higher CHV values therefore represent locations with higher concentrations of the target index populations, and are likely experiencing poorer health care disparities.

Infant Mortality Rate

Infant mortality rate reports the number of infant deaths per 1,000 live births. It was calculated by dividing the number of deaths for those with ages below 1 from 2010 - 2012 by the total number of live births for the same time period (using smoothed EBR), and multiplying the result by 1,000.

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[34] California Department of Public Health. (2010,2011,2012). *Ten Leading Causes of Death, California Counties and Selected City Health Departments*. Retrieved July 7, 2015, from http://www.cdph.ca.gov/data/statistics/Documents/VSC-2012-0520.pdf; http://www.cdph.ca.gov/data/statistics/Documents/VSC-2011-0520.pdf; http://www.cdph.ca.gov/data/statistics/Documents/VSC-2010-0520.pdf

[35] California Department of Public Health. (2015a, July 17). Retrieved from Center for Health Statistics and Informatics: Vital Statistics Query System.: http://www.apps.cdph.ca.gov/vsq/

[36] California Department of Public Health. (2015b, July 2). Retrieved from County Health Status Profiles 2014: http://www.cdph.ca.gov/programs/ohir/Documents/OHIRProfiles2014.pd

[37] Barsi, E. L., & Roth, R. (2005). The "Community Need Index". *Health Progress, 86*(4), 32-38. Retrieved from https://www.chausa.org/docs/default-source/health-progress/the-community-need-index-pdf.pdf?sfvrsn=2

Teen Pregnancy Rate

Teen Pregnancy Rate reports the number of live births to mothers under the age of 20 per 1,000 females between the ages of 15 and 19. It was calculated by dividing the number of live births to mothers whose age at delivery was under 20 reported in 2010 – 2012 by three times the total population of females from ages 15 to 19 in 2011 (using smoothed EBR), and multiplying the result by 1,000.

Life Expectancy at Birth

Life expectancy at birth values are reported in years, and were derived from period life tables created in the statistical software program R[38] using the Human Ecology, Evolution, and Health Lab's[39] example period life table function. This function was modified to calculate life tables for each ZCTA, and to allow the life table to be calculated from submitted age stratified mortality rates. The age stratified mortality rates were calculated for each ZIP code by dividing the total number of deaths in a given age category from 2010 - 2012 by three times the ZCTA population for that age group in 2010 (smoothed to EBR). The age group population was multiplied by three to match the three years of mortality data that were used to derive the rates. Multiple years were used to increase the stability of the estimates.

Years Potential Life Lost (75)

Years Potential Life Lost (75) is a metric that can be used to compare health status across populations that better accounts for premature loss of life than many other metrics[40]. It was calculated here following the method described by Dranger and Remington[9]. In brief, this involved calculating EBR smoothed age stratified death rates using CDPH data from 2010 – 2011. For each age stratification group under 75 years of age, the midpoint age of the group was subtracted from 75, and the resulting value was multiplied by the smoothed age stratified rate. The resulting values for each age stratification were then age adjusted using a 2010 California base population. These values were then individually multiplied by 10,000 and summed across all age groups to estimate the years of potential life lost before 75 out of 10,000 people.

Diversity Index

The diversity index was calculated to measure the racial and ethnic diversity of geographic regions within the HSA. It was calculated using concepts from Iceland[41], but using the Shannon's evenness index (Beals, Gross, & Harrell, 2000) rather than the specific methodology described therein. The diversity index represents how evenly population within a given geographic unit is divided between the following seven racial/ethnic groups (described previously): Asian, Black, Hispanic, American Indian, Pacific Islander, White, Other or Two or More Races. Diversity index values range between 0 and 1, with a value of 0 in areas where the entire population belongs to just one racial/ethnic group and a value of 1 in areas with population evenly divided between the seven groups. Readers interested in the specifics of index calculation are referred to the previously listed sources.

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[38] R Development Core Team. (2015). R: A language and environment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0, URL http://www.R-project.org.

[39] Human Ecology, Evolution, and Health Lab. (2009, March 2). *Life tables and R programming: Period Life Table Construction*. Retrieved February 16, 2013, from Formal Demography Workshops, 2006 Workshop Labs: http://www.stanford.edu/group/heeh/cgi-bin/web/node/75

[40] Dranger, E., & Remington, P. (2004). YPPL: A Summary Measure of Premature Mortality Used in Measuring the Health of Communities. *Wisconsin Public Health & Health Policy Institute Issue Brief, 5*(7), 1-2. Retrieved May 27, 2015, from http://uwphi.pophealth.wisc.edu/publications/issue-briefs/issueBriefv05n07.pdf

[41] Iceland, J. (2004). *The Multigroup Entropy Index (Also Known as Theil's H or the Information Theory Index).* US Census Bureau. Retrieved June 20, 2015, from http://www.census.gov/housing/patterns/about/multigroup_entropy.pdf

Major Crime and Domestic Violence Rates

Major crimes and domestic violence related calls for assistance reported in the State of California Department of Justices' Crime Data reports are listed by reporting police agency. In order to estimate major crime and domestic violence rates, these values need to be associated with particular geographic areas, and then divided by those area populations. This was done for this report by comparing the names of police agencies to populations reported for "places" (including both incorporated and unincorporated areas) by the US Census. Both crime and population data were obtained for 2013.

Many reporting agencies, such as those associated with hospitals, transit and freight rail lines, university campuses, and state and federal agencies, did not correspond to a specific census place. Internet searches were used to identify the Census places they were associated with, and their cases were added to those places. For example, the crimes or calls for assistance reported by a University police department were added to the city or county that the university campus was located in. For areas where this was unclear based on the name alone, internet searches were conducted to determine the place an agency fell inside of. Because reported crimes or calls for agencies were organized by county, if the crimes for an agency could not be associated with any specific place, its reported crimes were grouped together with those for the county sheriff's department.

To calculate rates, the total number of crimes or calls for assistance for each Census place resulting from the process described above was divided by the population of that place and multiplied by 10,000 to report the number of crimes per 10,000 in that place. For crimes reported for (or grouped with) the county sheriff's department, the county population was modified by subtracting the total population of all Census places with reported crimes. This meant that the major crime rate reported for the county was reporting not the total county's crime rate, but the rate of crimes occurring in those portions of the county that were not otherwise covered by another reporting agency.

Overall county major crime rates and domestic violence related calls for assistance were, however, calculated for benchmarking purposes by summing the total number of major crimes reported by any agency within the county, dividing that by the total population of the county, and multiplying the result by 10,000. For further detail as to which specific crimes are covered within the "major crime" category, interested readers are referred to the State of California Department of Justices' Crime Data reports, available online at: http://oag.ca.gov/crime.

Park Access

The park access variable reports the percent of the 2010 population residing within each ZCTA that lives in a Census block that intersects a ½ mile buffer around the closest park. ESRI's U.S. Parks data set[42], which includes the location of local, county, regional, state, and national parks and forests, was used to determine park locations.

Modified Retail Food Environment Index (mRFEI)

The Modified Retail Food Environment Index (mRFEI) variable reports the percentage of the total food outlets in a ZCTA that are considered healthy food outlets. Values below 0 are given for ZCTAs with no food outlets. The mRFEI variable was calculated using a modification of the methods described by the National Center for Chronic Disease Prevention and Health Promotion[43] using ZIP code level data obtained from the US Census Bureau's 2013 County Business Pattern datasets. Healthy food retailers were defined based on North American Industrial Classification Codes (NAICS), and included:

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[42] ESRI. (2010). U.S. and Canada Detailed Streets. *ESRI Data & Maps: StreetMap* (10 edition)

[43] National Center for Chronic Disease Prevention and Health Promotion. (2011). *Census Tract Level State Maps of the Modified Retail Food Environment Index (mRFEI).* Centers for Disease Control. Retrieved Jan 11, 2016, from http://ftp.cdc.gov/pub/Publications/dnpao/census-tract-level-state-maps-mrfei_TAG508.pdf

- Large grocery stores: NAICS code 445110, with 50 or more employees
- Fruit and vegetable markets: NAICS 445230
- Warehouse clubs: NAICS 452910

Food retailers that were considered less healthy included:

- Small grocery stores: NAICS code 445110, with 1 – 4 employees
- Limited-service restaurants: 722513
- Convenience stores: 445120

To calculate the mRFEI, ZIP code values were converted to ZCTAs using previously described processes. The total number of health food retailers was then divided by the total number of healthy and less healthy food retailers for each ZCTA, and the result was multiplied by 100 to calculate the final mRFEI value for the ZCTA. HSA mRFEI benchmark values were calculated by first summing the total number of each type of food retailer that fell within the HSA, and then by following the same approach.

Appendix B: Detailed Analytic Methodology including SHN Categorization

Significant Health Need Identification Process

The Significant Health Need identification process began with a review of significant health needs identified in the Community Health Need Assessment reports conducted by Valley Vision, Inc. during the 2013 CHNA round. This list of significant health needs was compared to preliminary secondary data, health needs associated with the Kaiser Permanente (KP) Community Commons Data Platform, and input from health systems participating in the Sacramento Region 2016 collaborative CHNA process. This culminated in the final set of eight potential health needs for the 2016 CHNA shown in Table 38 below.

Table 38: Potential Health Needs

Table 38: Overview of Potential Health Need (PHN) Categories	
Potential Health Need Category	**Abbreviation**
Access to High Quality Health Care and Services *(i.e., Access to Care, Oral Health, Maternal and Infant Health)*	Access to Care
Access to Behavioral Health Services *(i.e., Mental Health, Substance Abuse)*	Behavioral Health
Affordable and Accessible Transportation	Transportation
Basic Needs *(i.e., Food, Housing, Employment, Education)*	Basic Needs
Disease Prevention, Management and Treatment *(i.e., Cancer, Asthma, CVD/Stroke, HIV/AIDS/STIs)*	Disease Prevention
Active Living and Healthy Eating	ALHE
Pollution Free Living and Work Environments	Pollutant Free
Safe, Crime and Violence-Free Communities	Safe Communities

The next step in the significant health need identification process was to identify those secondary indicators associated with each of these significant health needs. Values for these indicators were then calculated for each hospital service area, and then compared to relevant state benchmarks. The percentage of indicators comparing poorly to state benchmarks for each health need was then calculated. Table 39 below shows the indicator/health need cross walk table, which variables were collected directly by Valley Vision (VV) and which were obtained through the Kaiser Permanente Community Commons Data Platform (CCDP). It finally gives a general description of the type of value calculated for the HSA for each variable, as well as the direction of comparison to the state benchmark.

Table 39: Indicators, Health Needs, and Benchmarks

Name	ALHE	MH _SA	ACT	BASIC NEEDS	POLL UT	VIOL	TRAN SIT	DIS PREV	HSA Value	Benchmark Comparison	Source
Breastfeeding (Any)	Yes		Yes						County Rate	Below State Benchmark	CCDP
Soft Drink Expenditures	Yes		Yes						Calculated HSA Rate	Exceeds State Benchmark	CCDP
Economic Security - Commute Over 60 Minutes	Yes			Yes			Yes		Kaiser Rate	Exceeds State Benchmark	CCDP
Physical Inactivity (Adult)	Yes				Yes	Yes		Yes	Maximum Rate for Associated County	Exceeds State Benchmark	CCDP
Physical Inactivity (Youth)	Yes				Yes	Yes		Yes	Maximum Rate for Associated County	Exceeds State Benchmark	CCDP
Obesity (Youth)	Yes				Yes			Yes	Maximum Rate for Associated County	Exceeds State Benchmark	CCDP
Heart Disease (ED)	Yes				Yes			Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Heart Disease (H)	Yes				Yes			Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Commute to Work - Walking/Biking	Yes						Yes		Calculated HSA Rate	Below State Benchmark	CCDP
Diabetes Management (Hemoglobin A1c Test)	Yes							Yes	Calculated HSA Rate	Below State Benchmark	CCDP
Diabetes Prevalence	Yes							Yes	County Rate	Exceeds State Benchmark	CCDP
Fruit/Vegetable Expenditures	Yes							Yes	Calculated HSA Rate	Below State Benchmark	CCDP
Overweight (Youth)	Yes							Yes	Maximum Rate for Associated County	Exceeds State Benchmark	CCDP
Colorectal Cancer (ED)	Yes							Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Colorectal Cancer (H)	Yes							Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Colorectal Cancer (Incidence)	Yes							Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Diabetes (ED)	Yes							Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Diabetes (H)	Yes							Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Food Deserts	Yes							Yes	HSA Intersects Food Desert	Exceeds 25% of ZCTAs	VV

Name	ALHE	MH _SA	ACT	BASIC NEEDS	POLL UT	VIOL	TRAN SIT	DIS PREV	HSA Value	Benchmark Comparison	Source
Hypertension (ED)	Yes							Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Hypertension (H)	Yes							Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Park Access	Yes							Yes	Calculated HSA Rate	Below State Benchmark	VV
Food Environment - Fast Food Restaurants	Yes								Calculated HSA Rate	Exceeds State Benchmark	CCDP
Food Environment - Grocery Stores	Yes								Calculated HSA Rate	Below State Benchmark	CCDP
Low Fruit/Vegetable Consumption (Youth)	Yes								Maximum Rate for Associated County	Exceeds State Benchmark	CCDP
Diabetes Mellitus – MORT	Yes								Calculated HSA Rate	Exceeds State Benchmark	VV
Modified Retail Food Environment Index (MRFEI)	Yes								Calculated HSA Rate	Below State Benchmark	VV
Osteoporosis (ED)	Yes								Calculated HSA Rate	Exceeds State Benchmark	VV
Osteoporosis (H)	Yes								Calculated HSA Rate	Exceeds State Benchmark	VV
Life Expectancy at Birth		Yes		Yes					Calculated HSA Rate	Below State Benchmark	VV
Tobacco Expenditures		Yes			Yes			Yes	Calculated HSA Rate	Exceeds State Benchmark	CCDP
Tobacco Usage (Adults and Teens)		Yes			Yes			Yes	Maximum Rate for Associated County	Exceeds State Benchmark	VV
Chronic Lower Respiratory Disease - MORT		Yes			Yes				Calculated HSA Rate	Exceeds State Benchmark	VV
COPD (ED)		Yes			Yes				Calculated HSA Rate	Exceeds State Benchmark	VV
COPD (H)		Yes			Yes				Calculated HSA Rate	Exceeds State Benchmark	VV
Alcohol - Excessive Consumption		Yes				Yes		Yes	County Rate	Exceeds State Benchmark	CCDP
Alcohol - Expenditures		Yes				Yes		Yes	Calculated HSA Rate	Exceeds State Benchmark	CCDP
Liquor Store Access		Yes				Yes		Yes	Maximum Rate for Associated County	Exceeds State Benchmark	CCDP
Substance Abuse (ED)		Yes				Yes			Calculated HSA Rate	Exceeds State Benchmark	VV
Substance Abuse (H)		Yes				Yes			Calculated HSA Rate	Exceeds State Benchmark	VV

Name	ALHE	MH _SA	ACT	BASIC NEEDS	POLL UT	VIOL	TRAN SIT	DIS PREV	HSA Value	Benchmark Comparison	Source
Lung Cancer (ED)		Yes						Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Lung Cancer (Incidence)		Yes						Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Access to Mental Health Providers		Yes							County Rate	Below State Benchmark	CCDP
Lack of Social or Emotional Support		Yes							County Rate	Exceeds State Benchmark	CCDP
Mental Health - Poor Mental Health Days		Yes							County Rate	Exceeds State Benchmark	CCDP
Alzheimer's Disease		Yes							Calculated HSA Rate	Exceeds State Benchmark	VV
Chronic Liver Disease and Cirrhosis – MORT		Yes							Calculated HSA Rate	Exceeds State Benchmark	VV
Health Professional Shortage Area - Mental Health		Yes							HSA Intersects Mental Health Shortage Area	Intersects HPSA	VV
Intentional Self Harm (Suicide) - MORT		Yes							Calculated HSA Rate	Exceeds State Benchmark	VV
Mental Health (ED)		Yes							Calculated HSA Rate	Exceeds State Benchmark	VV
Mental Health (H)		Yes							Calculated HSA Rate	Exceeds State Benchmark	VV
Self-Inflicted Injuries (ED)		Yes							Calculated HSA Rate	Exceeds State Benchmark	VV
Self-Inflicted Injuries (H)		Yes							Calculated HSA Rate	Exceeds State Benchmark	VV
Education - School Enrollment Age 3-4			Yes	Yes					Calculated HSA Rate	Below State Benchmark	CCDP
Insurance - Population Receiving Medicaid			Yes	Yes					Calculated HSA Rate	Exceeds State Benchmark	CCDP
Population with Public Insurance			Yes	Yes					Calculated HSA Rate	Exceeds State Benchmark	VV
Uninsured Population			Yes	Yes					Calculated HSA Rate	Exceeds State Benchmark	VV
Low Birth Weight			Yes		Yes				Calculated HSA Rate	Exceeds State Benchmark	VV
Cancer Screening - Mammogram			Yes					Yes	County Rate	Below State Benchmark	CCDP
Cancer Screening - Pap Test			Yes					Yes	County Rate	Below State Benchmark	CCDP

Name	ALHE	MH _SA	ACT	BASIC NEEDS	POLL UT	VIOL	TRAN SIT	DIS PREV	HSA Value	Benchmark Comparison	Source
Cancer Screening - Sigmoid/Colonoscopy			Yes					Yes	County Rate	Below State Benchmark	CCDP
Access to Dentists			Yes						County Rate	Below State Benchmark	CCDP
Access to Primary Care			Yes						County Rate	Below State Benchmark	CCDP
Federally Qualified Health Centers			Yes						HSA Calculated Rate	Below State Benchmark	CCDP
Preventable Hospital Events			Yes						County Rate	Exceeds State Benchmark	CCDP
Dental/Oral Diseases (ED)			Yes						Calculated HSA Rate	Exceeds State Benchmark	VV
Dental/Oral Diseases (H)			Yes						Calculated HSA Rate	Exceeds State Benchmark	VV
Health Professional Shortage Area - Dental			Yes						HSA Intersects Dental Shortage Area	Intersects HPSA	VV
Health Professional Shortage Area - Primary Care			Yes						HSA Intersects Primary Care Shortage Area	Intersects HPSA	VV
Infant Mortality Rate			Yes						Calculated HSA Rate	Exceeds State Benchmark	VV
Prenatal Care			Yes						Calculated HSA Rate	Below State Benchmark	VV
Teen Births			Yes						Calculated HSA Rate	Exceeds State Benchmark	VV
Households with No Vehicle				Yes			Yes		Calculated HSA Rate	Exceeds State Benchmark	VV
Children Eligible for Free/Reduced Price Lunch				Yes					Calculated HSA Rate	Exceeds State Benchmark	CCDP
Education – High School Graduation Rate				Yes					County Rate	Below State Benchmark	CCDP
Education - Reading Below Proficiency				Yes					County Rate	Exceeds State Benchmark	CCDP
Food Security - Food Insecurity Rate				Yes					County Rate	Exceeds State Benchmark	CCDP
Food Security - Population Receiving SNAP				Yes					County Rate	Exceeds State Benchmark	CCDP

Name	ALHE	MH _SA	ACT	BASIC NEEDS	POLL UT	VIOL	TRAN SIT	DIS PREV	HSA Value	Benchmark Comparison	Source
Housing - Assisted Housing--HUD units				Yes					County Rate	Exceeds State Benchmark	CCDP
Housing - Substandard Housing				Yes					County Rate	Exceeds State Benchmark	CCDP
Violence - School Suspensions				Yes					County Rate	Exceeds State Benchmark	CCDP
Households with housing costs greater than 30% of income				Yes					Calculated HSA Rate	Exceeds State Benchmark	VV
Housing Vacancy Rate				Yes					Calculated HSA Rate	Exceeds State Benchmark	VV
Percent Population 25 or Older Without a High School Diploma				Yes					Calculated HSA Rate	Exceeds State Benchmark	VV
Percent Unemployed				Yes					Calculated HSA Rate	Exceeds State Benchmark	VV
Population 5 Years or Older who speak Limited English				Yes					Calculated HSA Rate	Exceeds State Benchmark	VV
Population in Poverty (Under 100% Federal Poverty Level)				Yes					Calculated HSA Rate	Exceeds State Benchmark	VV
Population Living Near a Transit Stop					Yes		Yes		Percent of HSA ZCTAs that intersect census blocks with centroids greater than abt. 1/2 mile from public transit stops	Exceeds 25% of ZCTAs	VV
Asthma - Prevalence					Yes			Yes	County Rate	Exceeds State Benchmark	CCDP
Asthma (ED)					Yes			Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Asthma (H)					Yes			Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Malignant Neoplasms (Cancer) - MORT					Yes			Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Pollution Burden Score					Yes			Yes	Percent of HSA ZCTAs that	Exceeds 25% of ZCTAs	VV

Name	ALHE	MH _SA	ACT	BASIC NEEDS	POLL UT	VIOL	TRAN SIT	DIS PREV	HSA Value	Benchmark Comparison	Source
									intersect census tract within the top 20% of pollution burden scores in the state		
Transit - Road Network Density					Yes				County Rate	Exceeds State Benchmark	CCDP
Mortality - Homicide						Yes			Calculated HSA Rate	Exceeds State Benchmark	CCDP
Mortality - Motor Vehicle Accident						Yes			Calculated HSA Rate	Exceeds State Benchmark	CCDP
Mortality - Pedestrian Accident						Yes			Calculated HSA Rate	Exceeds State Benchmark	CCDP
Assault (ED)						Yes			Calculated HSA Rate	Exceeds State Benchmark	VV
Assault (H)						Yes			Calculated HSA Rate	Exceeds State Benchmark	VV
Domestic violence/intimate partner violence						Yes			Maximum Rate for Associated Agencies	Exceeds State Benchmark	VV
Major Crimes (Violent Crimes, Property Crimes, Larceny/Theft, Arson)						Yes			Maximum Rate for Associated Agencies	Exceeds State Benchmark	VV
Unintentional Injury (ED)						Yes			Calculated HSA Rate	Exceeds State Benchmark	VV
Unintentional Injury (H)						Yes			Calculated HSA Rate	Exceeds State Benchmark	VV
Commute to Work - Alone in Car							Yes		Calculated HSA Rate	Exceeds State Benchmark	CCDP
Population with Any Disability							Yes		Calculated HSA Rate	Exceeds State Benchmark	VV
Cancer Incidence - Cervical								Yes	County Rate	Exceeds State Benchmark	CCDP
Heart Disease Prevalence								Yes	County Rate	Exceeds State Benchmark	CCDP
High Blood Pressure - Unmanaged								Yes	County Rate	Exceeds State Benchmark	CCDP
STD - HIV Hospitalizations								Yes	County Rate	Exceeds State Benchmark	CCDP
STD - HIV Prevalence								Yes	County Rate	Exceeds State Benchmark	CCDP

Name	ALHE	MH _SA	ACT	BASIC NEEDS	POLL UT	VIOL	TRAN SIT	DIS PREV	HSA Value	Benchmark Comparison	Source
STD - No HIV Screening								Yes	County Rate	Exceeds State Benchmark	CCDP
Breast Cancer (ED)								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Breast Cancer (H)								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Breast Cancer (Incidence)								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Cerebrovascular Disease (Stroke) - MORT								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Chlamydia – Incidence								Yes	Maximum Rate for Associated County	Exceeds State Benchmark	VV
Essential Hypertension & Hypertensive Renal Disease – MORT								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Gonorrhea – Incidence								Yes	Maximum Rate for Associated County	Exceeds State Benchmark	VV
Heart Disease - MORT								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
HIV/AIDS (ED)								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Lung Cancer (H)								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Prostate Cancer (ED)								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Prostate Cancer (H)								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Prostate Cancer (Incidence)								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
STIs (ED)								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
STIs (H)								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Stroke (ED)								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Stroke (H)								Yes	Calculated HSA Rate	Exceeds State Benchmark	VV

The qualitative indicators associated with each potential health need category were identified in a crosswalk table. The transcripts from the key informant and community focus group interviews were coded to the qualitative indicators or themes in order to get a better understanding of the specific health issues within the communities that were interviewed. A full list of the qualitative indicators with each potential health need category is displayed below in Table 40.

Table 40: Qualitative Indicators Associated with Potential Health Needs

Potential Health Need Category	Qualitative Indicators
Access to High Quality Health Care and Services	● Continuity of care/coordinated care ● Cost of care/prescription cost/copays ● Culturally sensitive care ● Delayed care ● Dental/oral health ● Distance/transport to care ● ER overwhelm/ overutilization ● Health care for the undocumented ● Health education/ health literacy ● Insurance restrictions/ coverage gaps ● Language barriers ● Long wait times/limited providers/impacted system ● Maternal infant health ● Medi-Cal access ● Pain management ● Patient navigation/referral ● Prevention services/preventative care ● Primary care ● Senior care services ● Specialty care
Access to Behavioral Health Services	<u>Mental Health</u> ● Comorbidity ● Depression-anxiety ● Desire for alternative treatment ● Elderly-Alzheimer's-dementia ● ER/ Hospital ● Homelessness ● Limited services-lack of capacity ● Mental health/substance abuse ● Need for culturally sensitive care ● Serious mental Illness ● Stigma/discrimination ● Stress ● Suicide ● Trauma and/or ACEs <u>Substance Abuse</u> ● Alcohol and other drugs ● Barriers to accessing services ● Co-morbidity ● Criminalization of drugs ● Geographic-safety concerns ● Homelessness ● Limited resources/capacity ● Methamphetamines-cocaine

	● Mental health/substance abuse ● Opiates ● Outreach and education ● Parental and pre-natal use ● Transition aged youth ● Tobacco-E cigs
Affordable and Accessible Transportation	● Lack of transport as a barrier to access health care services ● Lack of transport as a barrier to access healthy foods ● Long distance and difficulty accessing health care services ● No active transport infrastructure ● Personal transportation barriers ● Public transportation barriers
Basic Needs	<u>Housing</u> ● Gentrification/displacement ● Housing discrimination ● Homelessness/shelter crisis ● Lack of affordable housing ● Role of public housing agencies ● Seniors/aging in place ● Substandard housing <u>Food Security</u> ● Cost of living/poverty ● Food banks, pantries, closets ● Lack of quantity and quality of school food ● Safety net programs (CalFresh, WIC, Meals on Wheels) ● Transportation barriers <u>Economic Security</u> ● Loss of safety net benefits ● Need for job training resources ● Safety net benefits (TANF, CalFresh, WIC) ● Stigma/shame of poverty ● Unemployment/lack of jobs <u>Education</u> ● Differences in K-12 opportunity ● Educational attainment (dropouts, GED, higher Ed) ● Financial education and literacy ● Health education and literacy ● High cost of education ● Need for cultural sensitivity ● School discipline issues
Disease Prevention, Management and Treatment	<u>Asthma</u> ● Air pollution/contamination ● Anti-smoking laws and regulations ● Cost of asthma medications ● Environmental triggers (dust, mites, cockroaches, mold) ● Secondhand smoke (cigarettes/marijuana) ● Smoke shops <u>Cancer</u>

	● Air pollution exposure ● Breast cancer ● Cancer screening programs ● Cervical cancer ● Colorectal cancer ● Early detection ● Lack of healthy eating and active living opportunities ● Lung cancer ● Oncology/oncologists ● Pesticide exposure ● Prevention and education ● Prostate cancer ● Stomach cancer <u>CVD/Stroke</u> ● Congestive heart failure (CHF) ● Cost of medication ● CVD/Stroke ● Diagnosis, management, and treatment ● Lack of healthy eating and active living opportunities ● Hypertension ● Stroke <u>HIV/AIDS/STDs</u> ● Diagnosis, management, and treatment of STIs ● Incidence/prevalence ● Lack of continuity between health systems and public health ● Need for reproductive health education ● Stigma/discrimination ● Vulnerable populations
Active Living and Healthy Eating	● Biking ● CalFresh (EBT) and WIC ● Community gardens ● Cost barriers ● Cost of healthy food ● Cultural barriers ● Need for education and classes ● Farmers markets ● Food access issues ● Food deserts ● Food distribution ● Gyms ● Lack of motivation ● Lack of sidewalks or bike lanes ● Lack of time ● Lack of transportation ● Natural environment (trails and rivers) ● Perishability of fresh foods ● Public parks/pools ● Recreation opportunities

	● Safety ● School physical activity ● Technology and screen time ● Unhealthy food options ● Walking and walkability
Pollution-Free Living and Work Environments	● Air quality ● Environmental hazards/toxins (cockroaches, mold, mildew, asbestos) ● Respiratory conditions (asthma, COPD, infections, allergies) ● Second hand smoke (tobacco and marijuana) ● Transportation
Safe, Crime and Violence-Free Communities	● Alcohol abuse ● Bullying ● Child abuse and trauma ● Child Protective Services ● Domestic Violence ● Drug dealing ● Gang violence ● Gun and knife violence ● Hate crimes ● Homicide ● Human Trafficking ● Motor vehicle accidents ● Pedestrian accidents ● Prostitution ● Rape and sexual assault ● Substance Use ● Tension with police ● Theft

Appendix C: Informed Consent

Informed Consent

Gathering Information for a Community Health Assessment

Purpose:
You have been invited to participate in a community health assessment. This assessment will help to inform area leaders on the specific needs of the communities which they serve. We will focus our questions on two main topics: 1) the health status of the community at large, and 2) the factors that help or prevent community members from living a healthy life. The information we gather from you will be combined with that of other interviews and focus groups. We will summarize these findings and report these to local leaders in your area.

Procedures:
The interview will capture your own experiences and opinions about community health issues. Completion of the questionnaire and the interview will take about 1 hour. We will also record and later transcribe the session. All identifying information will be removed from the transcripts and at the end of the project the recording will be destroyed.

Potential Risks or Benefits:
Some of the interview questions may be emotionally charged; otherwise there are no risks that we are aware of to answering the questions presented. There are no direct benefits to participating in this interview.

Participant's Rights:
Both completion of a short questionnaire and participation in this interview are completely voluntary; you may choose to not participate and terminate your involvement at any time.

Confidentiality and Anonymity:
Should you choose to participate, you will receive a copy of this consent form. The information you provide and anything you share with us will be kept in the strictest confidence. We will list your organization and or job title in the final report and may use quotes from the transcript of your interview; however, these *will not* be associated with your name directly. These forms and any information you provide will be kept in a secure location and there will be no link between the information we collect and this document.

How to obtain Additional Information:
If you have any questions or comments regarding this document, interview or final report please contact: **Anna Rosenbaum,** Health Equity Manager at **Valley Vision (**www.valleyvision.org) 916-325-1630.

I hereby agree to participate in this interview, understand that I will be provided a copy of this consent form for my own records, and acknowledge that my responses will be recorded.

_____	_____
Participant Name (Print)	Interviewer Name (Print)
_____	_____
Participant Signature Date	Interviewer Signature Date

Informed Consent

Gathering Information for a Community Health Assessment

Purpose:
You have been invited to participate in a focus group for a community health needs assessment. This assessment will help to inform area leaders on the specific needs of the communities which they serve. We will focus our questions on two main topics: 1) the general health of the community, and 2) the factors that help or prevent community members from living a healthy life. The information we gather from you will be combined with that of other interviews and focus groups. We will summarize these findings and report these to local leaders in your area.

Procedures:
The focus group will capture your own experiences and opinions about community health issues. Completion of the questionnaire and the focus group will take about 90 minutes. We will also record and later transcribe the session. All identifying information will be removed from the transcripts and at the end of the project the recording will be destroyed.

Potential Risks or Benefits:
Some of the focus group questions may be emotionally charged otherwise there are no risks that we are aware of to answering the questions presented. Benefits include contributing to an important health assessment, along with compensation outlined below.

Participant's Rights:
Both completion of a short questionnaire and participation in this focus group are completely voluntary; you may choose to not participate and terminate your involvement at any time.

Compensation:
For your participation in the focus group you will be given a $10 gift card to a local retail outlet. Gifts cards will be distributed after completion of the focus group. If you are not able to complete the focus group you will not receive a gift card.

Confidentiality and Anonymity:
Should you choose to participate, you will receive a copy of this consent form. The information you provide and anything you share with us will be kept in the strictest confidence. We may use quotes from the focus group transcript; however they will not be associated with your name directly. These forms and any information you provide will be in a secure location and there will be no link between the information we collect and this document.

How to obtain Additional Information:
If you have any questions or comments regarding this document, the questionnaire, focus group, or final report please contact: **Anna Rosenbaum,** Data Manager at **Valley Vision** (www.valleyvision.org)
916-325-1630 (office).

I hereby agree to participate in this focus group, understand that I will be provided a copy of this consent form for my own records, and acknowledge that my responses will be recorded.

_____	_____
Participant Name Print	Interviewer Name Print
_____	_____
Participant Signature Date	Interviewer Signature Date

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Consentimiento Informado

Acumulando Información para conducir una Evaluación de las Necesidades de Salud de la Comunidad

Objetivo:
Usted ha sido invitado a participar en un grupo de enfoque para la evaluación de las necesidades de la salud de la comunidad. Esta evaluación le ayudará a informar a los líderes de la zona en las necesidades específicas de las comunidades a las que sirven. Nuestras preguntas se concentraran en dos temas principales: 1) la salud general de la comunidad, y 2) los factores que ayudan o que impiden a los miembros de la comunidad vivir una vida saludable. La información que juntamos de usted será combinada con los resultados de otras entrevistas y grupos de enfoque. Vamos a resumir estas conclusiones y reportar éstos resultados a los líderes de su área.

Procedimientos:
El grupo de enfoque captura tus propias experiencias y opiniones sobre temas de la salud de la comunidad Realización de un cuestionario y el grupo de enfoque tomara aproximada mente un hora y media (1 ½). Nos gustaría grabar la sesión y luego transcribir la. Toda la información de identificación será borrada de las transcripciones y al final del proyecto, la grabación será destruida.

Riesgos Potenciales o Beneficios:
Algunas preguntas pueden ser emocionalmente cargadas, a lo contrario, no hay ningún riesgo que estemos consciente al contestar las preguntas presentadas. Los beneficios por su participación en este grupo de enfoque incluye la oportunidad de participar en una evaluación importante y una tarjeta de regalo de 10 dólares (más detalles abajo).

Los Derechos del Participante:
La participación en este grupo de enfoque y en el cuestionario es completamente voluntaria, usted puede decidir a no participar y puede terminar su participación en cualquier momento que usted desea.

Compensación
Recibirá una tarjeta de regalo de $10 para una tienda local por participar en el grupo de enfoque. Después de completar el grupo de enfoque, le daremos la tarjeta de regalo. Si no eres capaz de completar el grupo de enfoque no recibirá tarjeta de regalo.

Confidencialidad y Anonimato
Si usted decide participar, usted recibirá una copia de esta forma de consentimiento. La información que usted nos dará será mantenida con la confidencialidad más estricta. Usted no será identificado en ninguna manera, su nombre no aparecerá en ningún documento y sólo el investigador tendrá el acceso a estos documentos. Estas formas y cualquier información coleccionada serán guardadas en una ubicación segura y no habrá ningún enlace entre la información que coleccionamos y este documento.

Como obtener más Información:
Si tienes preguntas en par de esta forma, el cuestionario, el grupo de enfoque o el reporte final, póngase en contacto con **Giovanna Forno,** de **Valley Vision** (www.valleyvision.org) 916-325-1630 (oficina).

Por este medio consiento en participar en el grupo de enfoque y reconozco que mis repuestas serán grabadas. También entiendo que me van a dar una copia de esta forma de consentimiento para mis propios archivos.

Nombre del Participante	Nombre del Entrevistador
Firma del Participante Fecha	Firma del Entrevistador Fecha

Appendix D: Key Informant and Focus Group Interview Documents

Key Informant Questionnaire

Please complete this short questionnaire, which will give us more information about your professional experience, role and expertise working with special populations. Your answers to these questions will be combined with that of other key informants and cannot be used to identify you individually.

1. What sector do you work in? (Choose only one)

- ☐ Academic/Research
- ☐ Community Based Organization
- ☐ Health Care - Department/Division: _____
- ☐ Public Health - Department/Division: _____
- ☐ Social Services - Department/Division: _____
- ☐ Other (define): _____

2. What is your primary job classification? (Choose all that apply)

- ☐ Administrative or clerical personnel
- ☐ Community Health Worker/Promotora
- ☐ Community Organizer/Advocate
- ☐ Epidemiologist
- ☐ Environmental health worker
- ☐ Health Educator
- ☐ Medical Assistant
- ☐ Nurse
- ☐ Nutritionist
- ☐ Patient Navigator
- ☐ Physician
- ☐ Program Manager/Coordinator
- ☐ Senior Leadership/Upper Management
- ☐ Social Worker/Case Manager
- ☐ Other (define): _____

3. How would you define the geographic area served by your organization?

_____

_____

4. Do you work with any of the following vulnerable populations? (Choose all that apply)

- ☐ Low-Income
- ☐ Medically underserved
- ☐ Racial or ethnic minority (specify): _____
- ☐ Other (specify): _____
- ☐ Other (specify): _____

Thank you for your participation!

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Self-Report Demographic Data Card
Gathering Information for a Community Health Assessment

Please share…
Tell us a little about you….

This questionnaire helps us to gain more information about our community participants. Your answers to the following questions will be confidential and anonymous and cannot be used to identify you personally. Please note completion of this questionnaire is completely voluntary.

For each of the following, please choose ONE that describes you best:

1. **What is your gender identity (example: male, female, transman, transwoman, please specify)?**

   _____

2. **What is your ethnicity?**

   ☐Hispanic/Latino ☐Not Hispanic/Latino

3. **Please check ONE or MORE racial group(s) that describe you:**

   ☐African American/Black
   ☐Asian
   ☐Hawaiian Native/Pacific Islander
   ☐Hispanic/Latino only
   ☐Native American/Alaska Native
   ☐White/Caucasian
   ☐Other (Specify):_____

4. **What year were you born?** _____

5. **Please check the highest level of school you have completed.**

   ☐ High school graduate (diploma or the equivalent, for example, GED)
   ☐ NOT a high school graduate (diploma or the equivalent, for example, GED)

6. **What is your ZIP code of residence (where you live)?** _____

7. **Do you currently participate in any of the following programs? Choose ALL that apply.**

   ☐ CalFresh (Food Stamps, SNAP, EBT)
   ☐ CalWORKS (TANF)
   ☐ Head Start
   ☐ Medi-Cal
   ☐ Reduced Price School Meal
   ☐ Section 8 Public Housing
   ☐ Supplemental Security Income (SSI)
   ☐ Women, Infants, & Children (WIC Program)

8. **Are you CURRENTLY covered by any type of health insurance?**

   ☐Yes ☐No

Thank you for your participation!

Tarjeta de Datos Demográficos

Acumulando Información para conducir una Evaluación de las Necesidades de Salud de la Comunidad

Cuéntanos un poco acerca de usted…

Este cuestionario nos ayudará a obtener más información acerca de nuestros participantes de la comunidad. Tus respuestas serán confidenciales y anónimas y no se pueden utilizar para identificarte. Tu participación en este cuestionario es voluntaria.

Por cada pregunta, por favor elije UNO que te describe mejor:

1. **¿Con cuál genero identificas? (ejemplo: femenino, masculino, transexual, otro)**

_____

2. ¿Cuál es tu raza?

☐ Latino/Hispano ☐ No Latino/ Hispano

3. Por favor marca <u>UNO o MÁS</u> grupos raciales que te describe:

☐Afroamericano/Negro
☐Asiático
☐Nativo de Hawái/Isleño del Pacifico
☐Solamente Latino/Hispano
☐Nativo Americano/Nativo de Alaska
☐ Caucásico/Blanco
☐ Otro (especifica):_____

4. ¿En qué año naciste? _____

5. Por favor marca el nivel más alto de la escuela que haya completado:

☐ Graduado de la escuela segundaria, (diploma o el equivalente, por ejemplo, el GED)

☐ No un graduado de la escuela secundaria, (diploma o el equivalente, por ejemplo, el GED)

6. ¿Cuál es tu código postal de residencia (donde usted vive)?_____

7. ¿Participa en alguno de los siguientes programas? Elija <u>TODOS</u> que correspondan:

☐ CalFresh (Cupones De Alimentos, SNAP, EBT)
☐ CalWORKS (TANF)
☐ Head Start
☐ Medi-Cal
☐ Comidas escolares gratis y reducido de precio
☐ Vivienda interés social
☐ Seguridad de ingreso suplementario (SSI)
☐ Programa Mujeres, bebes y niños (WIC)

8. ¿Está usted cubierto por algún tipo de seguranza de salud?

☐Sí ☐No

¡Gracias por participar!

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Key Informant Interview Guide - Questions

1. **Please, tell me (us) about the community you serve.**
    - *Follow up*: What are the specific geographic areas and/or populations served?

2. **How would you describe the quality of life in the community you serve?**

3. **Please describe the health of the community you serve.**
    - *Follow up:* What are the biggest health issues and/or conditions that your community struggles with?

4. **Of the health issues you've mentioned, which would you say are the most important or urgent to address?**
    - *Follow up:* How would you rank these health issues in terms of importance?

5. **What specific locations struggle with health issues the most?**
    - *Follow up*: What specific groups in the community struggle with these health issues the most?

6. **What are the challenges to being healthy for the community you serve?**

7. **What policies, laws, or regulations prevent the community from living healthy lives?**

8. **What resources exist in the community to help people live healthy lives?**

9. **What would you say has been the impact of the Affordable Care Act** [may also be known as Covered California, Obamacare] **on the community you serve?**

10. **What is** [or *who* is] **needed to improve the health of your community?**

11. **Can you recommend 1 or 2 additional people, groups or organizations you think would be most important to speak to about the health of the community?**

12. **Is there anything else you would like to share with our team about the health of your community** [that hasn't already been addressed]**?**

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Focus Group Guide- Questions

1. **Please, tell us about the community you live in.**
    - Follow Up: What are the specific neighborhoods?
    - Follow Up: What types of people live there (race, age, legal status)?

2. **How would you describe the quality of life in your community?**

3. **How would you describe the health of the community where you live?**

4. **Of the health issues you've mentioned, which would you say are the most important or urgent to address?**
    - Follow up: How would you rank these health issues in terms of importance?

5. **What specific neighborhoods or places in your community struggle with health issues the most?**
    - Follow up: What specific groups in the community struggle with these health issues the most?

6. **What are the challenges to being healthy in your community?**

7. **What rules or laws prevent your community from being healthy?**

8. **What resources exist in your community to help people live healthy lives?**

9. **What would you say has been the impact of universal health care coverage** [may also be known as Covered California, Obamacare, ACA] **on your community?**

10. **What is needed to improve the health of your community?**

11. **Is there anything else you would like to share with our team about the health of your community [that hasn't already been addressed]?**

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Focus Group Guide- Youth

1. **Please, tell us generally about the community you live in.**
    - What are the specific neighborhoods? What types of people live there?
    - How would you describe your neighborhood to someone who has never been there?
    - How would you describe the physical environment?

2. **Is life easy or difficult for most people? Why?**
    - What does everyday life look like for most people?

3. **What are the biggest health issues that people in your community struggle with?**
    - What health issues do you see or hear about from friends and family?

4. **What specific groups of people in your community struggle with health issues the most?**
    - Do you see any differences in health by age, race, gender, sexual orientation, legal status?
    - Where do these groups live?

5. **What are the challenges to being healthy in your community?**
    - Do people engage in healthy or unhealthy behavior where you live?
    - Is it easy or hard to make healthy choices in your neighborhood? (e.g. access to healthy foods, places to exercise, access to health care)
    - Is your neighborhood supportive of health? (e.g. sidewalks, safe streets, safe places to exercise, social supports)

6. **Of the health issues we've talked about, which would you say are the most important or urgent to address?**
    - How would you rank these health issues in terms of importance?

7. **What resources exist in your community to help people live healthy lives?**
    - What are the barriers to accessing these resources?
    - What are gaps in these resources? What resources are missing?

8. **What is needed to improve the health of your community?**

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Guía de Grupo de Enfoque

Acumulando Información para conducir una Evaluación de las Necesidades de Salud de la Comunidad

1. **Por favor, díganme de la comunidad adonde ustedes viven.**
   - **Seguimiento:** ¿Cuáles son los barrios específicamente?
   - **Seguimiento**: ¿Qué tipos de personas viven allí? (edad, raza, genero, estatus legal)

2. **¿Cómo es la vida en la comunidad adonde ustedes viven?**

3. **Por favor, describen la salud de la comunidad adonde ustedes viven**

4. **¿De los problemas de salud que han comentado, cuales son los más importantes de resolver?**
   - **Seguimiento**: ¿Estos son los problemas de salud que han dijeron… cuales son los más importantes/urgentes de resolver?

5. **¿Qué grupos específicos (*tipos de gente por edad, raza, genero, estatus legal*) en tu comunidad luchan lo más con estos problemas de salud?**
   - **Seguimiento**: **¿Qué áreas o barrios específicos luchan con problemas de salud lo más?**

6. **¿Cuáles son las barreras para vivir saludable en la comunidad adonde ustedes viven?**

7. **¿Qué tipos de leyes, reglas, o prácticas impiden tu comunidad de vivir saludable?**

8. **¿Qué recursos existen en tu comunidad para ayudar las personas vivir saludable?**

9. **¿El Affordable Care Act ha impactado la comunidad adonde ustedes viven?** [también se conoce como Covered California, Obamacare]

10. **¿Qué es necesario para mejorar la salud de tu comunidad?**
    - **Seguimiento: ¿Hay algún tipo de persona que podría ayudar mejorar la salud de la comunidad?**

11. **¿Hay algo más que les gustaría compartir con nosotros la salud de la comunidad?**
    - **Seguimiento: ¿Hay preguntas?**

2016 Community Health Needs Assessment – Greater Sacramento Region

Project Summary

January 2015 – June 2016

Project Management:

Valley Vision - www.valleyvision.org, (916) 325-1630
2320 Broadway, Sacramento, CA 95818

- **Anna Rosenbaum, MSW, MPH** Senior Project Manager, anna.rosenbaum@valleyvision.org
- **Amelia Lawless, MSW, MPH** Project manager, amelia.lawless@valleyvision.org
- **Giovanna Forno, BA** Project Fellow, giovanna.forno@valleyvision.org
- **Sarah Underwood, MPH** Project Manager, sarah.underwood@valleyvision.org

Organization Information:

Valley Vision is a social enterprise that tackles economic, environmental and social issues. Our vision is a prosperous and sustainable region for all generations. Founded in 1994, Valley Vision provides research, collaboration, and leadership services to make the greater Sacramento Region prosperous and sustainable. We have conducted CHNAs for the four hospital systems the region since 2007.

Project Overview:

The 2016 Community Health Needs Assessment (CHNA) is a collaborative project that assesses the health status of communities in the Sacramento region. Nonprofit hospitals are required to conduct CHNAs every three years and to adopt implementation plans that address the community health needs identified through the assessment. CHNAs collect input from broad interests across the community, including hospitals, public health, residents and other stakeholders. The findings help hospitals to understand the health status and needs of the communities they serve, and to direct their community benefits programs and activities accordingly. The 2013 CHNA reports are available online at www.healthylivingmap.com, and the 2016 reports will be available in the spring of 2016.

Key Deliverables:

Each CHNA report will:

- Describe the health status of the community served by a hospital facility;
- Identify significant health issues that exist within the community and the factors that contribute to those health issues;
- Determine priority areas and actions for health improvement; and
- Identify potential resources that can be leveraged to improve community health.

Strategic Partners:

Lead project consultation:

Dr. Heather Diaz
Associate Professor, Community Health Education
Dept of Kinesiology & Health Sciences
CSU Sacramento

Data collection, analysis and GIS mapping:

Dr. Mathew C. Schmidtlein
Assistant Professor
Dept of Geography
CSU Sacramento

Transcription and translation services:

Cherie Yure
Southern California Transcription Services

Project Orientation:

Health status indicators will be compiled in a database and analyzed to identify geographic areas in each hospital service area (HSA) where socio-economic and demographic factors result in health disparities. Interviews with health service providers and community key informants will be conducted to better understand the health needs of the communities served by each hospital facility. Focus groups will be conducted with medically underserved, low-income, and minority populations to understand their unique and specific health needs and barriers to care. The health needs identified within each HSA will be categorized and organized to identify the significant health needs within each HSA and to prioritize these significant health needs. All findings will be compiled into a comprehensive report that will inform the healthcare systems in creating implementation plans to direct their community benefit programs and activities.

Project Sponsors:

2016 Community Health Needs Assessment (CHNA)

About the CHNA Project

About the CHNA

The 2016 Community Health Needs Assessment (CHNA) is a collaborative project that looks at the health of the Sacramento region. The four nonprofit hospital systems in the region (Sutter, UC Davis, Kaiser and Dignity) work together to conduct health assessments of the communities they serve. The assessments are then used by the hospital systems to develop plans to improve the health of these communities.

The CHNA Reports

Each CHNA report includes:

- A description of the health of the community served by a hospital facility;
- The health issues within the community and the factors contributing to those health issues;
- The areas and communities that are most affected by these health issues;
- The health needs that are most important to improve overall health for the community;
- Potential resources and services that are available to improve community health.

Previous CHNA reports are available online at http://www.healthylivingmap.com (see 2013 CHNA Reports), and the 2016 reports will be available in the Fall of 2016.

How the Project Works

To get information about the health of the community, we talk to many different groups of people including medical providers, public health workers, community organizations, and residents. We ask people to share information with us about: (1) the health issues they see and experience in their communities; (2) the challenges and opportunities to be healthy in their communities; and (3) the resources that may or may not be available to help people live healthy lives. We then look for patterns or themes in what we hear from the community and identify the priority health needs to be included in the CHNA reports. The reports are then used to help the hospital systems decide which community services and programs to support.

About Us

Valley Vision is an organization that works on economic, environmental and social issues. Our vision is to help create a healthy region for all generations through learning about the community, working with other organizations and helping to lead teams of people. We have worked with the four hospital systems in the Sacramento region on this project since 2007.

The Team

Valley Vision - www.valleyvision.org, (916) 325-1630
2320 Broadway, Sacramento, CA 95818

- **Anna Rosenbaum**, Senior Project Manager, anna.rosenbaum@valleyvision.org
- **Amelia Lawless**, Project Manager: amelia.lawless@valleyvision.org
- **Sarah Underwood**, Project Manager: sarah.underwood@valleyvision.org
- **Giovanna Forno**, Project Fellow: giovanna.forno@valleyvision.org

Project Sponsors

Evaluación de las necesidades de salud de la comunidad- 2016

Acerca de la evaluación

Acerca de la evaluación

La evaluación de las necesidades de salud de la comunidad del año 2016 es un proyecto colaborativo que analiza la salud de la región de Sacramento. Los cuatro sistemas de hospitales sin fin de lucros en la región (Sutter, UC Davis, Kaiser y Dignity) trabajan juntos para conducir evaluaciones de la salud de las comunidades que ellos sirven. Los resultados de las evoluciones son usados por los sistemas de hospitales para desarrollar planes para mejorar la salud de estas comunidades.

Que incluye la evaluación

Cada evaluación incluye:

- Una descripción de la salud de la comunidad atendida por un centro hospitalario
- Los problemas de salud en la comunidad y los factores que contribuyen a esos problemas de salud
- Las zonas y comunidades que son las más afectadas por estos problemas de salud
- Las necesidades de salud que son las más importante de mejorar para la salud general de la comunidad
- Los recursos y servicios potenciales que están disponibles para mejorar la salud de la comunidad

Evaluaciones anteriores están disponibles por la página http://www.healthylivingmap.com (vea 2013 CHNA Reports), y los reportes de 2016 serán disponibles en el otoño de 2016.

Como se conduce la evaluación

Para obtener información de la salud de la comunidad, hablamos con muchos diferentes grupos de gente incluyendo proveedores médicos, trabajadores de salud pública, organizaciones comunitarias y residentes. Pedimos que personas comparten información con nosotros acerca de (1) los problemas de salud que ellos ven y experiencia en sus comunidades, (2) los desafíos y oportunidades para vivir saludable en sus comunidades y (3) los recursos potenciales que son disponibles para ayudar personas vivir saludable. Después, buscamos patrones o temas en lo que escuchamos de la comunidad para identificar las necesidades de salud prioritarios que serán incluidos en el reporte final. Los reportes son usados para ayudar los sistemas de hospitales decidir cuales servicios y programas comunitarias apoyar.

Acerca de Valley Vision

Valley Vision es una organización que trabaja en problemas económicos, ambientes y sociales. Nuestra visión es ayudar creer una región saludable para todas generaciones atreves de aprender de nuestra comunidad, trabajar con otras organizaciones y ayudar a liderar equipos de gente. Hemos trabajado con los cuatro sistemas de hospitales en la región de Sacramento en este proyecto desde el año 2007.

Nuestro Equipo

Valley Vision - www.valleyvision.org, (916) 325-1630
2320 Broadway, Sacramento, CA 95818

- **Anna Rosenbaum**, Senior Project Manager, anna.rosenbaum@valleyvision.org
- **Amelia Lawless**, Project Manager: amelia.lawless@valleyvision.org
- **Sarah Underwood**, Project Manager: sarah.underwood@valleyvision.org
- **Giovanna Forno**, Project Fellow: giovanna.forno@valleyvision.org

Patrocinadores del proyecto

You're invited to a group conversation!

Please join us for a 1 ½ hour discussion about the health and wellness of your community. We would like your thoughts

Date:
Time:
Location:

We will provide food and a $10 gift card to those who come.

Thanks for helping us learn about the health needs of your community!

Questions? Contact (PM) at Valley Vision, 916.325.1630

Appendix E: List of Key Informants

Organization	Number of Participants	Area of Expertise	Populations Served	Date
Woodland Memorial Hospital; Sutter Davis Hospital	3	Emergency department; social work	All populations living within the designated hospital service area	6.11.15
CommuniCare	2	Federally Qualified Health Center; Community Health Center	Low-income; medically underserved; racial or ethnic minorities	6.14.15
Yolo County Public Health	2	Public health	All residents of Yolo County	6.15.15
Capay Valley Vision	1	Community based organization	Community based organization	6.26.15
Empower Yolo	1	Community based organization; Violence Intervention	Victims of domestic violence/abuse; low-income; medically underserved; racial or ethnic minorities	7.14.15
Yolo Healthy Aging Alliance	1	Community based organization; advocacy	Older adults of Yolo County; low-income; medically underserved; racial or ethnic minorities	7.15.15
Slavic Assistance Center	1	Community based organization	Refugees from former Soviet Union; low-income; medically underserved; racial or ethnic minorities	7.20.15
Yolo Adult Day Health Center	1	Community based organization	Older adults of Yolo County; low-income; medically underserved; racial or ethnic minorities	7.24.15
Rise Inc.	1	Community based organization; social services	Low-income; medically underserved; racial or ethnic minorities	7.24.15
Yolo County Children's Alliance	1	County program	Children and families of Yolo County; low-income; medically underserved; racial or ethnic minorities	7.29.15
Mercy Housing	1	Community Based Organization; Social Services	Low-income; medically underserved; racial or ethnic minorities	7.29.15

Organization	Number of Participants	Area of Expertise	Populations Served	Date
Wind Youth Services	1	Community based organization	Homeless youth; low-income; medically underserved; racial or ethnic minorities	8.4.15
Suicide Prevention and Crisis Services of Yolo County	1	Community based organization; crisis services/ intervention	Low-income; medically underserved; racial or ethnic minorities	8.4.15
Eskaton	1	Community based organization	Low-income; medically underserved; older adults; racial or ethnic minorities	8.7.15
Yolo County Health and Human Services Agency	1	County Agency	All residents of Yolo County	8.13.15
Turning Point Community Programs	1	Community based organization	Low-income; medically underserved; racial or ethnic minorities	8.19.15

Appendix F: List of Focus Groups

Location	Date	Number of Participants	Demographic Information
Knights Landing Family Resource Center	8.6.15	9	Latina mothers/community members; uninsured; undocumented
Yolo Center for Families- West Sacramento	8.19.15	11	Latina mothers/community members; uninsured; undocumented
Slavic Assistance Center	9.28.15	10	Slavic/ Ukrainian/ Russian community members
Dixon Migrant Labor Camp	10.7.15	22	Migrant workers; Latino community
Yolo Food Bank	10.9.15	6	Latino community members; food insecure
Cottonwood Meadows Apartment Complex	10.16.15	11	Older adults; disabled; low-income

Appendix G: Resources Potentially Available to Meet Identified Health Needs

Resource/ Organization Name	Service Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence-Free Communities
Agency on Aging- Area 4	Arden-Arcade	X	X			X	X		X
Alternatives Pregnancy Center	Arden-Arcade	X	X						
Alzheimer's Association	North Sacramento	X							
American Diabetes Association	North Highlands		X	X			X		
American Red Cross	North Sacramento		X			X			
Another Choice Another Chance	South Sacramento	X							
Breathe California of Sacramento-Emigrant Trails	Downtown Sacramento		X				X	X	
Bryte and Broderick Community Action Network	West Sacramento			X		X			X

Resource/ Organization Name	Service Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence-Free Communities
Capay Valley Vision	Esparto			X	X	X			X
CommuniCare	Davis, Esparto (dental only), West Sacramento, Woodland	X	X	X			X		
Davis Community Meals	Davis					X			
Davis Community Transit	Davis				X				
Davis Senior Center	Davis		X	X		X			X
Del Oro Caregiver Resource Center	Citrus Heights						X		
Dixon Migrant Farm Labor Camp	Dixon					X			
Elderly Nutrition Program Meals on Wheels Yolo County	Woodland					X			
Elica Health Centers	Midtown Sacramento, West Sacramento	X	X						

Resource/ Organization Name	Service Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence-Free Communities
Empower Yolo	Woodland	X				X			X
Eskaton	Carmichael	X	X			X			X
First 5 Yolo	Woodland	X	X	X		X			
Gender Health Center	Oak Park	X	X			X			X
Golden Days Adult Day Health	West Sacramento		X						
Goodwill-Sacramento Valley & Northern Nevada	Rosemont					X			
Head Start- Yolo County Office of Education	Davis, Esparto, West Sacramento, Woodland	X		X		X			X
Health Education Council	West Sacramento			X					X
Knights Landing Community Center	Knights Landing					X			

Resource/ Organization Name	Service Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence-Free Communities
Knights Landing Family Resource Center	Knights Landing		X			X	X		X
Knights Landing One Health Center	Knights Landing		X						
Legal Services of Northern California-Health Rights	Downtown Sacramento					X			
Lilliput Children's Services	Auburn, El Dorado Hills, Citrus Heights, North Sacramento, South Lake Tahoe, South Sacramento,					X			
Mercy Housing	South Sacramento					X			
My Sister's House	South Sacramento	X	X			X			X
PRIDE Industries	North Sacramento, North Highlands, South Sacramento					X			

Resource/ Organization Name	Service Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence-Free Communities
RISE Inc.	Esparto, Woodland	X	X	X		X			X
Sacramento LGBT Community Center	Midtown Sacramento					X			X
Senior Link of Yolo County	Woodland			X		X			X
Shingle Springs Tribal TANF Program	Arden-Arcade					X			
Shriner's Hospital for Children-Northern California	Oak Park		X						
Slavic Assistance Center	Arden-Arcade					X			
St. Vincent de Paul Sacramento Council	Broderick					X			
Su Familia- The National Hispanic Family Health Helpline	Washington, D.C		X						
Suicide Prevention and Crisis Services of Yolo County	Davis	X							X

Resource/ Organization Name	Service Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence-Free Communities
Sutter Davis Hospital	Davis	X	X	X			X		
The Keaton Raphael Memorial	Roseville						X		
The Mental Health Association in California	Midtown Sacramento	X							
Turning Point Community Programs	Rancho Cordova	X				X			
University of California, Davis	Davis					X			
VA Northern California Health Care System	Mather	X	X			X			
Volunteers of America-Northern California & Northern Nevada	Arden-Arcade					X			
Walter's House-Fourth and Hope	Woodland	X				X			
WarmLine Family Resource Center	Downtown Sacramento, Rocklin	X	X			X			

Resource/ Organization Name	Service Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence-Free Communities
West Sacramento Community Center	West Sacramento			X					
Wind Youth Services	Midtown Sacramento	X				X			
Winter's Healthcare Foundation	Winters	X	X	X			X		
Sutter Davis Hospital	Woodland	X	X				X		
Woodland Senior Center	Woodland		X	X		X			
Yolo Adult Day Health Center-Woodland Healthcare	Woodland	X	X	X		X	X		X
Yolo Bus	West Sacramento				X				
Yolo Center for Families	Davis, Knights Landing, West Sacramento, Woodland		X			X			X
Yolo County Children's Alliance	Davis		X			X			X

Resource/ Organization Name	Service Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence-Free Communities
Yolo County Health and Human Services Agency	Woodland	X	X	X		X	X	X	X
Yolo County Housing	Woodland					X			
Yolo County WIC	Woodland		X	X			X		
Yolo Crisis Nursery		X				X			X
Yolo Food Bank	Woodland			X		X			
Yolo Healthy Aging Alliance	Davis		X			X			