Sierra Nevada Memorial Hospital

2016 Community Health Needs Assessment

Acknowledgements

This report was prepared by Valley Vision on behalf of Sierra Nevada Memorial 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 Sierra Nevada Memorial Hospital (SNMH). 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 Sierra Nevada Memorial Hospital located at 155 Glasson Way, Grass Valley, CA 95945. 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 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 concluded 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 visit 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 SNMH included 13 key informant interviews with 21 participants and seven focus groups conducted with 55 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 2013 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 Community Health Needs section of this report. The resources available to address the significant health needs were compiled by using the resources listed in the 2013 CHNA reports 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 SNMH HSA in prioritized order:

1. 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).

2. 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). The category does <u>not</u> include access to mental health providers, which is a component of the Access to Behavioral Health Services category.

3. Disease Prevention, Management and Treatment

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/STDs (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. 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.

5. 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.

6. 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 <u>not</u> include food security, which is a component of the Basic Needs category.

7. 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.

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.

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 SNMH HSA. As accurately as possible, each resource was assessed to determine which of the health needs it most closely addressed.

Through this process, 71 resources were identified pertaining to the significant health needs for Sierra Nevada Memorial Hospital, located at 155 Glasson Way, Grass Valley, CA 95945. The final list of health resources is available in Appendix H.

Report Adoption, Availability, and Comments

The Sierra Nevada Memorial Hospital Board of Directors voted, approved and adopted the Community Health Needs Assessment on June 9, 2016.

This report is widely available to the public on the hospital's web site, and a paper copy is available for inspection upon request at Dignity Health, Community Health and Outreach Department, 3400 Data Drive, Rancho Cordova, CA 95670.

Written comments on this report can be submitted by email to DignityHealthGSSA_CHNA@dignityhealth.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 Sierra Nevada Memorial Hospital (SNMH). 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 Sierra Nevada Memorial Hospital (SNMH), located at 155 Glasson Way, Grass Valley, CA 95945. 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.*

Organizational Commitment

Rooted in Dignity Health's mission, vision and values, Sierra Nevada Memorial Hospital is dedicated to delivering community benefit with the engagement of its management team and Board of Directors. The board is composed of community members who provide stewardship and direction for the hospital as a community resource.

The development of community health improvement strategies to address priority health issues is a collaborative effort engaging members of a dedicated Community Health and Outreach Department who work directly with the hospital president, management and clinical staff, the hospital's Board of Directors as well as community partners. The department is responsible for implementing, managing and evaluating initiatives, and oversees community benefit reporting and the development of the hospital's Community Health Needs Assessment (CHNA). The department director reports quarterly to the Sierra Nevada Memorial Board of Directors, which has oversight for ensuring hospital initiatives and services are aligned with priority health issues identified in the CHNA, represents the needs of the community and monitors the progress of initiatives. The Board of Directors reviews and approves the CHNA and the Community Benefit plan (see Appendix A for a roster of the Sierra Nevada Memorial Board of Directors).

Sierra Nevada Memorial Hospital's community benefit program includes financial assistance provided to those who are unable to pay the cost of their care, unreimbursed costs of Medicaid, subsidized health services that meet a community need, community health improvement services and health professions education. Our community benefit also includes monetary grants provided to not-for-profit organizations that are working together to address significant health needs identified in the CHNA. Many of these programs and initiatives are described in this report.

In addition, the hospital is investing in community capacity to improve health – including addressing the social determinants of health – through Dignity Health's Community Investment Program. Dignity Health investments support nonprofit organizations that deliver an array of services to low-income communities in the Sacramento region.

Dignity Health Mission Statement:
We are committed to furthering the healing ministry of Jesus. We dedicate our resources to:

- Delivering compassionate, high-quality, affordable health services;
- Serving and advocating for our sisters and brothers who are poor and disenfranchised; and
- Partnering with others in the community to improve the quality of life.

Dignity Health Values:
Dignity Health is committed to providing high-quality, affordable healthcare to the communities we serve. Above all else we value:

Dignity - Respecting the inherent value and worth of each person.
Collaboration - Working together with people who support common values and vision to achieve shared goals.
Justice - Advocating for social change and acting in ways that promote respect for all persons.
Stewardship - Cultivating the resources entrusted to us to promote healing and wholeness.
Excellence - Exceeding expectations through teamwork and innovation.

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 the description of the hospital service area (HSA), including a description of geographical areas of the SNMH 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 SNMH 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, impact report of actions taken since the 2013 CHNA, 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) in which the hospital receives its top 80% of discharges. Figure 1 shows the Sierra Nevada Memorial Hospital (SNMH) HSA.
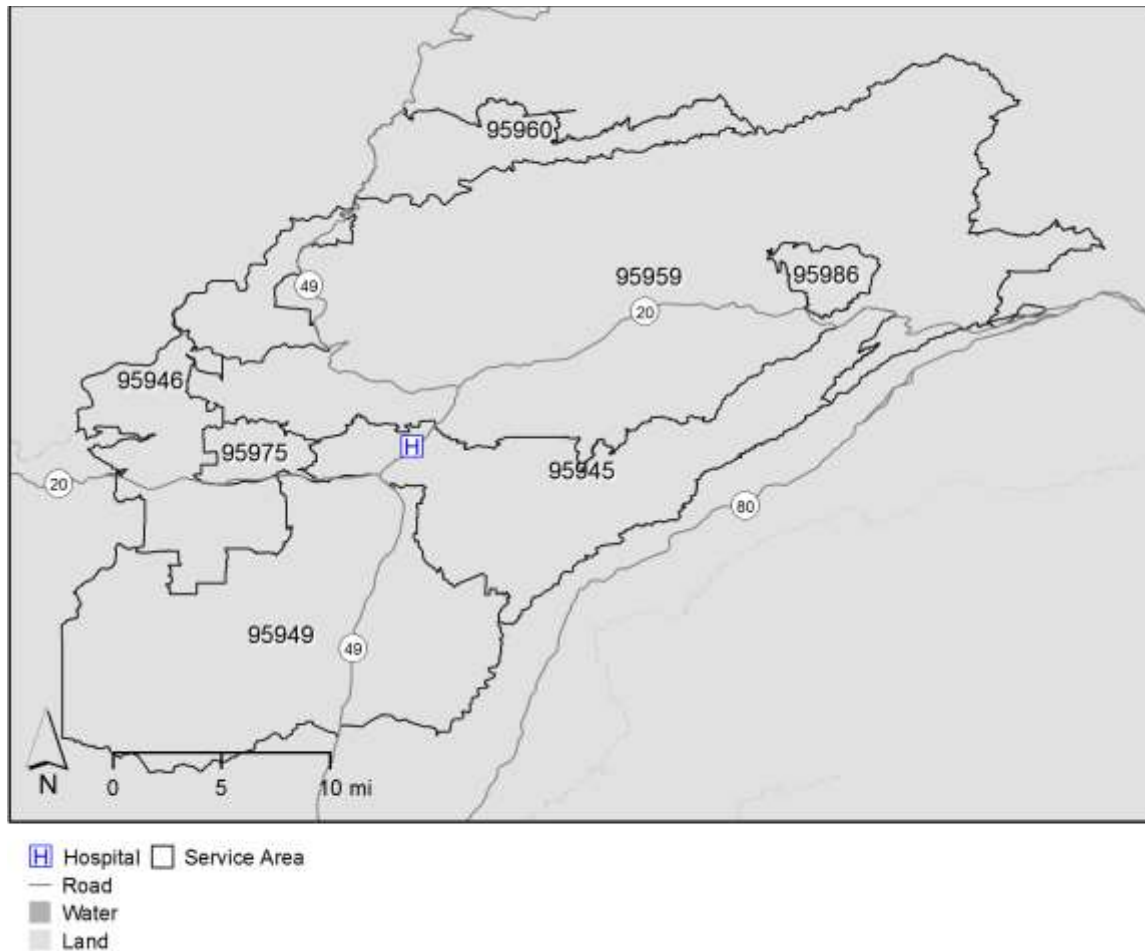
Figure 1: SNMH Hospital Service Area

Demographics of the Hospital Service Area (HSA)

The SNMH HSA is located in Northern California and includes over 75,000 residents. As Tables 1 and 2 show, the area is considerably diverse in population, in economic stability (income and poverty), and insurance status. Table 1 shows the total population count for the SNMH HSA, the median age, and the median income compared to the state benchmarks. Table 2 provides information on the presence of medically underserved, low income, and minority residents in the SNMH HSA.

Population Characteristics

Table 1: Census Population Counts, Range of Median Age and Median Income for ZIP Codes in the SNMH HSA, Compared to the County and State

ZIP Code	Population	Median Age	Median Income
95945	24762	49.7	$42,828
95946	9874	52.8	$60,750
95949	19999	51.5	$62,224
95959	17668	50.7	$63,132
95960	989	35.9	$29,773
95975	2005	49.7	$49,688
95986	36	-	-
SNMH HSA	75333	Range: 35.9 years to 52.8 years	Range: $29,773 to $63,132
Nevada County	*98509*	*48.5 years*	*$57,353*
CA State	*37,659,181*	*35.4 years*	*$61,094*

Source: Census, 2013

The population of the SNMH HSA makes up less than 0.5% of all residents in the State of California. Population counts at the ZIP code level varied from 36 residents in ZIP code 95986 (Washington) to 24,762 residents in ZIP code 95945 (Grass Valley). The median age of Nevada County, 48.5 years, is higher than the median age of the state. The median age at the ZIP code level ranged from 35.9 years in 95960 (North San Juan) to 52.8 years in 95946 (Penn Valley). The median income by ZIP code ranged significantly from approximately $29,773 in 95960 (North San Juan) to $63,132 in 95959 (Nevada City), a range of over $33,000 dollars a year.

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

Table 2: Percent Living Below 100% Federal Poverty Level, Percent Uninsured and Percent Minority for ZIP Codes in the SNMH 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)
95945	18.8	15.5	13.6
95946	10.0	13.0	15.3
95949	7.0	11.7	7.9
95959	12.9	15.1	15.6
95960	31.7	18.4	15.3
95975	2.3	19.6	12.5
95986	100.0	-	-
SNMH HSA	12.9%	14.2%	12.8%
Nevada County	*12.0%*	*14.8%*	*13.7%*
CA State	*15.9%*	*17.8%*	*60.3%*

Source: Census, 2013

The percent of population living in poverty in the SNMH HSA was greater than the Nevada County benchmark, but lower than the state benchmark. The SNMH HSA ZIP code with the highest percent of population in poverty was 95960 (North San Juan) at 31.7%, compared to the lowest percent poverty in ZIP code 95975 (Rough and Ready) at 2.3%. The percent of uninsured residents was lower in the SNMH HSA in comparison to both the county and state percent. The ZIP code with the highest percent uninsured was 95975 (Rough and Ready) at 19.6% and the lowest percent was 11.7% in ZIP code 95949 (Grass Valley). The percent of minority residents was 12.8% for the SNMH HSA, lower than Nevada County at 13.7% and drastically lower than the state at 60.3%. The ZIP code with the highest percentage of minority population was 95959 (Nevada City) at 15.6%.
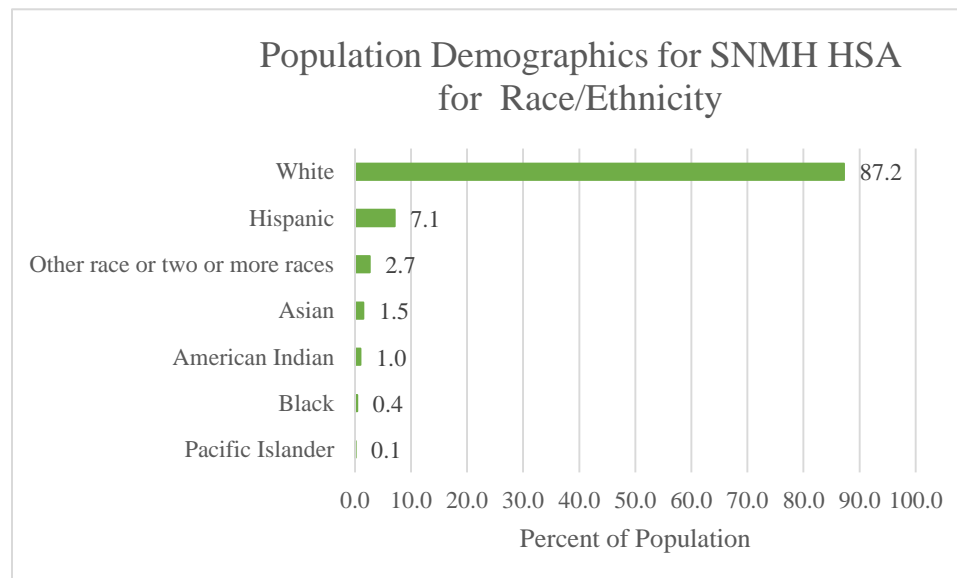
Figure 2: Population Demographics for SNMH HSA for Race/Ethnicity

Figure 2 shows the population demographics for the SNMH HSA. Census data showed that Whites make up the highest percent of residents in the SNMH HSA, followed by Hispanics, and other race or two or more races.

Community Health Vulnerability Index and Focus Communities

To further examine medically underserved, low income and diverse populations in the SNMH HSA, two tools were developed. This assessment used a Community Health Vulnerability Index (CHVI) to help identify census tracts within ZIP codes in the HSA where such populations may reside geographically. Also Focus Communities at the ZIP code level were determined 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 assisted in the identification of geographical areas in the SNMH HSA ZIP codes that may experience health disparities using socio-economic drivers of poor health outcomes. The CHVI is based on the Community Need Index (CNI), created and made publically 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 SNMH 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	
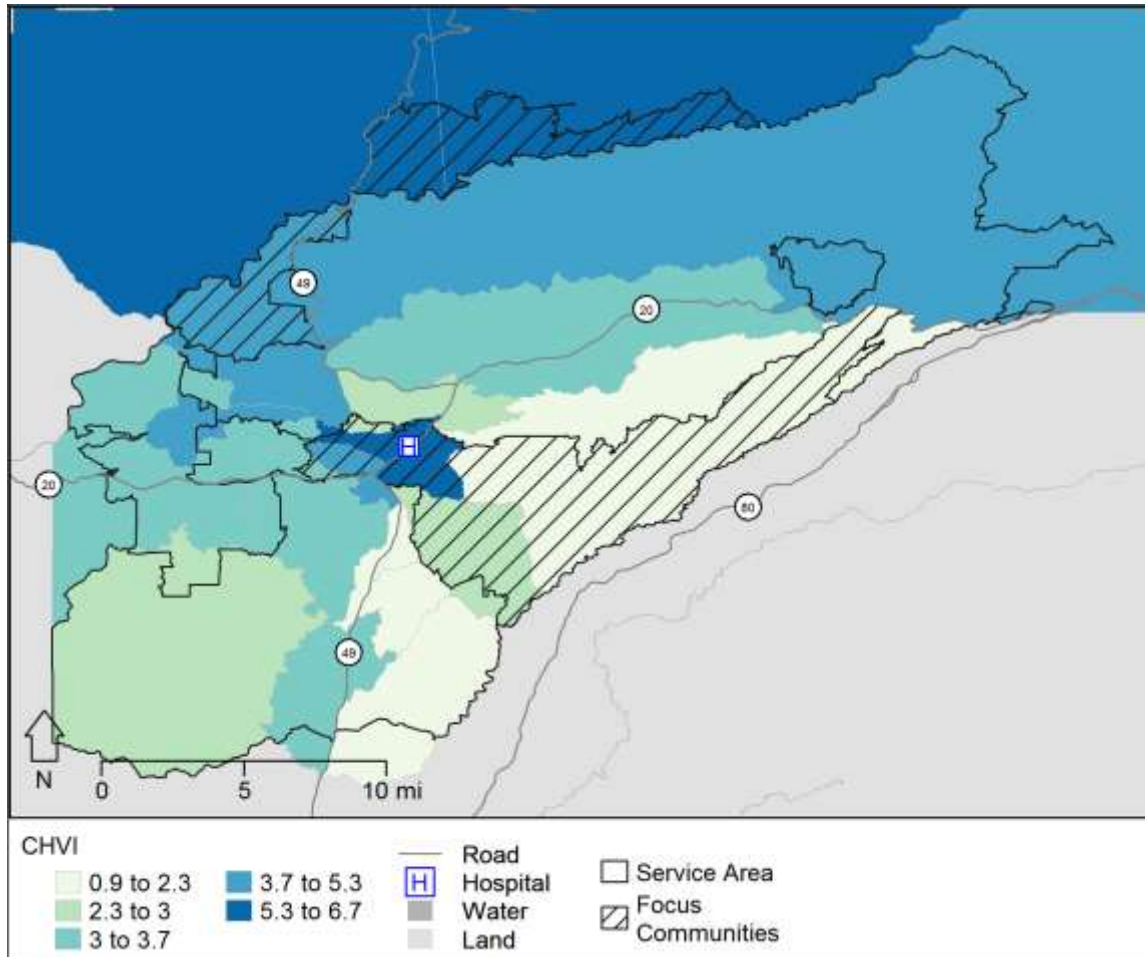
Figure 3: Community Health Vulnerability Index for SNMH HSA

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 in Sierra Nevada Memorial Hospital's 2013 CHNA (previously referred to as Communities of Concern). These inputs provided a unique perspective on social determinants within the SNMH 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 SNMH HSA, values 3.9 to 6.0. In addition to quantitative measures, Focus Communities were further verified through analysis of input from initial service area wide key informant interviews.. Input on vulnerable locations within the SNMH 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 SNMH are found in Figure 4 and listed in Table 5. Figure 4 displays the two ZIP code Focus Communities, denoted in red. The specific ZIP codes and area names are provided in Table 5, with the census population for each.
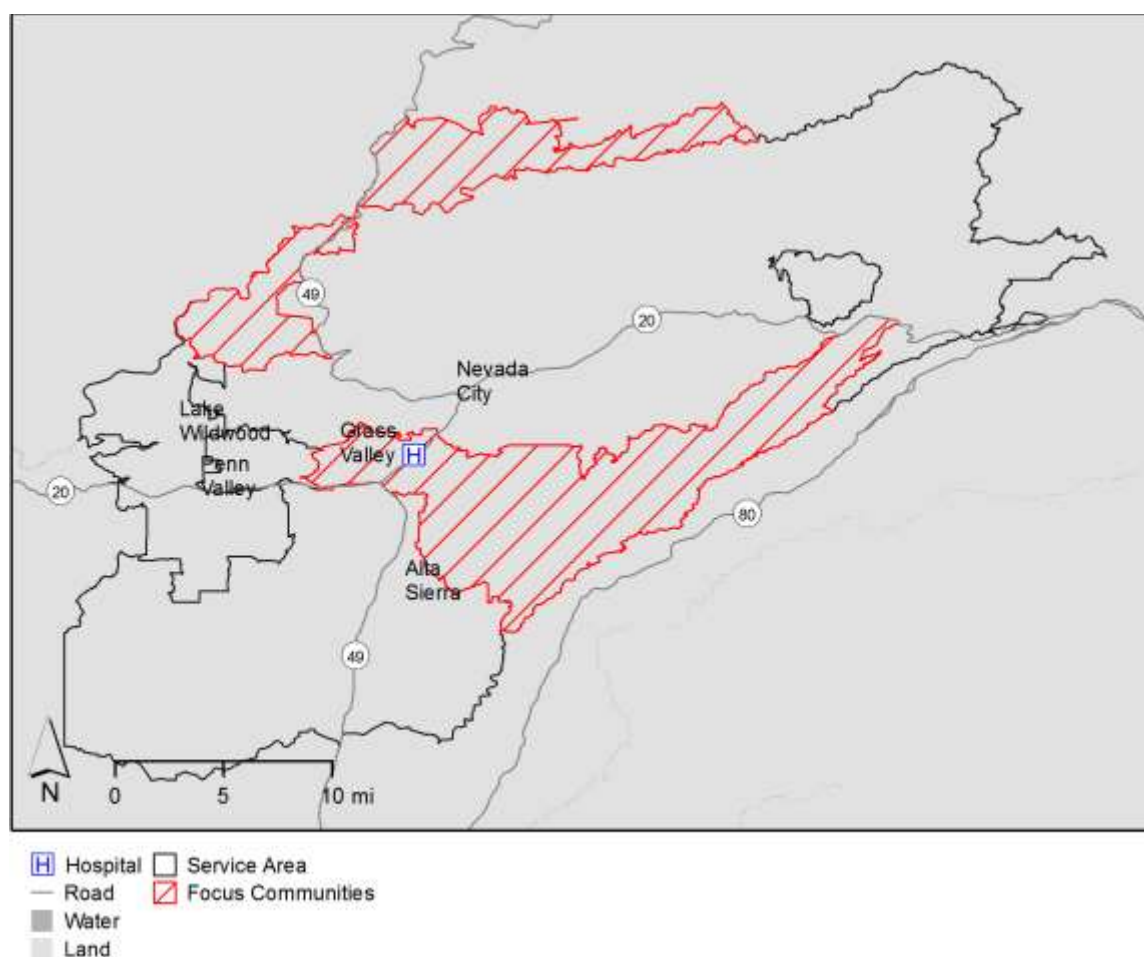
Figure 4: Focus Communities for the SNMH HSA

Table 5: Two Identified Focus Communities for the SNMH HSA

ZIP Code	Community/Area*	Population
95945	Grass Valley	24,762
95960	North San Juan	989
Total Population in the Focus Communities		25,751
Total Population in the HSA		75,333
Percent of the HSA in the Focus Communities		34.2%

Source: 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 SNMH 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 SNMH HSA that were experiencing health inequities. Their response indicated that specific geographic areas like Grass Valley and the North San Juan Ridge were areas of concern. In terms of population groups, data indicated that Latinos/Hispanics, American Indians, youth, individuals

experiencing homelessness and/or disabilities, and people with substance abuse and/or mental health conditions were among the most mentioned as populations in need of improved health. 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 Regional 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 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 SNMH 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).
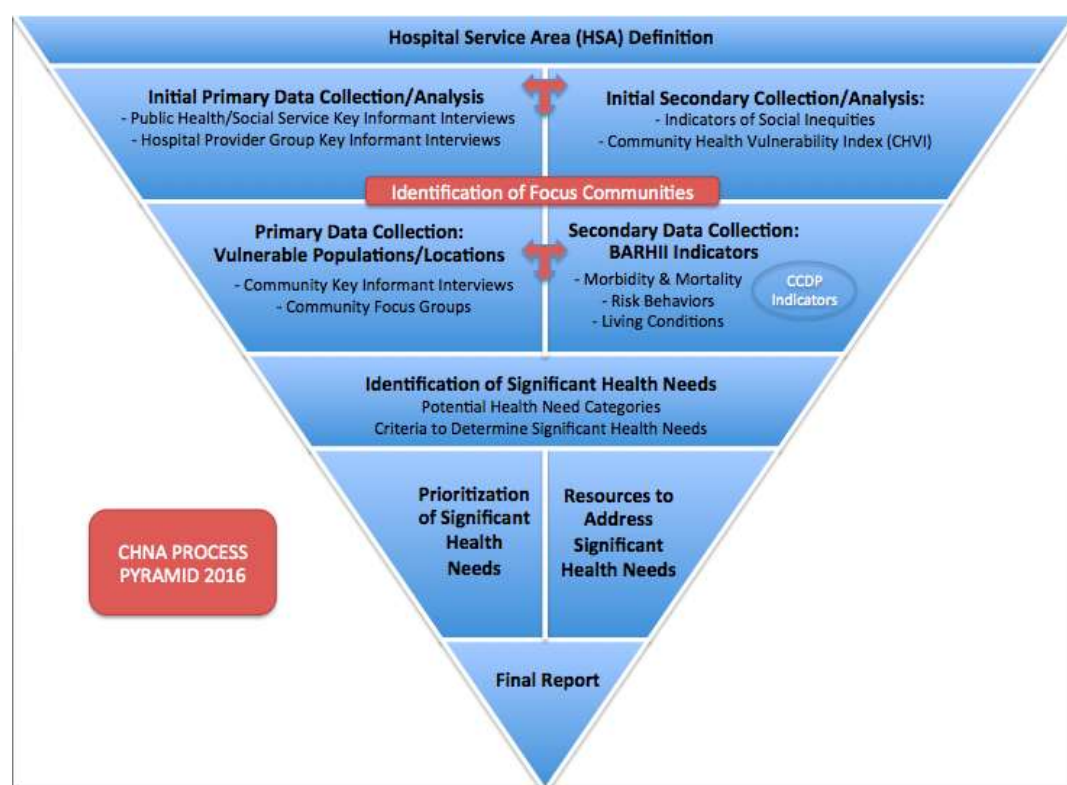
Figure 5: CHNA Process Model

BARHII Model

Quantitative indicators used in this assessment were 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 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.
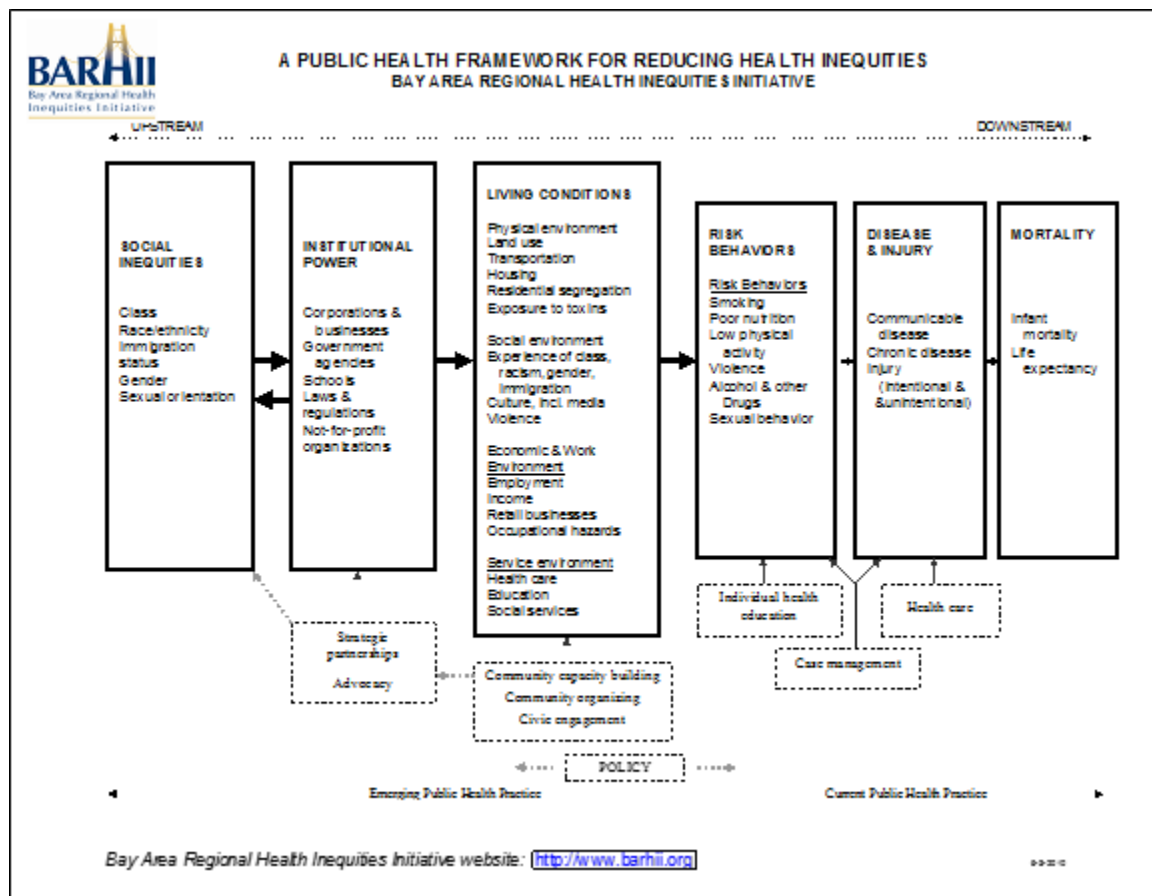
Figure 6: Bay Area Regional Health Inequities Initiative (BARHII) Model[1]

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.

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[1] Bay Area Health Inequities Initiative (BARHII). BARHII Framework. Available at: http://barhii.org/framework/. Accessed Jan 20, 2016.

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 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 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 Community Commons Data Platform (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 in Appendix B, Secondary Data Dictionary and Processing.

The secondary data was processed in multiple stages before it was analyzed. The three basic processing steps include rate smoothing, age-adjustment, and obtaining benchmark rates. A detailed description of this process is outlined in Appendix B, Secondary 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, 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 SNMH 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 county 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 13 key informant interviews were completed for the SNMH HSA with 21 service providers, which are listed in Appendix F. Key informant interviewees represented the following sectors: academic research (5%), community based organizations (32%), health care (37%), health care departments (5%), public health (11%), and social services (5%), with some interviewees representing multiple sectors. These 21 key informants reported working with the following populations: low-income (95%), medically underserved (95%), and racial or ethnic minorities (68%). The racial and ethnic minority groups specified by interviewees included: Latino/Hispanic, Blacks, and American Indians. In addition, key informants specified working with the following vulnerable sub-populations: individuals experiencing homelessness, individuals diagnosed with a developmental disability, serious mental illness and/or substance abuse disorders, 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 SNMH HSA, seven focus groups were conducted with 55 participants who were medically underserved, impoverished, socially and/or linguistically isolated and/or those who had chronic conditions. Of the approximately 52 people who completed demographic data cards, the median age was 45; 66% identified as female, 27% as male, and 2% as other. In addition, 10% indicated they were not high school graduates; 10% indicated they were not covered by health insurance, and 50% received some form of public assistance. The self-reported racial breakdown of focus group participants is listed in Figure 7, with some participants identifying with multiple racial groups.

Sierra Nevada Memorial Hospital
Focus Group Participants Race/Ethnicity (N = 52*)

Race/Ethnicity	Percent
White	63.5%
American Indian	23.1%
Hispanic	17.3%
Other	5.8%
Black	3.8%
Asian	1.9%
Pacific Islander	0.0%

Percent Identifying with Racial Group
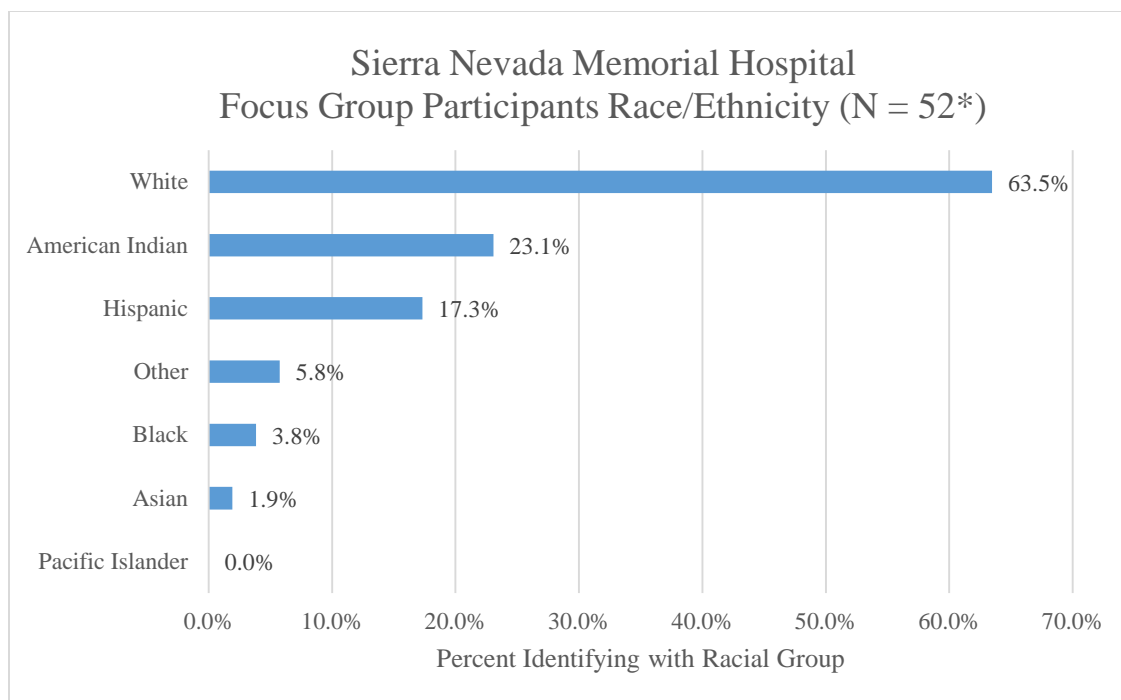
Figure 7: Focus Group Participant Demographics

* 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 analysis was done on the key informant and focus group transcripts utilizing NVivo 10/11 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 codes 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 SNMH 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, Woodland Memorial 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 SNMH 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 the Sierra Nevada 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 in the SNMH HSA. Values in blue are those that fall above or below the desired direction in comparison to the Nevada County benchmark. 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 the Nevada County rate was 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	95945*	74.26	5.26	78.42
	95946	54.46	-	80.31
	95949	53.15	4.51	82.75
	95959	65.73	-	81.73
	95960*	43.32	4.99	-
	95975	28.37	-	-
	95986	-	-	-
	SNMH HSA	66.39	5.06	80.17
	Nevada County	*64.63*	*5.60*	*80.29*
	CA State	*64.59*	*4.90*	*80.50*
	National 2013	*--*	*--*	*78.80[2]*
	Healthy People 2020 Target	*--*	*6.00[3]*	*--*

Source: CDPH, 2010-2012 *Indicates Focus Community

Two ZIP codes had age-adjusted all-cause mortality rates that were above county and state benchmarks. Age-adjusted all-cause mortality was highest in ZIP code 95945 (Grass Valley) at 74.26 deaths per 10,000. None of the ZIP codes in the SNMH HSA exceeded the county benchmark for infant mortality, although both the county and HSA rate exceeded the state benchmark of 4.90 deaths per 1,000 live births. In addition, the Focus Communities of 95945 (Grass Valley) and 95960 (North San Juan) exceeded the state rate at 5.26 and 4.99 deaths per 1,000 live births. One ZIP code, 95945 (Grass Valley) had a lower life expectancy than the county rate at 78.42 years, which is two years lower than the county and state rates.

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

Both primary and secondary data indicated that most chronic illnesses are common in the SNMH HSA. Key informant interviews 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 national in 2013[4]. Diabetes is listed first in this CHNA as it was a commonly mentioned health issue for community residents and quantitative findings show clear

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[2] 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

[3] 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

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

geographic health disparities across the SNMH HSA. Table 7 displays rates of mortality, ED visits, and hospitalizations due to diabetes for each ZIP code.

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	95945*	2.22	215.57	149.96
	95946	1.91	108.16	86.32
	95949	-	120.40	96.12
	95959	1.85	83.60	73.76
	95960*	-	164.25	229.99
	95975	-	97.32	94.99
	95986	-	-	-
	SNMH HSA	1.20	139.58	108.71
	Nevada County	*1.22*	*113.31*	*91.91*
	CA State	*2.10*	*210.90*	*194.00*
	Healthy People 2020 Target	*6.60*	*--*	*--*

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

Three of the seven ZIP codes had mortality rates due to diabetes that were above the county benchmark, but below the Healthy People 2020 benchmark. The highest mortality rate due to diabetes was found in 95945 (Grass Valley) at 2.22 deaths per 10,000 compared to the county rate of 1.22. Both Focus Communities had ED visit and hospitalization rates due to diabetes that were clearly above the county benchmark. ZIP code 95945 (Grass Valley) had the highest rate of ED visits related to diabetes, while ZIP code 95960 (North San Juan) had the highest rate of hospitalizations related to diabetes. The rate of ED visits related to diabetes was above both county and state benchmarks in ZIP code 95945 (Grass Valley).

Primary data showed the participants specifically mentioned diabetes as a challenging issue for area residents. Accessing medication for diabetes management was noted as an area challenge with many residents, especially low income, using the emergency room as an avenue to get their medication refills. One community member said:

> *A Medi-Cal patient will be prescribed a medication, will go to a pharmacy and be told Medi-Cal doesn't cover it. Insulin is one of them; I would think that insulin is necessary for someone with diabetes. But it's not covered. So I see that a lot. People coming back to the ER, calling me and saying the medication that they gave me was not covered. So I'm not able to take it. Therefore, they have to go without because they can't afford that medication. I think insulin is something like $400.* (FG_6)

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 6.0% for Nevada County, below the percent for the state at 8.0%. Please note that the Nevada County rate was used when data was only available at the county 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 major concern for area residents. According to the Dartmouth College Institute for Health Policy & Clinical Practice in 2012, the percent of Medicare patients with diabetes which report having had a hA1c exam to monitor their diabetes diagnosis in Nevada County was 85.0%, above the state percent of 82.0%.

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 the most common and a major cause of heart attacks. More than 600,000 people die of heart disease each year.[5] Table 8 examines rates for mortality, ED visits, and hospitalizations due to heart disease.

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
	95945*	37.01	108.33	233.53
	95946	20.15	58.55	158.20
	95949	18.72	74.50	158.47
	95959	21.48	71.14	157.66
	95960*	-	118.66	304.77
Heart Disease	95975	11.92	96.18	163.29
	95986	-	9.03	17.92
	SNMH HSA	23.60	87.15	186.46
	Nevada County	*23.24*	*74.66*	*165.04*
	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 ZIP code 95945 (Grass Valley) had a rate more than three times higher than the Healthy People 2020 benchmark and more than twice the state benchmark. Both Focus Communities had ED visit and hospitalization rates well above the county benchmark. Most notable were rates of ED visits and hospitalizations in the Focus Community of 95960 (North San Juan), where 118.66 ED visits and 304.77 hospitalizations occur per 10,000 population.

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 7.0% for Nevada County, higher than the state benchmark of 6.0%.

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

Stroke, Hypertension and Kidney Disease

The fifth leading cause of death nationally is stroke.[6] Approximately 800,000 people have a stroke each year, with the most common type being strokes which restrict blood flow to the brain.[7] Tobacco smoking and hypertension drastically increase risk for stroke. Hypertension is common in approximately one out of every three adults.[8] 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.

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	95945*	4.39	16.10	52.56
	95946	5.59	11.58	44.17
	95949	5.06	12.75	36.51
	95959	4.65	14.27	40.32
	95960*	-	15.68	56.01
	95975	-	10.79	34.52
	95986	-	3.31	-
	SNMH HSA	4.36	16.09	45.51
	Nevada County	*4.87*	*13.22*	*39.42*
	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 the county benchmark in two of the seven HSA ZIP codes, with the highest rate seen in ZIP code 95946 (Penn Valley), where 5.59 deaths occur due to stroke per 10,000 population. ED visits due to stroke were above the county benchmark in three of the seven ZIP codes, with the highest rate in Focus Community 95945 (Grass Valley), where 16.10 ED visits occur per 10,000 population. Hospitalization rates due to stroke were higher than the county benchmark in four of the seven ZIP codes, with the highest rates in Focus Communities 95960 (North San Juan) and 95945 (Grass Valley), where hospitalization rates are above both county and state benchmarks.

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[6] Centers for Disease Control and Prevention. (2015). *Leading Causes of Death*. Retrieved from: http://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm
[7] Centers for Disease Control and Prevention. (2015). *Stroke Facts*. Retrieved from: http://www.cdc.gov/stroke/facts.htm
[8] 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 Hypertension

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

	ZIP Code	Mortality	ED Visits	Hospitalizations
Hypertension	95945*	2.02	321.65	376.98
	95946	1.16	201.61	263.60
	95949	-	210.21	256.95
	95959	1.18	166.33	225.31
	95960*	-	332.11	448.00
	95975	-	210.89	235.90
	95986	-	22.51	22.21
	SNMH HSA	1.36	239.76	293.18
	Nevada County	-	*199.72*	*255.54*
	CA State	*1.21*	*408.99*	*383.74*

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

The rate of hypertension-related mortality was substantially higher than the state benchmark in Focus Community ZIP code 95945 (Grass Valley). Examination of ED visits due to hypertension showed elevated rates in five of the seven SNMH HSA ZIP codes, with the highest rate in 95960 (North San Juan), where 332.11 ED visits occur per 10,000 population. Four of the seven ZIP codes had hypertension-related hospitalization rates that were above the county benchmark, with the highest rate in ZIP code 95960 (North San Juan), where the hospitalization rate was substantially higher than both the county and state benchmarks. The Focus Communities of 95945 (Grass Valley) and 95960 (North San Juan) had the highest ED visit and hospitalization rates related to hypertension, compared to all other ZIP codes within the SNMH HSA.

Primary data showed that CHNA participants specifically mentioned high blood pressure as a challenging issue for area residents. Accessing medication refills for blood pressure management was noted as a challenge with many residents, especially low income, using the emergency room as an avenue to get their medication refills. As one community member stated:

> *A lot of high blood pressure, cholesterol, is something that we see people come in to the ER…. come in to the ER for a refill on their high blood pressure medication because they are not able to get in to see their doctor to get that refill soon enough. (FG_6)*

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 for it was 30.0% for Nevada County, identical to the state percent of 30.0%.

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	95945*	1.30	32.03	145.26
	95946	0.89	19.33	92.42
	95949	0.78	19.30	91.45
	95959	0.81	12.07	80.44
	95960*	-	38.60	170.04
	95975	-	24.87	74.05
	95986	-	-	-
	SNMH HSA	0.75	23.80	108.72
	Nevada County	-	*18.89*	*92.16*
	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 higher than the state benchmark in four of the seven SNMH HSA ZIP codes, with the highest rate in 95945 (Grass Valley). ED visits due to kidney disease were above the county benchmark in five ZIP codes, with the highest rates in Focus Communities 95960 (North San Juan) and 95945 (Grass Valley), where 38.60 and 32.03 ED visits occur per 10,000 population, respectively. Hospitalizations due to kidney disease were higher than the county benchmark in three of the seven ZIP codes. The highest rate of hospitalizations related to kidney disease was found in Focus Community 95960 (North San Juan), where the rate was higher than both county and state benchmarks.

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[9]. In an attempt to gain a better understanding of how the SNMH HSA is 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 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 of cancer among Americans today. Screening rates for breast cancer, cervical cancer and colorectal cancer were also examined at the HSA level.

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

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

Cancer incidence communicates risk for cancer within the SNMH HSA. Table 12 shows incidence rates for female breast, colorectal, lung and prostate cancer for each of the ZIP code.

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	95945*	21.58	5.44	6.85	19.35
	95946	25.21	-	8.60	24.81
	95949	25.91	4.38	6.38	19.68
	95959	26.00	4.49	6.14	20.18
	95960*	-	-	-	-
	95975	20.98	-	-	-
	95986	-	-	-	-
	SNMH HSA	24.03	4.25	6.52	19.12
	CA State	*13.16*	*3.88*	*4.54*	*11.61*

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

The breast cancer incidence rate for the SNMH HSA was substantially higher than the state benchmark. Five of the seven SNMH HSA ZIP codes had breast cancer incidence rates clearly above the state, with the highest rate in ZIP code 95959 (Nevada City), where 26.00 new cases occur per 10,000 female population. Incidence rates for colorectal cancer were above the state rate in three of the seven SNMH HSA ZIP codes, with the highest rate in Focus Community 95945 (Grass Valley). Lung cancer incidence rates were above the state rate in four of the seven SNMH HSA ZIP codes, with the highest rate in 95946 (Penn Valley), where 8.60 new cases occur per 10,000 population. In these same four ZIP codes, incidence rates of prostate cancer are substantially higher than the state benchmark. Most notable is the incidence rate of prostate cancer in 95946 (Penn Valley), where 24.81 new cases occur per 10,000 male population. ZIP codes 95945 (Grass Valley), 95949 (Grass Valley), and 95959 (Nevada City) had elevated incidence rates for all four types of cancer.

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 SNMH 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
95945*	25.48	5.92	10.00
95946	24.75	5.66	9.25
95949	27.31	3.14	8.59
95959	24.46	3.93	7.91
95960*	17.88	-	8.81
95975	16.80	-	8.31
95986	-	3.75	11.01
SNMH HSA	23.04	4.46	9.01
Nevada County	*24.46*	*3.92*	*7.31*
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

Six of the seven SNMH HSA ZIP codes exceeded the state benchmark and Healthy People 2020 goal for mortality due to all-cause cancer. Three of these ZIP codes also exceeded the county benchmark, which was substantially higher than the state benchmark and Healthy People 2020 goal. The highest mortality rate was found in ZIP code 95949 (Grass Valley), where 27.31 deaths occur per 10,000 population due to all-cause cancer, compared to the state rate of 15.41 deaths per 10,000. Three of the ZIP codes had rates of ED visits due to lung cancer that were higher than the county benchmark, with the highest rate in Focus Community 95945 (Grass Valley). All seven ZIP codes had lung cancer-related hospitalization rates above the county benchmark, with the highest rate in ZIP code 95986 (Washington), where 11.01 hospitalizations occur per 10,000 population.

CHNA primary data participants spoke frequently about cancer diagnoses within the SNMH HSA. One key informant stated:

> *Cancer is an equal opportunity experience, although there is some cancers that lifestyle can impact and so some of the folks you see in the ER that are problematic, smoking, drinking, those kind of lifestyles increase your risk of head and neck cancers and lung cancers, and those people have the fewest resources in terms of financial and social supports and all of that, because they have lifestyle detriments. They come in with very advanced disease. They want and expect treatment and it's really hard to arrange for all that, because there is not an infrastructure in the community to support them to get through it.* (KI_1)

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 ED visit 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
95945*	9.79	14.05	2.03	6.70	15.30	17.19
95946	7.86	9.24	2.58	7.01	13.25	15.55
95949	7.54	9.85	1.39	7.36	11.42	23.54
95959	6.25	11.17	2.02	5.47	9.48	18.41
95960*	-	14.42	-	5.86	10.89	13.43
95975	12.15	12.21	1.82	8.39	4.44	9.24
95986	-	12.19	-	-	-	-
SNMH HSA	8.62	11.64	2.19	6.47	11.99	16.88
Nevada County	*6.92*	*10.55*	*1.56*	*5.75*	*10.90*	*15.26*
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 four SNMH HSA ZIP codes had rates above the county and state benchmarks. Five ZIP codes had rates of hospitalizations due to breast cancer that exceeded the county and state benchmarks. Rates for ED visits related to colorectal cancer showed that four ZIP codes had rates above the county benchmark, with the highest rate in 95946 (Penn Valley). Hospitalization data for colorectal cancer showed that five of the ZIP codes had higher rates than the county benchmark, four of which also had hospitalization rates above of the state benchmark. ED visit rates for prostate cancer were higher than the state rate in five ZIP codes and higher than the county benchmark in three of the ZIP codes. Rates of hospitalizations related to prostate cancer were higher than the county benchmark in four of the ZIP codes, with the highest rate in 95949 (Grass Valley), where 23.54 hospitalizations occurred per 10,000 population.

Screening rates -- Breast (Mammogram), Cervical (Pap) and Colorectal (Sigmoid/colonoscopy) Cancer
Data on the percent of Medicare enrollees aged 67-69 or older shown in Figure 8 reports the percent receiving a mammogram within the last two years was higher for Nevada County than the state benchmark. The percent of female adults over the age of 18 who reported having had a pap test in the last three years for Nevada County was also higher than the state percent. In addition, more 50 year olds in Nevada County report having had a sigmoidoscopy or colonoscopy at least once as compared to the state.

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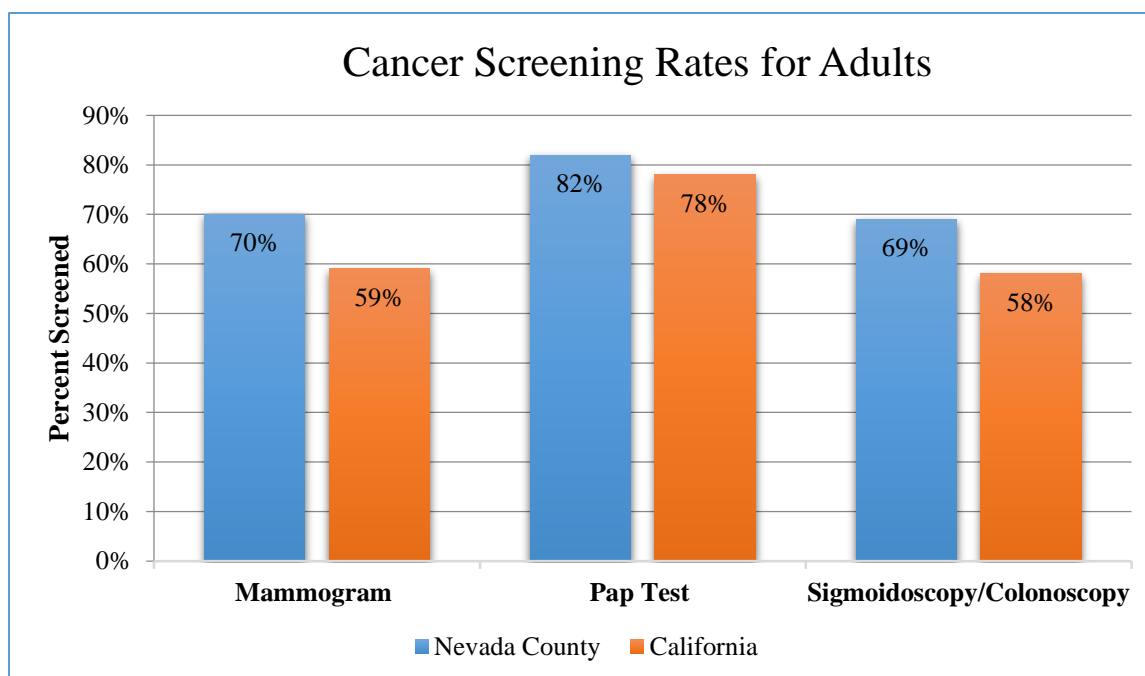
Figure 8: Screening Rates in Adults for Mammograms, Pap Test and Sigmoidoscopy/Colonoscopy

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.[10] 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 a total of 2.96 cases of TB per 100,000 population in the United States.[11] In an effort to understand the impact of respiratory illness in the SNMH 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.

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[10] National Heart, Lung and Blood Institute. (2013). *What is COPD?* Retrieved from:
http://www.nhlbi.nih.gov/health/health-topics/topics/copd
[11] Centers for Disease Control and Prevention. (2014). Tuberculosis. Retrieved from:
http://www.cdc.gov/tb/statistics/default.htm

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

Table 15: Mortality Rates Due to Chronic Lower Respiratory Disease (CLRD), ED Visits and Hospitalization Rates due to COPD Compared to County, State, and Healthy People 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)	95945*	9.95	356.43	320.61
	95946	4.22	165.31	205.63
	95949	3.72	174.20	195.38
	95959	5.28	139.74	159.13
	95960*	-	349.73	348.66
	95975	3.75	200.64	234.41
	95986	-	1,126.56	549.89
	SNMH HSA	5.22	228.12	231.22
	Nevada County	6.29	185.17	187.30
	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

Focus Community 95945 (Grass Valley) had the highest rate of mortality related to CLRD, with 9.95 deaths per 10,000 population, well above both the county and state benchmarks. Although only one ZIP code exceeded the CLRD-related mortality rate of the county, five of the seven SNMH HSA ZIP codes exceeded the state benchmark. Four of the seven ZIP codes had rates of COPD-related ED visits that were higher than the county benchmark, three of which also exceeded the state benchmark. The rate of ED visits related to COPD was alarmingly high in 95986 (Washington), where 1,126.56 ED visits occur per 10,000 population. All seven ZIP codes had rates above the state benchmark for hospitalizations related to COPD. Six of these ZIP codes also exceeded the county benchmark, with the highest rate in 95986 (Washington), where 549.89 hospitalizations occur per 10,000 population. Among residents of ZIP code 95986 (Washington), rates of ED visits and hospitalizations related to COPD are roughly six and three times the county benchmarks, respectively.

Rates -- ED Visits and Hospitalizations due to Asthma

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

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

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	95945*	184.64	103.74
	95946	85.01	71.85
	95949	79.30	72.69
	95959	70.29	66.37
	95960*	150.60	151.65
	95975	97.15	84.99
	95986	442.89	77.26
	SNMH HSA	114.56	83.31
	Nevada County	*92.16*	*68.38*
	CA State	*148.86*	*70.55*

Source: OSHPD, 2011-2013 *Indicates Focus Community

Four of the seven SNMH HSA ZIP codes had asthma-related ED visit rates above the county benchmark, three of which also exceeded the state benchmark. The highest rate of ED visits related to asthma was in 95986 (Washington), where 442.89 ED visits occur per 10,000 population, more than four times the county rate. Asthma-related hospitalization rates exceeded the county and state benchmarks in six of the ZIP codes. The Focus Communities of 95960 (North San Juan) and 95945 (Grass Valley) had the highest rates of hospitalizations related to asthma, at 151.65 and 103.74 ED visits per 10,000 population, respectively.

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 12.0% for Nevada County, below the state percent of 14.0% 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	95945*	0.15	0.36
	95946	-	0.48
	95949	-	-
	95959	-	-
	95960*	-	-
	95975	-	-
	95986	-	-
	SNMH HSA	0.10	0.23
	Nevada County	*0.03*	*0.17*
	CA State	*0.15*	*0.82*

Source: OSHPD, 2011-2013 *Indicates Focus Community

ED and hospitalization data were limited for tuberculosis (TB) within the SNMH HSA. The rate of ED visits among residents of the Focus Community 95945 (Grass Valley) was substantially higher than the county benchmark, although equal to the state benchmark. TB-related hospitalization rates exceeded the county benchmark in ZIP codes 95946 (Penn Valley) and 95945 (Grass Valley), where 0.36 and 0.48

hospitalizations occur per 10,000 population. County rates of ED visits and hospitalizations related to TB were substantially below the state benchmarks.

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."[13] Depression is the most common type of mental illness in the United States and by 2020 will 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.[14] Mental health data at the sub county level is difficult to obtain. ED visits and hospitalizations due to mental health conditions within the SNMH HSA are provided in Table 18.

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	95945*	300.45	365.79
	95946	109.44	185.80
	95949	138.73	192.99
	95959	122.86	157.79
	95960*	247.55	235.97
	95975	95.03	171.35
	95986	596.00	670.74
	SNMH HSA	184.95	239.48
	Nevada County	*149.11*	*196.98*
	CA State	*149.93*	*186.92*

Source: OSHPD, 2011-2013 *Indicates Focus Community

Rates of ED visits and hospitalizations related to mental health conditions were high in three of the seven SNMH HSA ZIP codes. ZIP code 95986 (Washington) had the highest rates of ED visits and hospitalizations related to mental health conditions, with 596.00 ED visits and 670.74 hospitalizations per 10,000 population. These rates are more than three times the respective county and state benchmarks.

One of the major findings of the primary data was the high frequency of mental illness in the county and the need for mental health services. The need for access to mental health/behavioral services was mentioned in 11 of the 20 primary data sources. Changes in the mental health provider network in the last few years have resulted in many residents going untreated for mental illness. Participants discussed the difficulty patients often have getting adequate mental health care in the SNMH HSA, demonstrated in the quotes below:

> *You're never on top of it because we don't have places to refer people. We don't have a network around us. Just the community -- neither Placer nor Nevada County has a child psychiatrist as an example, and our patients have to travel and that's a struggle just to get here. So mental health it's the lack of resources that make it number one for me.* (KI_3)

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

You're only allowed to have 12 sessions and I thought 12 sessions? Years ago it took me a year and a half of going once a week to overcome the problem of my daughter passing. It's not like it's just something that can just be cured. You just go in...okay, you've had 12 sessions you're well. (FG_1)

Serious mental illness and chronic mental health issues such as depression, anxiety, schizophrenia and bipolar disorder were discussed as being significant. Participants also mentioned the need for provider sensitivity when working with people of color, youth, individuals experiencing homelessness, identifying as LGBT, and older adults. In addition, the concept of intergenerational psychological trauma was acknowledged, as demonstrated in the following quote by a community resident:

My grandma wasn't allowed to speak her language, was forced to clean the white one's house, taken away from her family put in a boarding school. So...I know it's true from experience that it affects your mental health deeply and affects your overall health. It still does, generations later. So talk about health in the community, we need to acknowledge what's been done in the past. (FG_1)

Rate -- Alzheimer's disease Mortality

Figure 9 displays areas in the SNMH HSA that have elevated rates of mortality due to Alzheimer's disease. One ZIP code, 95945 (Grass Valley) had an Alzheimer's disease mortality rate of 10.00 deaths per 10,000, which exceeded both the county and state rates of 6.19 and 3.12 deaths per 10,000 population, respectively. Three ZIP codes, 95946 (Penn Valley), 95949 (Grass Valley) and 95959 (Nevada City) had rates that exceeded the state rate.
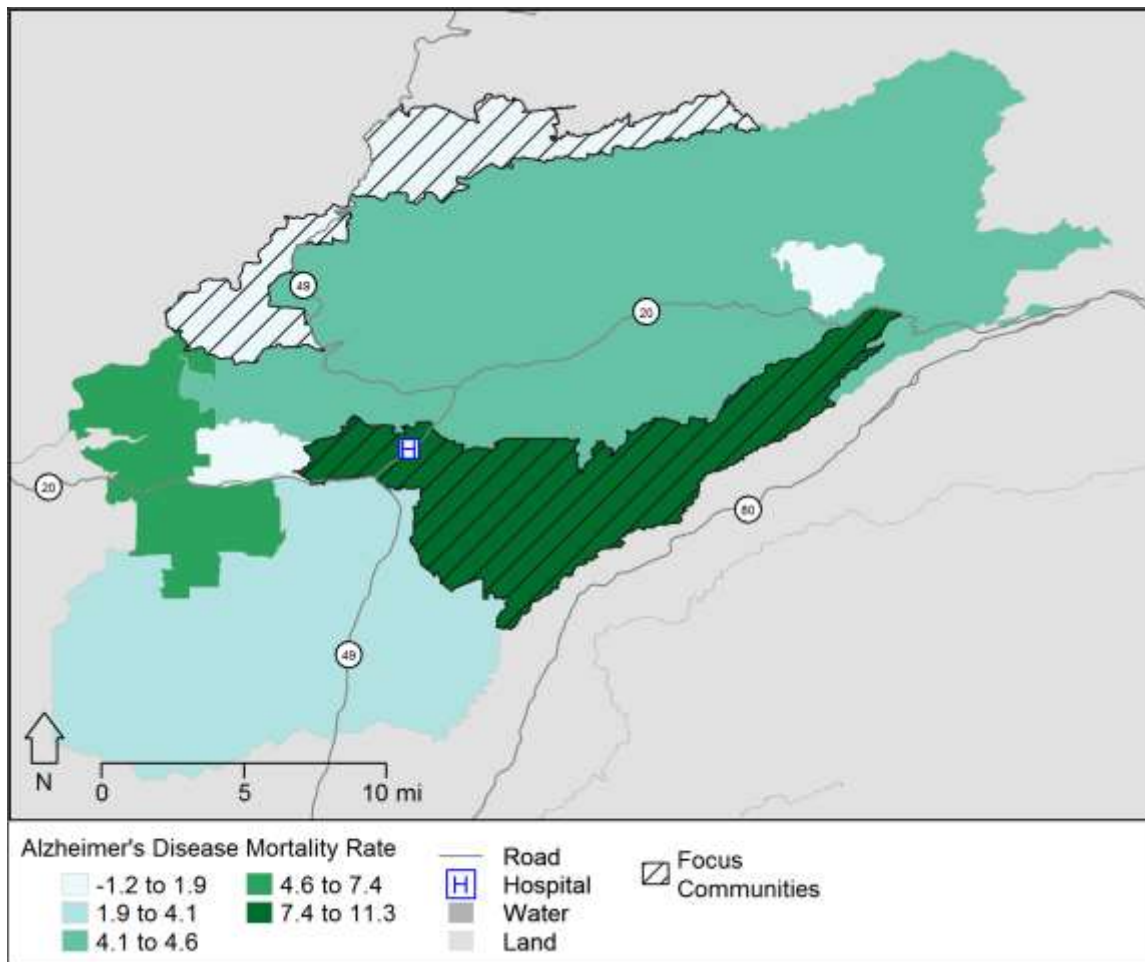
Figure 9: Alzheimer's Disease Mortality Rate

Participants regularly mentioned the fact that the county has a large percentage of older adult residents, and that Alzheimer's is an issue within the SNMH HSA. One service provider said, "*We're higher on Alzheimer's diagnoses and it's not quite clear why, whether we're screening more for it and diagnosing it more, or if we actually have a true higher prevalence of it.*" (KI_9)

In addition, the mental health of caregivers for those diagnosed with Alzheimer's was discussed as being significant. The following quote demonstrates the need for awareness around this issue:

> *Caregivers, for every one person with Alzheimer's there are three caregivers, and the health of caregivers creates higher burden with more to do for patients as the disease progresses. One third of caregivers meet diagnostic criteria for depression. (FG_5)*

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 14.0% of respondents in Nevada County over the age of 18 indicated that they receive insufficient social and emotional support most of the time. This percent was substantially lower than the state percent at 25.0% of respondents.

Dental Health

Oral health is important to overall quality of life. The data used in this assessment to examine the status of oral health in the SNMH HSA was 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. Additional examination of data on dental health is included in later sections of the report in the "Access to Care" section.

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	95945*	167.57	13.96
	95946	67.62	8.37
	95949	52.95	7.70
	95959	66.31	8.86
	95960*	99.80	9.37
	95975	53.21	8.16
	95986	128.75	12.21
	SNMH HSA	95.23	10.11
	Nevada County	*80.22*	*8.83*
	CA State	*41.34*	*7.81*

Source: OSHPD, 2011-2013 *Indicates Focus Community

Rates of ED visits related to dental and oral health were elevated in three of the seven SNMH HSA ZIP codes. Rates of hospitalizations related to dental and oral health were elevated in four of the seven ZIP codes. The highest rates of ED visits and hospitalizations related to dental/oral health conditions were in Focus Community 95945 (Grass Valley), followed by ZIP code 95986 (Washington).

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.[15] Unintentional injury was the third leading cause of death overall but the first leading cause of death for Americans 1-44 years of age.

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[15] 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	95945*	1.84	16.55	10.63
	95946	1.01	7.61	4.29
	95949	1.19	9.24	5.05
	95959	1.89	7.04	5.50
	95960*	1.31	9.38	-
	95975	-	8.52	6.26
	95986	-	11.08	-
	SNMH HSA	1.46	11.25	6.11
	Nevada County	*2.34*	*8.86*	*6.12*
	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 below the county benchmark in all seven SNMH HSA ZIP codes, although rates exceeded the state benchmark in four of the ZIP codes. The highest rate of mortality due to suicide was in ZIP code 95959 (Nevada City), where 1.89 suicides occur per 10,000 population. Rates of ED visits related to self-inflicted injuries exceeded the county benchmark in four of the seven ZIP codes, with the highest rate in Focus Community 95945 (Grass Valley). ZIP code 95945 (Grass Valley) also had the highest rate of hospitalizations for self-inflicted injuries, with 10.63 hospitalizations per 10,000 population. Among residents of Focus Community 95945 (Grass Valley), rates of ED visits and hospitalizations were more than twice the respective state benchmarks.

Participants spoke about feelings of isolation, depression and suicide. One community member explained, "*For me mental health could be a code word. For me, I censor myself, it's hard to say this, I tried to commit suicide, twice. I shot myself in the chest. So for me to be here and to be air quote "healthy" that's a big deal.*" (FG_1). Participants talked about the need for improved access to mental health services, as well as more social engagement and support to combat feelings of isolation and depression.

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	95945*	6.58	1439.39	377.67
	95946	4.16	863.85	274.56
	95949	3.74	777.63	227.46
	95959	5.72	819.02	204.79
	95960*	4.05	1,449.48	391.38
	95975	-	820.65	232.90
	95986	-	4,740.87	488.27
	SNMH HSA	4.32	1,020.86	279.09
	Nevada County	*6.09*	*921.09*	*234.60*
	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

Rates of mortality, ED visits and hospitalizations related to unintentional injuries were substantially higher in Nevada County, relative to state benchmarks. ZIP code 95945 (Grass Valley) had the highest mortality rate associated with unintentional injuries, with 6.58 deaths per 10,000 population. Rates of ED visits related to unintentional injury exceeded the county benchmark in three of the seven SNMH HSA ZIP codes. The rate was alarmingly high in 95986 (Washington), where 4740.87 ED visits occur per 10,000 population. Hospitalization rates associated with unintentional injuries exceeded the county benchmark in four of the ZIP codes. ZIP code 95986 (Washington) had the highest rate, with 488.27 hospitalizations per 10,000 population. Among residents of ZIP code 95986 (Washington), rates of ED visits and hospitalizations related to unintentional injuries were more than five and two times the respective county benchmarks.

Risk Behaviors and Living Conditions in the SNMH HSA

Risk behaviors contribute to increased risk for morbidity and mortality of 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 SNMH 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.[16] Alcohol impaired driving is

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

the cause of 33% of all fatal car accidents.[17] This assessment included examination of multiple indicators addressing substance abuse. The indicators presented here include: rates of ED visits and Hospitalizations due 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.[18]

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
	95945*	1,050.39	307.97
	95946	421.25	183.26
	95949	365.94	157.74
	95959	456.61	163.24
Substance Abuse	95960*	1,132.13	480.67
	95975	453.17	218.86
	95986	8,907.54	1,545.64
	SNMH HSA	627.54	217.39
	Nevada County	*501.21*	*177.97*
	CA State	*253.80*	*145.00*

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

Rates of substance abuse-related ED visits exceeded the state benchmark in all seven SNMH HSA ZIP codes, three of which also exceeded the county benchmark. Hospitalization rates associated with substance abuse were higher than the state benchmark in all seven SNMH HSA ZIP codes, five of which also exceeded the county benchmark. By far, ZIP code 95986 (Washington) had the highest rates of ED visits and hospitalizations related to substance abuse, with 8,907.54 ED visits and 1,545.64 hospitalizations per 10,000 population.

Behavioral health was the first prioritized health need in the SNMH HSA, and substance abuse was mentioned in all 20 primary data sources. Participants spoke at length about the rural nature of the county and the substance abuse problems that exist, especially among youth and individuals experiencing homelessness. The following quotes demonstrate the seriousness of the substance abuse problem within the SNMH HSA:

> *You know, we have a huge a drug culture here and a huge drug problem and so, yeah, opiate use is up. Methamphetamine is up. Marijuana is up. Kids can barely escape our high schools with... you know, a lot of them really suffer because of the experience in the high schools. (KI_1)*

> *Kids as young as in fifth grade are saying that over 25 times they've ridden in a car with a parent under the influence. So, when you think about how healthy are we, again, it's the conditions that they have to live in is that the exposure that they are having to adults who are using alcohol, tobacco and other drugs…We've had kids come that teachers will say would you go in and smell this kid? He is making me sick and it's like the methamphetamine just goes through their skin, because they are living in meth houses. (KI_10)*

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[17] Ibid.
[18] Ibid.

Participants frequently discussed the marijuana industry and the effect it has on the community. One key informant said, "*We definitely see pot smoking is kind of rampant here and very casually viewed and so that's something that we worry about because we do see that it's just everywhere, in a lot of homes*" (KI_11). The following quotes demonstrate some of the additional concerns around this topic:

> *I guess it has just been established over many years that people grow a lot of marijuana up here and that creates a seasonal influx of actually people to manage that harvest of marijuana plants and illegal activity related to that. I think that impacts the hospital and healthcare.* (KI_1)

> *Well, everyone agrees marijuana is probably the biggest industry there is in this community…it makes marijuana extremely easy for kids, for anyone to get ahold of…And there's kind of this general feeling that marijuana is a harmless substance.* (KI_8)

Participants also discussed the need for more inpatient substance abuse treatment facilities in the county, and mentioned that transportation to these services can sometimes be an issue for clients. One community member said, "*People are you know trying to take advantage of these opportunities but are relying on hitchhiking to get to drug treatment appointments*" (FG_7) Many residents, especially those with co-occurring mental health conditions, 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.

Percent – Adults Reporting Excessive Alcohol Consumption
Results of the National Center for Disease Control and Prevention, Behavioral Risk Factor Surveillance System survey indicated that approximately 18.0% of respondents in Nevada County reported 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 17.0%.

Rate -- Liquor Store Access per 100,000 Population
Data on liquor stores from the US Census Bureau for 2012 revealed that Nevada County has 11.09 liquor stores per 100,000 people, compared to the state rate of 10.02 per 100,000.

Percent -- Home Expenditures Spent on Alcohol
Alcohol expenditure data from Nielsen showed the percent of at home expenditures spent on alcohol at the census tract level. Data for 2014 aggregated to the HSA level showed that the percent of expenditures for the SNMH HSA was 15.5%, above the state percent at 12.9%.

Percent -- Prevalence of Tobacco
Data taken from the California Health Interview Survey for 2014 showed that the percent of smoking for adults and teens for Nevada County was 21.0% two times the state benchmark of 10.8%.

Primary data participants spoke frequently about the high rate of tobacco usage within the SNMH HSA. Community members mentioned that there is a need for increased access to cessation services, as well as the need for E-cigarette policies to be incorporated into local non-smoking ordinances.

Percent -- Home Expenditures Spent on Tobacco
Tobacco expenditure data from Nielsen indicates the percent of at home expenditures spent on tobacco at the census tract level. This indicator aggregated to the HSA level revealed that the percent of expenditures for the SNMH HSA was 1.3% 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 SNMH 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 by County in the SNMH HSA

Indicator	Percent Overweight	Percent Obese
Nevada County	15.6%	9.3%
CA State	**19.3%**	**19.0%**

Source: California Department of Education, 2013-2014

As the data presented in Table 23 indicates, the prevalence of overweight and obesity among youth was notably lower in Nevada County in comparison to the state benchmark. Additionally, data by race and ethnicity indicated that the percent of overweight White students was 15.0% compared to Hispanic students at 18.6% and Asian students at 18.5%. Unfortunately, overweight and obesity data is seldom available at the sub-county level in order to examine how rates compare within the counties.

Several key informants brought up the issue of youth obesity and overweight. One provider explained:

> *Our one joint high school district does not have a health education requirement. There is no place in the high school that the kids have access to even getting the information that we have to find ways to do it in other content areas. And I think comprehensive health education has to start at an earlier age. I blame No Child Left Behind where we had to focus on reading and math where everything else, even physical education went away. We have no physical education specialists anymore and it's not... even though I say that we don't have a high obesity rate, our kids are not as healthy as they were before, because they don't integrate it into a healthy lifestyle.* (KI_10)

Percent -- Mothers Reporting Breastfeeding

Research indicates that when a child is breastfed the risk for negative health conditions decreases, especially reducing 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 Nevada County at 97.2% compared to the state percent at 93.0%. Data by race and ethnicity revealed that 97% of White mothers report breastfeeding compared to 98.2% of Hispanic/Latinos and 98.2% of those identifying as multiple race.

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."[19] 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

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

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."[20] Figure 10 identifies the food deserts within the SNMH HSA.
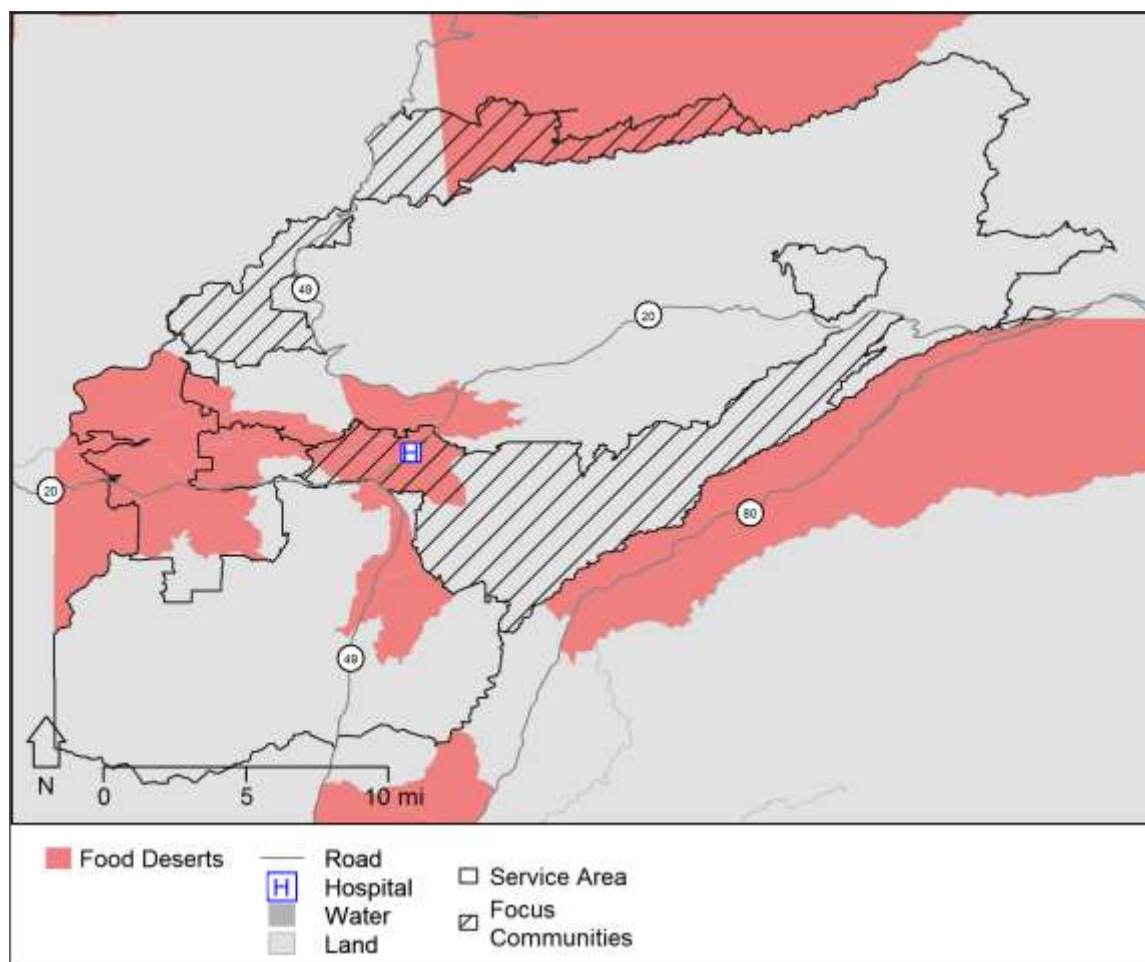
Figure 10: USDA Defined Food Deserts

As shown in Figure 10, portions of six of the seven ZIP codes were in designated USDA defined food deserts. The only ZIP code that wasn't in a designated food desert was 95986 (Washington).

Participants spoke about how healthy food was perceived to be cost prohibitive and that there seemed to be an overabundance of unhealthy options in lower income areas of the county. Data that follows supports this conclusion:

> *There's a lot of fast food here and there's also a lot of restaurants that are healthy but it's so pricey so it's a lot easier to go through somewhere and get cheap food compared to going somewhere and paying $13 for a cheeseburger.* (FG_4)

> *You're probably working long hours and to come home and cook a healthy meal it takes more energy, more time, you know there's that and these communities there is a fast food restaurant on every corner. I have like 5 that are surrounding my house so it's so easy, very cheap, so easy to*

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[20] Ibid.

just get off of work and stop at McDonalds or stop, and not to pick something up that doesn't break the bank so for sure I think that income goes into the lifestyle. (FG_6).

How are you going to have any kind of a healthy diet with vegetables and fiber and all of the good stuff when you can go to the other places and just load up on sugar for almost no money? (FG_7)

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 Nevada County was slightly lower than the state percent. Also, the percentage of population receiving SNAP (Supplementary Nutrition Assistance Program) in 2011 was lower for Nevada County compared to the state percent.
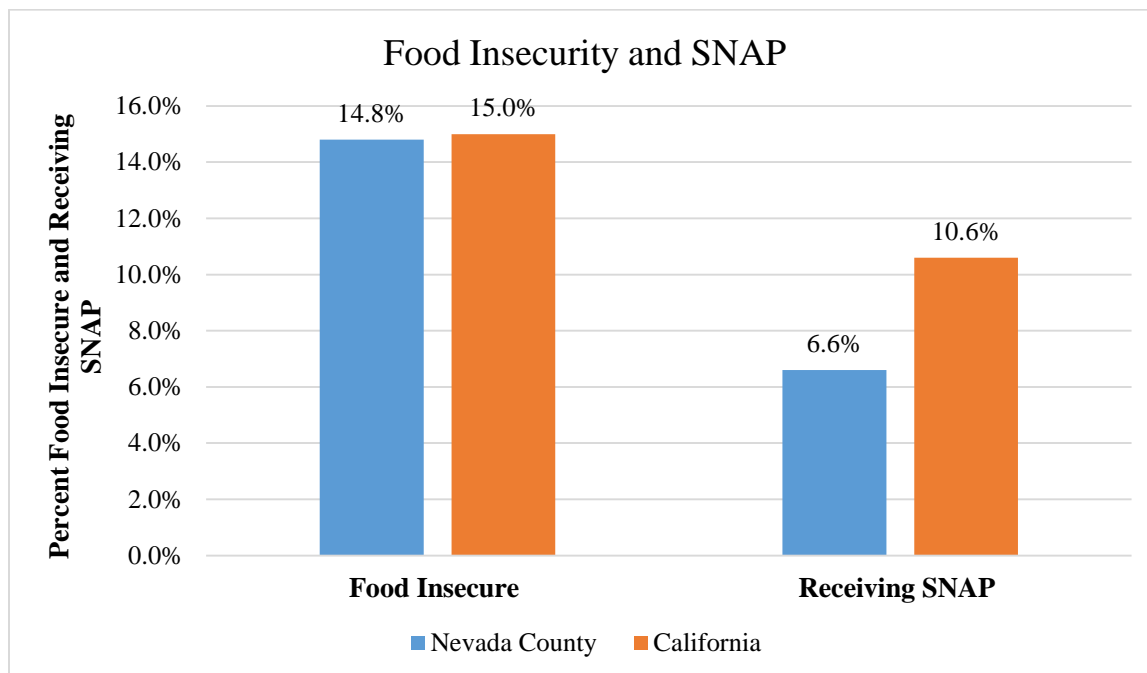
Figure 11: Percent Food Insecure and Percent Receiving SNAP

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, 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 SNMH HSA. Lighter areas indicate poor or no access to healthy food outlets and darker areas indicate greater access to healthy food outlets.

50
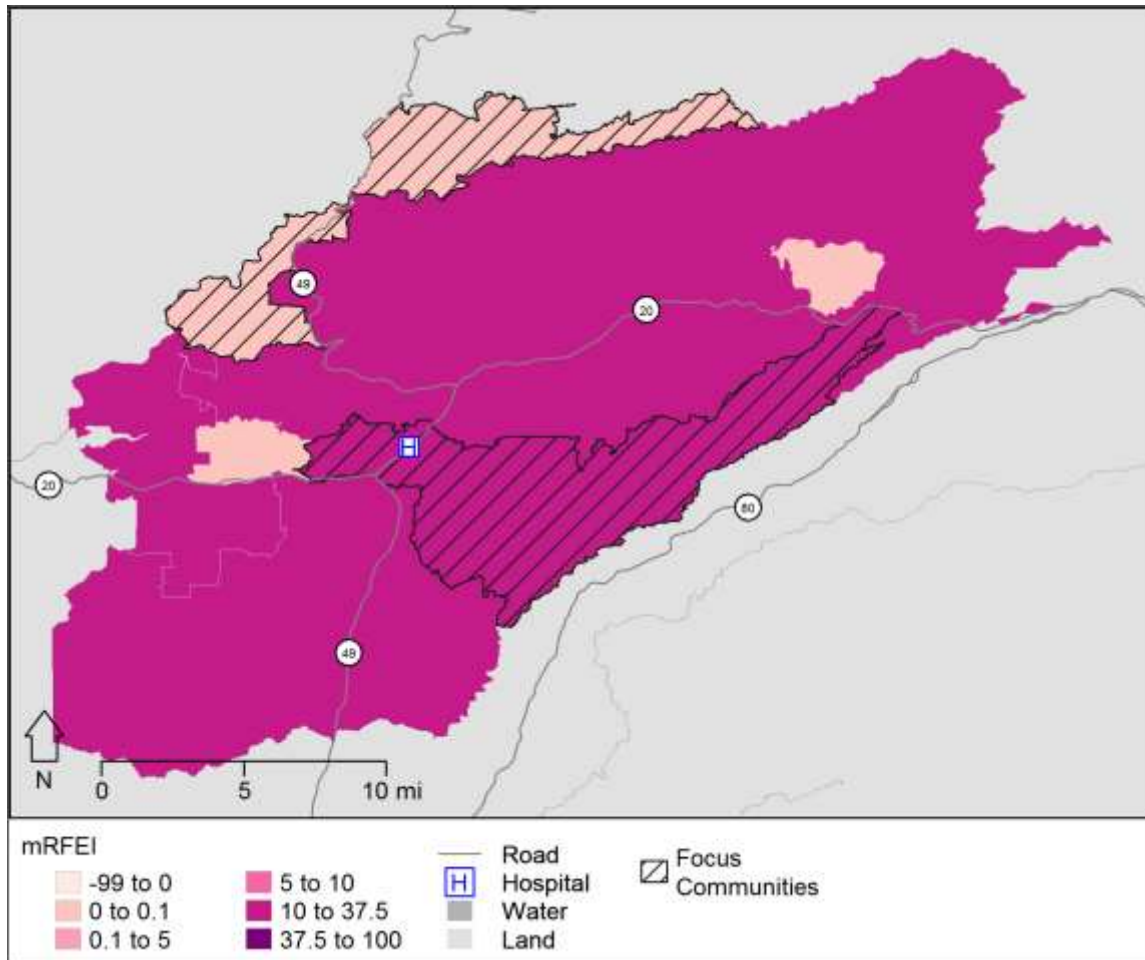
Figure 12: Modified Retail Food Environment Index (mRFEI)

As shown in Figure 12, three ZIP codes have lower mRFEI scores, indicating poor or no access to healthy foods. Specific mention are the ZIP code areas of 95960 (North San Juan), 95975 (Rough and Ready), and 95986 (Washington). The ZIP code with the greatest index value, greater access to healthy food outlets, was ZIP code 95949 (Grass Valley).

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 SNMH HSA was lower than the state rate of 74.51 per 100,000. The rate of grocery stores for the SNMH HSA was higher than the state rate. Figure 13 shows the exact data for each indicator.

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

Fast Food Restaurants: SNMH HSA 54.45, California 74.51
Grocery Stores: SNMH HSA 26.56, California 21.51

Legend: SNMH HSA, California
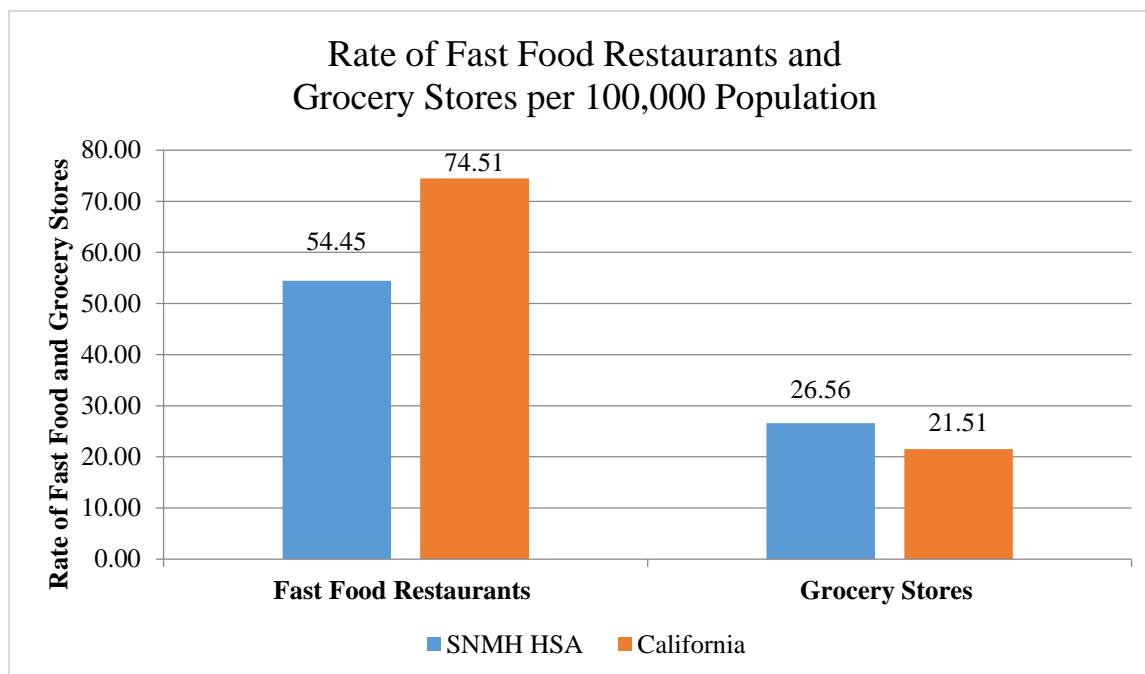
Figure 13: Fast Food Restaurants and Grocery Stores per 100,000 Population

Percent – Youth Eating Less than Five Servings of Fruits and Vegetables a Day
Data from the 2011-2012 California Health Interview Survey indicated that 41.2% of youth in Nevada County report eating less than five servings of fruits and vegetables daily, below the state rate at 47.4%.

Percent – Home Expenditures Spent on Fruits and Vegetables and Soda
Fruit and Vegetable and soda expenditure data from Nielsen indicates the percent of at home expenditures spent on these products at the census tract level. Data from Nielsen for 2014 showed the percent spent for fruits and vegetables for the SNMH HSA was 13.3%, lower than the state percent at 14.1%. However, the inverse is true for soda expenditures. The soda expenditure percent is 3.9%, compared to the state percent of 3.6%.

Percent -- Physical Inactivity for Adults and Youth
Indicators that examine physical activity in the SNMH HSA are very hard to find. In 2012, the Centers for Disease Control and Prevention (CDC) reported that the percent of adults over the age of 20 indicating they perform no regular physical activity for Nevada County was 15.2%, lower than the state rate of 16.6%. However, physical inactivity for youth in Nevada County, as reported using the FitnessGram Physical Fitness Test, was higher than the state. There were 45.5% of youth in grades 5, 7, and 9 classified as physically inactive, compared to the state percent at 35.9%. Examination by race and ethnicity for Nevada County revealed that while 23.5% of Whites were classified as physically inactive, 18.2% of Asian, 29.9% of Hispanic/Latino youth and 30.6% of non-Hispanic multiple race were classified as physically inactive.

Many participants spoke about the barriers to getting adequate physical activity within the SNMH HSA. Community members discussed the lack of recreational opportunities, "*We don't have like YMCAs and big senior centers and teen centers. We don't have some of those kind of opportunities.*" (KI_1) In addition, participants also pointed out that gyms, exercise classes and afterschool sports can be cost prohibitive for many families. In addition, some families have barriers related to basic needs that prevent them from being physically active. For example:

I do see families walking with strollers and trying to cross those streets, so that could be a challenge to them being healthy, because they are just trying to pay their rent and eat and they can't even think about getting an hour of exercise a day. They are too busy in survival mode. (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 SNMH HSA that live 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.
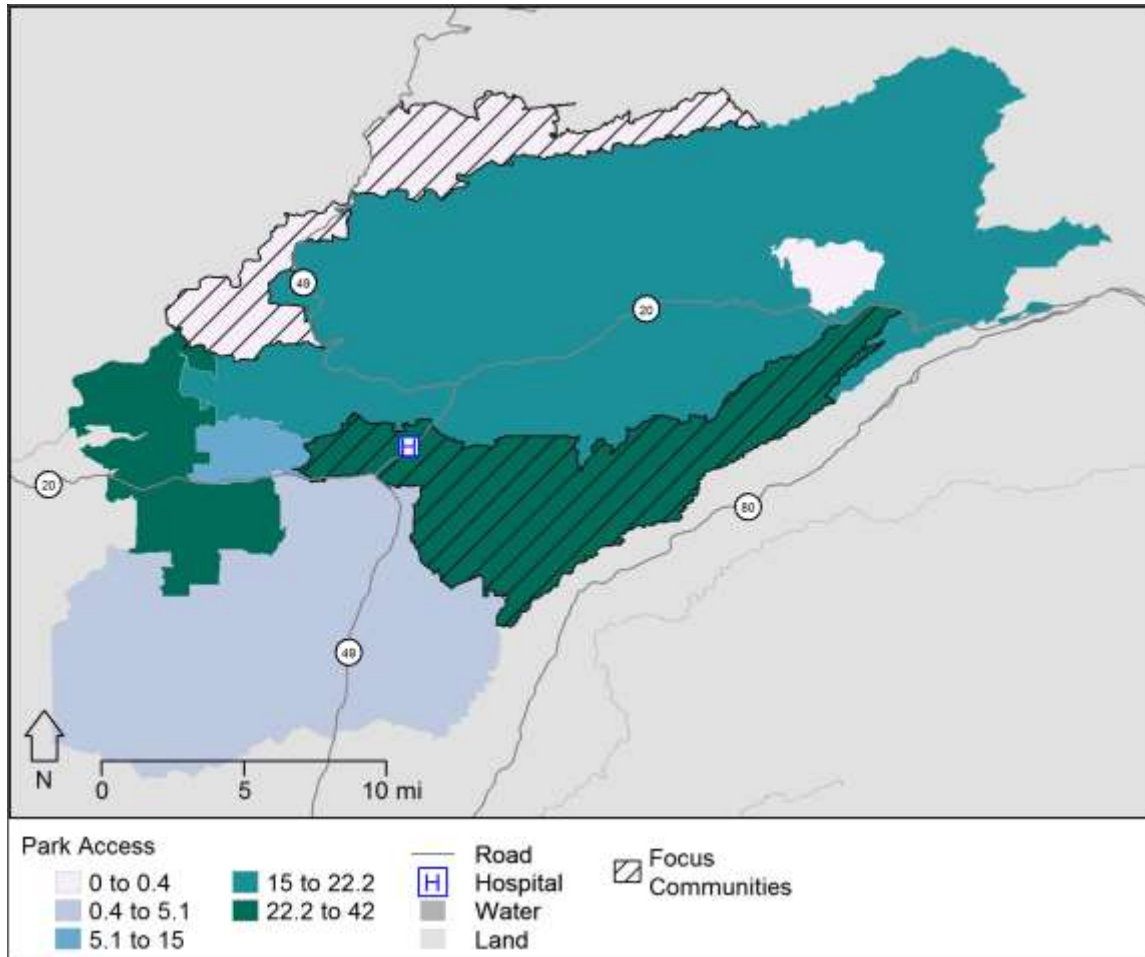
Figure 14: Percent of Population by ZIP Code that Live within One-Half Mile of a Park

As displayed in Figure 14, access to a park varied within the SNMH HSA. ZIP codes 95960 (North San Juan) and 95986 (Washington) and 95949 (Grass Valley) had 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.

Key informants and community members stated that there are plenty of parks, trails, rivers, and lakes within the SNMH HSA, however these opportunities aren't always available to everyone. Lack of transportation and differences in cultural values may limit access to these spaces. As one participant pointed out, *"If you're a family of four and you don't have a car, then it can be quite challenging to get to*

the river or get to some of the trails." (KI_9) In addition, participants pointed out that parking for some recreational opportunities can be cost prohibitive.

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 SNMH 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. [21] Figure 15 shows the teen birth rate for the SNMH HSA.
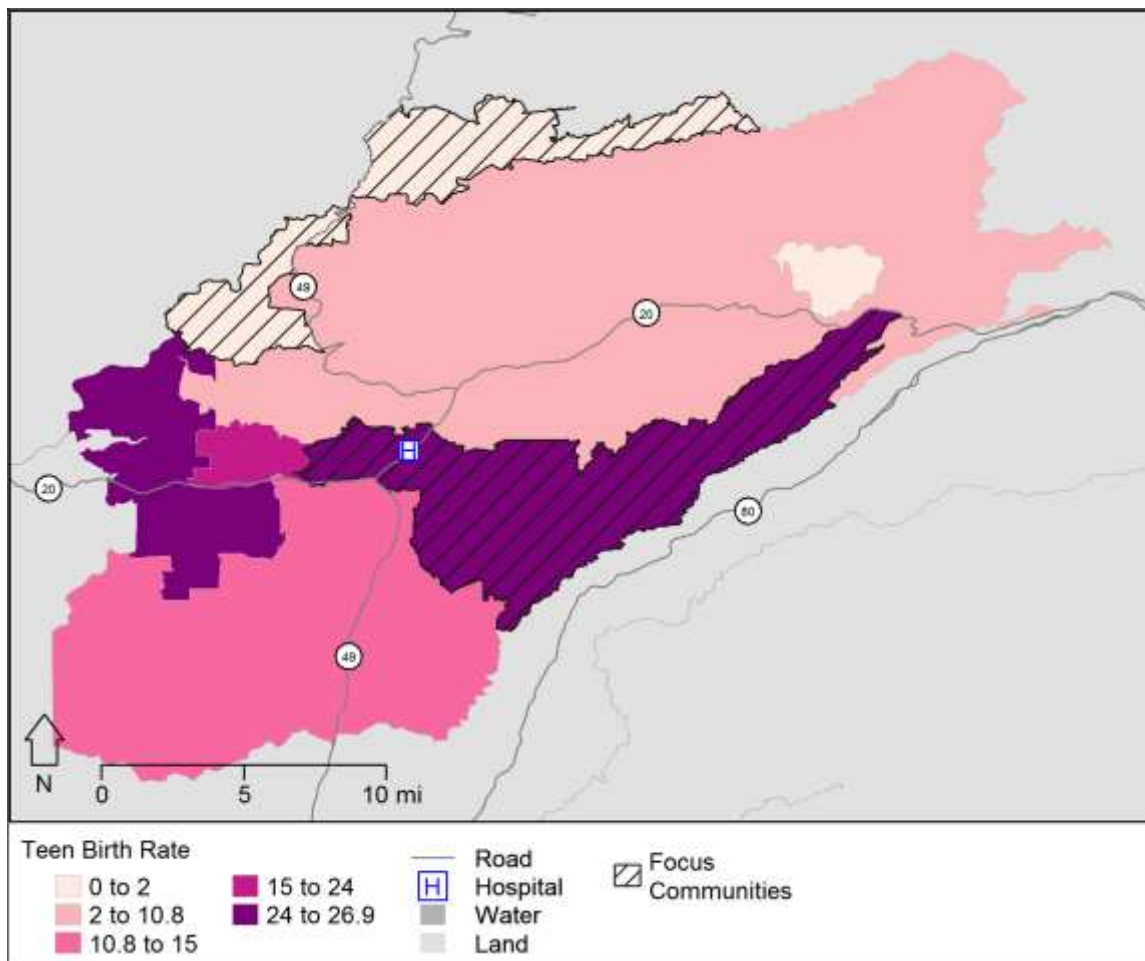
Figure 15: Teen Birth Rate for 15-19 Year Olds per 1,000 Live Births

Three of the seven SNMH HSA ZIP codes had teen birth rates higher than the county rate of 14.80 teen births per 1,000 live births. The highest teen birth rates were seen in ZIP codes 95945 (Grass Valley), 95946 (Penn Valley), 95975 (Rough and Ready) at 26.82, 25.75, and 16.91 per 1,000 live births, respectively.

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

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

Rates of STIs, including chlamydia, gonorrhea, and HIV, illustrate the presence of risky sexual behavior in the SNMH 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	95945*	25.85	4.04
	95946	10.13	-
	95949	18.00	2.50
	95959	27.73	-
	95960*	-	-
	95975	-	-
	95986	-	-
	Nevada County	*20.81*	*2.64*
	CA State	*45.34*	*11.68*

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

Incidence data for chlamydia and gonorrhea were limited at the ZIP code level for the SNMH HSA. Relative to the county benchmark, the incidence of chlamydia was higher in two of the seven SNMH HSA ZIP codes, with the highest rate in 95959 (Nevada City). The incidence rate of gonorrhea exceeded the county benchmark in ZIP code 95945 (Grass Valley), where 4.04 new cases occur per 10,000 population. Focus Community 95945 (Grass Valley) exceeded county benchmarks for both chlamydia and gonorrhea.

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	95945*	2.22	3.86	1.52	3.03
	95946	0.74	1.10	-	0.73
	95949	0.53	2.75	0.35	1.47
	95959	1.36	1.93	0.78	1.35
	95960*	-	-	-	-
	95975	3.44	-	-	-
	95986	-	-	-	-
	SNMH HSA	1.54	2.65	0.89	1.81
	Nevada County	*1.12*	*2.03*	*0.58*	*1.35*
	CA State	*3.20*	*4.58*	*1.95*	*3.36*

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

Rates of ED visits and hospitalizations related to STIs and HIV/AIDS were substantially lower in Nevada County compared to state benchmarks. Table 25 indicates that rates of ED visits related to STIs exceeded the county benchmark in three of the seven SNMH HSA ZIP codes. ZIP code 95975 (Rough and Ready) had the highest rate and exceeded both county and state benchmarks for STI-related ED visits. Two of the seven ZIP codes exceeded the county rate of STI-related hospitalizations, with the highest rate in Focus Community 95945 (Grass Valley). ZIP code 95945 (Grass Valley) also had the highest rates of ED visits and hospitalizations for HIV/AIDS, both more than twice the respective county benchmarks. Rates of ED visits and hospitalizations for STIs and HIV/AIDS exceeded all respective county benchmarks in Focus Community 95945 (Grass Valley).

The issue of STIs was discussed in the primary data. Participants also discussed the need for more screening and needle dispensary programs to prevent the spread of STIs. Participants also talked about the stigma that exists in relation to these diseases and questioned the quality of sex education in the schools. One community member stated:

> *Also the sex education that we did get in high school was very limited. We never really were informed what could come out of being a parent…they don't really talk about safe sex that much or where to get it [contraception], they pretty much tell us about abstinence.* (FG_4)

In addition, key informants discussed the lack of access to care for those diagnosed with HIV/AIDS in the SNMH HSA, demonstrated in the following quote:

> *There was one HIV doctor in town and now there's not one. And so it's very difficult. Our case manager was telling me recently that there's a patient that's in end stage phase and she said he probably didn't have to be that way but he went a year without meds because there was no one here for him to see and he has transportation issues and other issues.* (KI_9)

Rate -- Prevalence of HIV/AIDS per 100,000 Population
The CDC reported that for 2010, the prevalence rate for HIV/AIDS in the SNMH HSA was 76.8 cases per 100,000 population, drastically lower than the state rate at 363 cases per 100,000. Data by race and ethnicity showed that Whites have a rate of 83.56 cases per 100,000, compared to Hispanic/Latino at 73.9 cases per 100,000.

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 indicated that as many as 77.0% of respondents between 18-70 years of age in Nevada County reported never being screened for HIV, above the state percent of 61.0%.

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 SNMH 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 SNMH HSA includes analyzing indicators of transportation, traffic accidents, housing, and pollution.

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 16 shows the percent of households with no vehicle in the SNMH HSA.
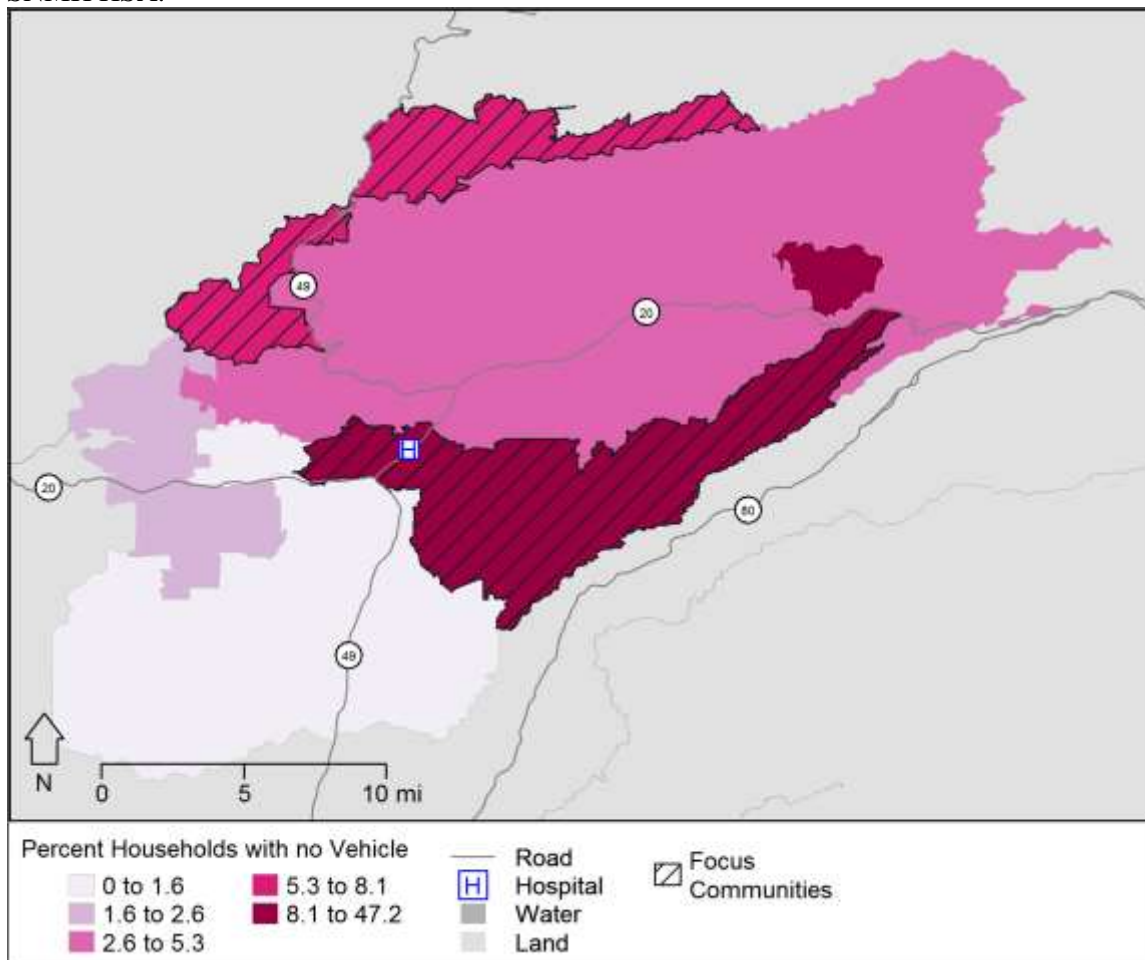
Figure 16: Percent Households with No Vehicle

The percent of households in Nevada County with no vehicle was 4.5%, compared to the state at 7.8%. The three SNMH HSA ZIP codes with the highest percent of households with no vehicle were seen in 95986 (Washington) at 47.2%, 95945 (Grass Valley) at 8.5%, and 95960 (North San Juan) at 6.4%.

Lack of safe and affordable transportation was mentioned as a significant barrier for SNMH HSA residents, and is the fourth prioritized health need. Transportation was mentioned as a barrier to accessing health care, healthy foods, employment, and education. Participants stated that the current public transportation system in the area can be very expensive, sometimes unreliable, and often far from where they live. One service provider said:

> *The majority of our clients don't have transportation and that's a big barrier, very few of them own cars. And we do have a public transit system, but some of them are hard pressed to even*

come out with money for bus passes, I mean, to get on the bus, which it is not very expensive by most standards, but for them it is difficult. (KI_7)

Many other participants spoke about transportation as a major barrier to accessing health care services, given the rural nature of the SNMH HSA. One community member stated, *"Transportation is a big problem in the county. It's not timely, it's not constant, and they recently cancelled some bus routes." (FG_3).* The lack of transportation and the time that it takes to get to resources can be very challenging and add unnecessary stress to residents' daily lives. One key informant said:

I know a lot of elderly have to choose sometimes between whether to eat or take the prescriptions, that's an issue. A lot of them are homebound too, transportation to get to the doctors and stuff is very hard for them (FG_1).

Another key informant discussed challenges of accessing medical care while being in a rural area without access to a car:

People hitchhike with children, maybe they will have a car seat, maybe they won't. Elderly people, people older than I, women they hitchhike because that's how they get around. (FG_7)

Participants also discussed the need for improved transportation services, as well as the ideas of concierge medicine, telemedicine, or shuttle buses that can pick residents up and take them to medical appointments.

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 negative affect.[22] Figure 17 displays the percent of with commutes of more than 60 minutes to work.

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[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/
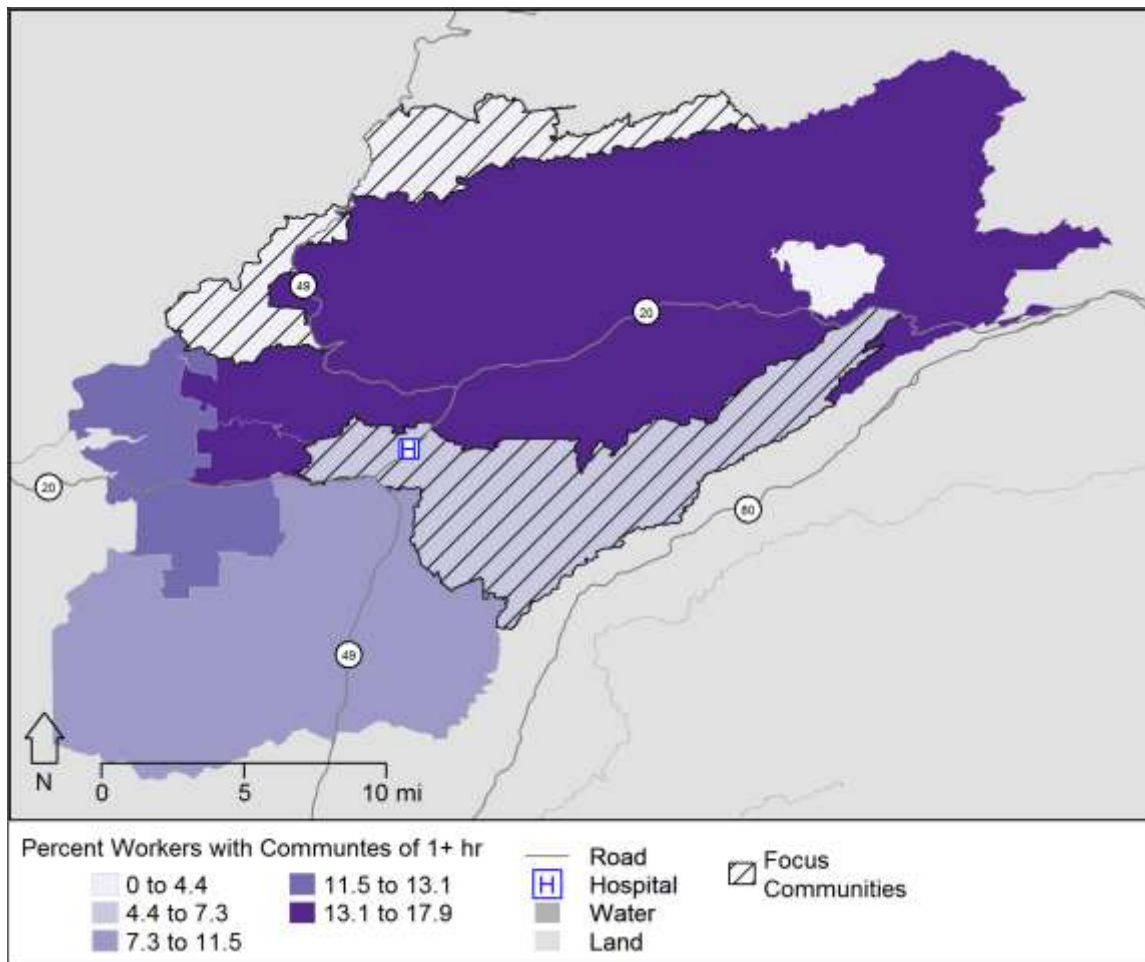
Figure 17: Percent Workers with Commutes of 1+ Hour

Four of the seven SNMH HSA ZIP codes had a high percentage of residents commuting more than 60 minutes to work. ZIP code 95975 (Rough and Ready) had the highest percent of residents commuting more than 60 minutes at 17.9%, followed by ZIP codes, 95959 (Nevada City) at 13.2%, 95946 (Penn Valley) at 12.5%, and 95949 (Grass Valley) at 9.9%.

Percent -- Workers Reporting Commuting Alone and Walking/biking to Work

As displayed in Figure 18, data from the US Census Bureau indicted that 75.3% of respondents in the SNMH HSA over the age of 16 years old reported commuting to work alone, higher than the state percent. The Census data also indicated that 2.9% of respondents stated that they walk or bike to work, below the state percent of 3.8%.
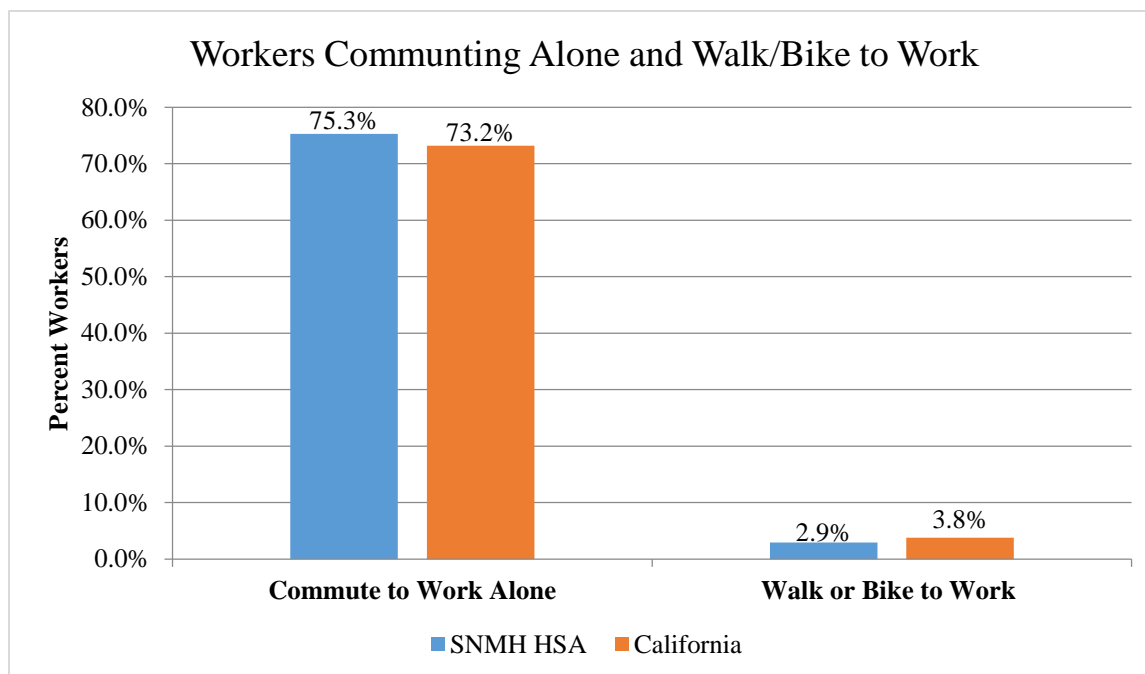
Figure 18: Percent of Workers Commuting to Work Alone and Walking or Biking to Work

Rate -- Road Density Network per Square Mile

Examination of road network density revealed that Nevada County has more roads per square mile than the state. The number of roads per square mile for Nevada County was 2.92 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 for 2013 showed an elevated number of fatal traffic accidents in 95959 (Nevada City) and 95945 (Grass Valley), at four and two fatal accidents, respectively. ZIP codes 95946 (Penn Valley) and 95949 (Grass Valley) each had one fatal traffic accident.

The rate of fatal motor vehicle accidents for 2010-2012, as reported by the California Department of Public Health, in Figure 19 showed that the SNMH HSA rate of fatal accidents was slightly above the state rate. Fatal accidents involving a pedestrian (motor vehicle killed a pedestrian) were slightly below the state rate.
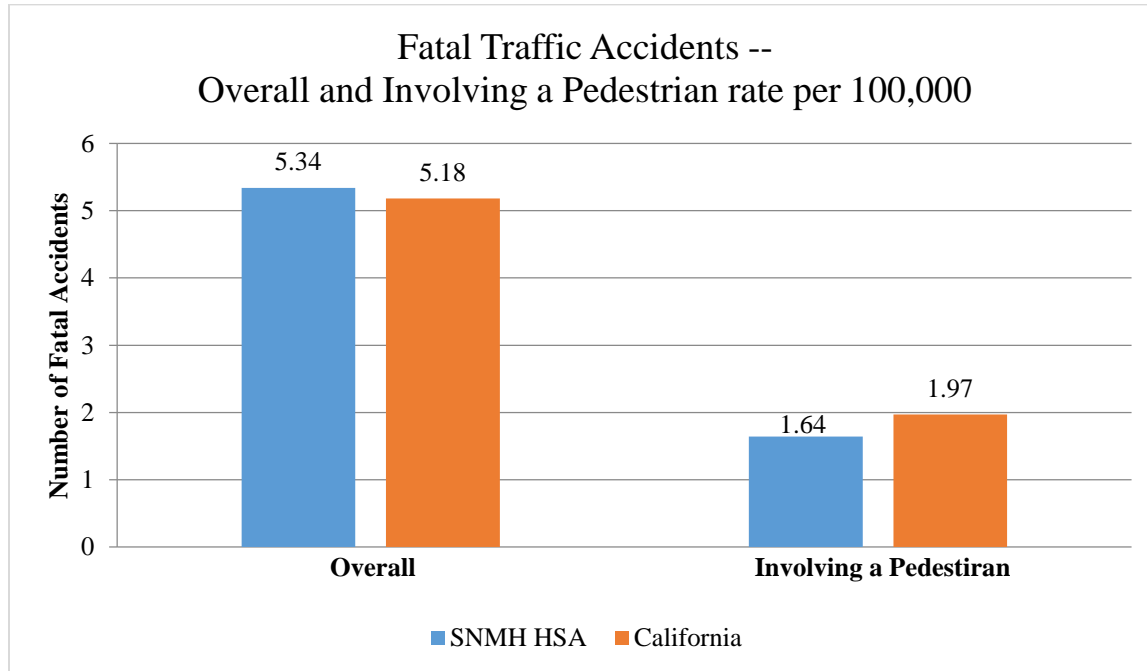
Figure 19: Rate of Fatal Accidents Overall and Involving a Pedestrian

Key informants spoke about a concern over the built environment within the SNMH HSA. One big issue of concern was the lack of sidewalks and bike lanes on many roads throughout the county, as well as the speed of traffic. As one focus group participant stated, *"There's no sidewalk coming up that side either like it just cuts off, so I have to walk on the road and I'm scared. I've walked that quite a few times and cars usually speed past you."* (FG_4). Another participant explained the dangers that some residents face when walking the roads:

> I once saw a lady pushing her baby carriage up Oak Tree Road along the side where cars are coming around corners really fast and there's no bike lane that she could've been walking in. I would love to get a bike lane. (FG_7)

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 for the SNMH HSA as an indicator of housing stability.

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[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: SNMH HSA Percent Housing Vacancy, People per Housing Unit and Percent Renting

ZIP Code	Percent Housing Vacancy	People per Housing Unit	Percent Renting
95945*	12.1	2.17	41.0
95946	7.9	2.29	21
95949	11.5	2.47	16.6
95959	11.9	2.41	22.5
95960*	10.4	2.75	27.8
95975	10.0	2.72	20.2
95986	72.7	1.00	-
Nevada County	*22.2*	*2.38*	*27.4*
CA State	*8.6*	*2.94*	*44.7*

Source: Census, 2013 *Indicates Focus Community

High vacancy rates are indicators of housing market conditions[24], specifically the affordability of housing in the area. By far, the largest percent of housing vacancies was in ZIP code 95986 (Washington), where 72.7% of housing units were unoccupied. 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 were elevated above the county benchmark in four of the seven SNMH HSA ZIP codes, with the highest rate seen in Focus Community 95960 (North San Juan). Also, 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. Focus Community 95945 (Grass Valley) had the highest percentage of renter-occupied housing units, well above the county benchmark.

Primary data participants spoke about housing insecurity and the high cost of housing in areas throughout the SNMH HSA, especially in lower income communities where employment opportunities are lacking. As one key informant stated:

> *I think one of our big picture situations is housing. There's a lot of people who don't have adequate housing. There's a lot of people who can't afford to have housing and I think it's kind of a foundational issue that affects a lot of things. If you don't have a home you're not going to have health care.* (KI_9)

Another community member stated, *"There's a three year waiting list for subsidized housing here in Nevada county" (FG_3)*. Barriers to accessing housing have created many challenges for community members in maintaining their health and transitioning to more stability.

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

The United States Department of Housing and Urban Development (HUD) reports in 2013 that the total number of HUD funded housing units in Nevada County was 61.61 units per 10,000 housing units, drastically below 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 45.6% in Nevada County, lower than the state percent at 48.4% of households.

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[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

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 SNMH HSA included the examination of two indicators: housing costs with a mortgage payment greater than 30% of the household's income and rental housing payments greater than 30 % of the household income. Figures 20 and 21 show these two indicators across the HSA.
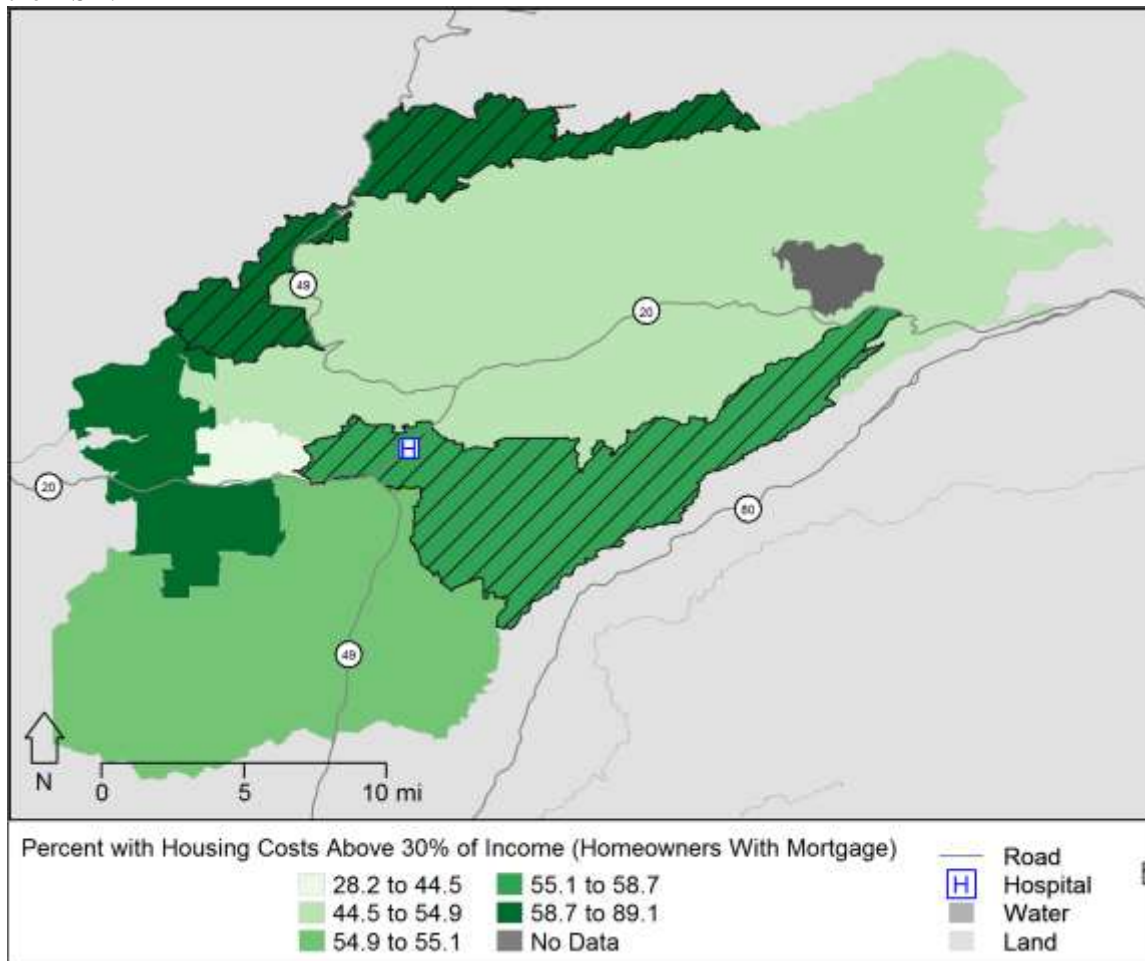
Figure 20: Percent of Residents by ZIP Code with Housing Costs above 30% of their Household Income with a Mortgage Payment

Four of the SNMH HSA ZIP codes had a percentage of residents with a housing mortgage cost of greater than 30% percent of their household income that fell above both the county benchmark of 53.0% and the state benchmark of 48.1%. These ZIP codes included: 95960 (North San Juan) at 89.1%, 95946 (Penn Valley) at 58.7%, 95945 (Grass Valley) at 55.1% and 95949 (Grass Valley) at 54.9%.
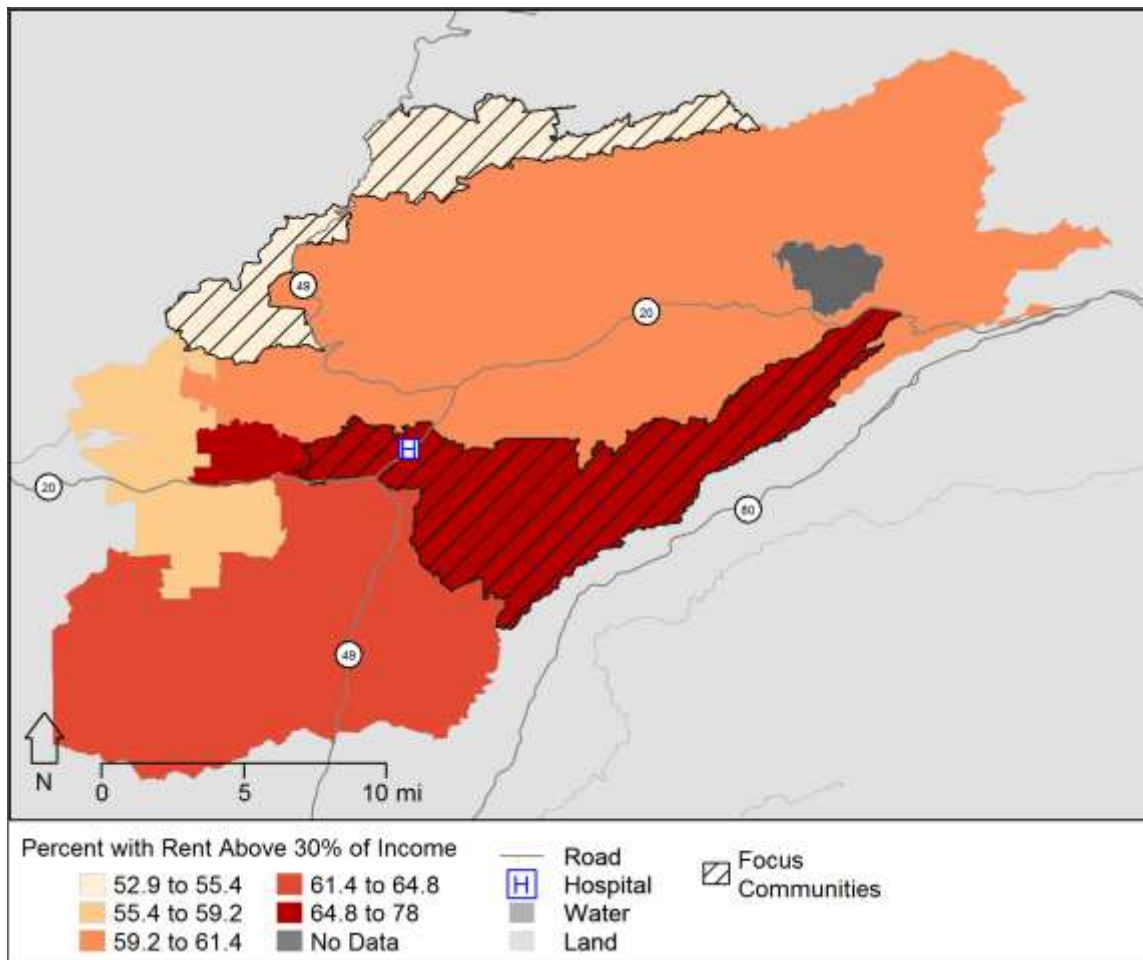
Figure 21: Percent of Residents by ZIP Code with Housing Rental Costs above 30% of their Household Income

The percent of residents with rent above 30% of their income was 63.5% for Nevada County and 56.9% for the state. Two of the seven ZIP codes had a higher percent of residents with rental costs above 30% compared to the county percent, while four ZIP codes had a higher percent compared to the state. The highest percent was seen in ZIP code 95975 (Rough and Ready) at 78.0%.

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

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[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

A pollution burden score was identified for each census tract in the SNMH HSA and is displayed in Figure 22. 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.
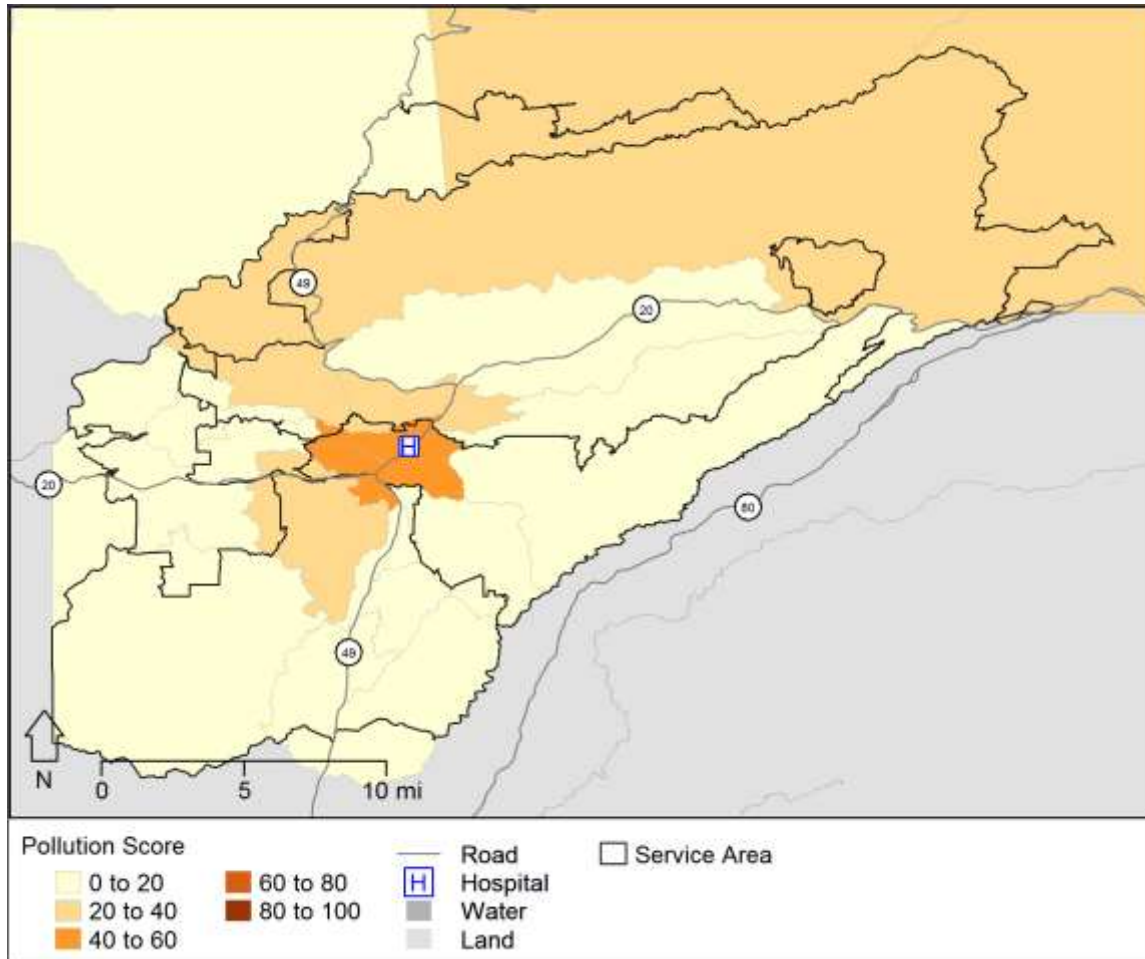
Figure 22: Pollution Burden Score by Census Tracts in the HSA

Figure 22 shows that no ZIP codes fell into the highest quintile, 80-100, or second highest quintile, 60-80, for pollution burden scores. A portion of one ZIP Code, 95945 (Grass Valley) had a pollution burden score in the third highest quintile, 40-60, with very small portions of 95949 (Grass Valley) and 95959 (Nevada City) in that same quintile. The effect of exposure to pollution contributes to the high rates of respiratory illness mentioned previously in this report.

Primary data participants spoke about issues of air quality with the SNMH HSA. One key informant explained:

> *Sometimes the air quality in this community is bad. We have actually poor air quality year around, but particularly of course during fire season. I mean we're going to have smoke that just sits on this community for months on end.* (KI_8)

Social Environment

This assessment included indicators for crime, assault and homicide in the SNMH 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 SNMH 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
Grass Valley	678.08	89.53	584.66	3.89	33.48
Nevada City	505.71	84.83	420.88	-	19.58
Truckee	120.26	11.16	107.24	1.86	24.80
Nevada County Sherriff Department	151.96	41.22	110.58	0.15	21.66
Nevada County	*226.38*	*43.96*	*181.51*	*0.91*	*23.65*

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

Table 27 indicates that major crime rates reported for both Grass Valley and Nevada City jurisdictions are noticeably higher than the Nevada County estimated major crime rate. These jurisdictions also had the highest rates of violent crime and property crime. The highest rate of arson was found in the Grass Valley jurisdiction. Rates for domestic violence crimes in the Grass Valley and Truckee jurisdictions exceeded the county benchmark.

Though many participants spoke about crime and violence in the SNMH HSA, crime and its connection to substance use was a specific finding in the primary data. The following quotes demonstrate the concerns around the topic of crime and substance use:

> *It's not just somebody has a substance abuse problem because they have that problem, they're supporting their habit through criminal behaviors and so that affects the crime rate and that affects people's feelings of safety and security and all that.* (KI_9)

> *Also our community paper, which people really enjoy and has been here for a long time, called The Union, it typically has on the front page some article about either drug bust, local crime related to drugs.* (KI_1)

> *And there's domestic violence issues. They are very lonely. They are very isolated, I am just talking about the sad, the people that I talk to, they are sad. And they have, they are quite often they won't go to a shelter because they have dogs and the dogs are their families. They are isolated from friends and family. There are people that they drink with but…the relationships are not deep and enduring and quite often are fraught with violence, especially violence against women.* (FG_7)

Many key informants and community members' spoke about the impact witnessing violence has on young area residents, resulting in a feeling of trauma. One key informant said, "*It's definitely*

concerning…the majority of girls have experienced early childhood trauma of some sort and so are having mental health issues." (KI_11)

Rates -- ED Visits and Hospitalizations due to Assault

Understanding safety in the SNMH 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 assault (intentionally harming another person) are included in this assessment to gain an understanding of violence in the SNMH HSA. Figure 23 and 24 show ED visits and hospitalizations related to assaults in the area.
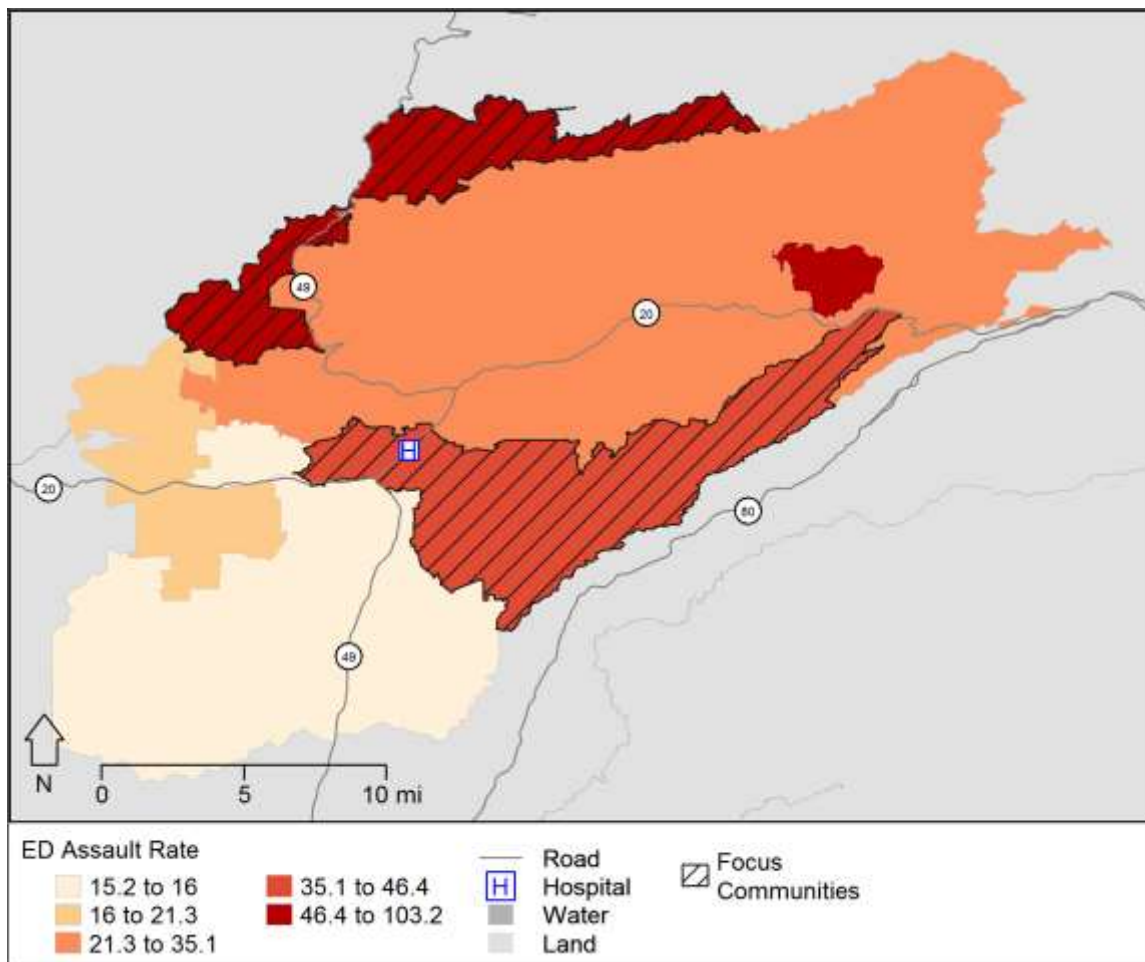
Figure 23: ED Visits Related to Assault

The highest rates of ED visits due to assault were seen in the ZIP codes of 95986 (Washington), 95960 (North San Juan), and 95945 (Grass Valley) at 103.14, 47.37 and 42.12 visits per 10,000 population, respectively. There rates were considerably higher than the county benchmark of 23.35 and the state benchmark of 30.36 ED visits per 10,000.
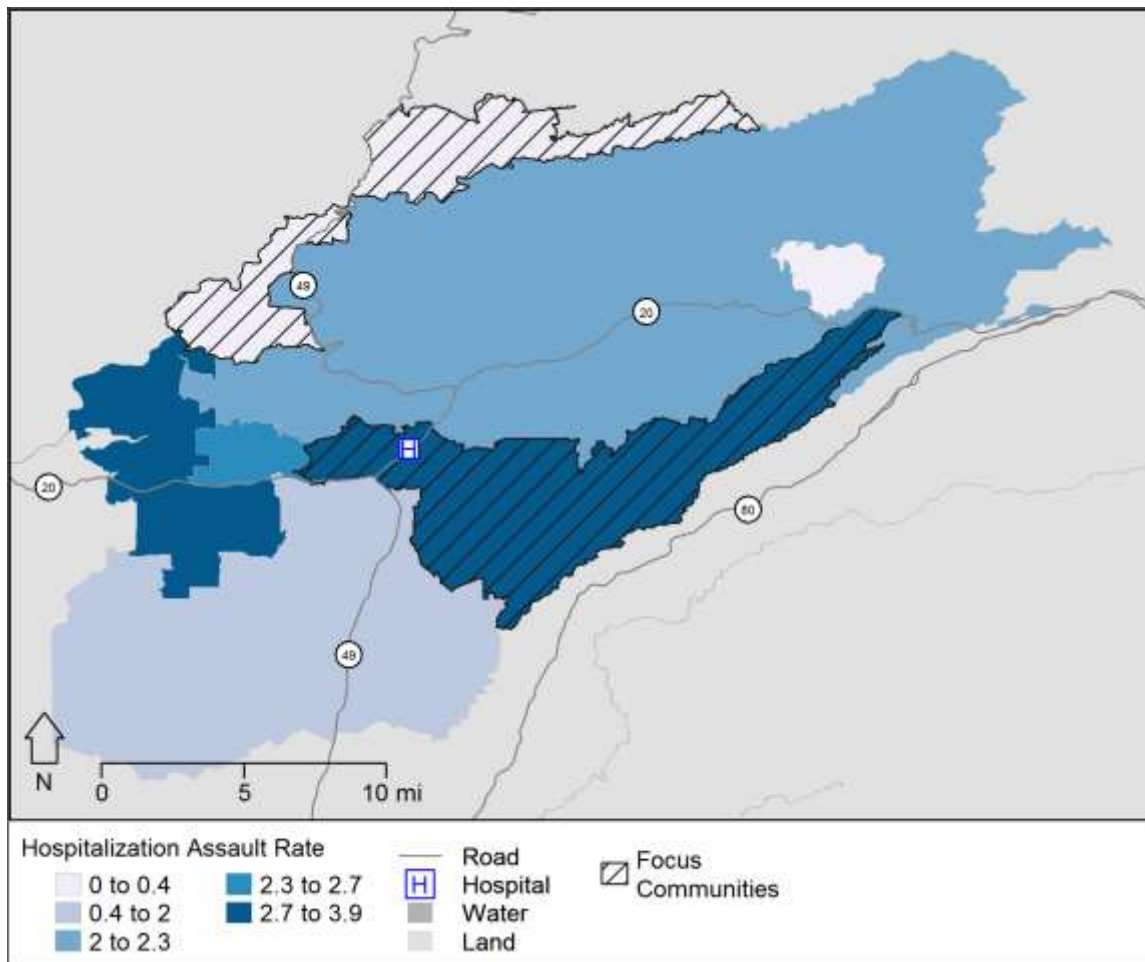
Figure 24: Hospitalization Related to Assault

Four of the seven SNMH HSA ZIP codes exceeded the county benchmark of 2.10 visits per 10,000 population for hospitalizations due to assault. The Focus Community of 95945 (Grass Valley) had the highest rates of hospitalizations due to assault at 3.85 visits per 10,000, followed by 95946 (Penn Valley) at 2.72 visits per 10,000 population.

Rate -- Mortality due to Homicide
Data from the California Department of Public Health on the mortality rate due to homicide collected for 2010-2012 revealed mortality due to homicide was 3.19 deaths per 100,000 population in the SNMH HSA, lower than the state rate of 5.15 deaths per 100,000 population.

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	95945*	11.4	$42,828
	95946	11.3	$60,750
	95949	11.2	$62,224
	95959	10.5	$63,132
	95960*	18.3	$29,773
	95975	4.6	$49,688
	95986	-	-
	Nevada County	*10.7*	*$57,353*
	CA State	*11.5*	*$61,094*

Source: Census, 2013 *Indicates Focus Community

As Table 28 shows, four of the SNMH HSA ZIP codes exceeded the county unemployment rate. The highest rate of unemployment was seen in Focus Community 95960 (North San Juan), where 18.3% of residents were unemployed. Three of the ZIP codes had a median annual income below that of the county. By far, ZIP code 95960 (North San Juan) had the lowest median annual income, at nearly $15,000 less than the median annual income for Nevada County.

Many participants spoke about the lack of employment opportunities in Nevada County and how that affects access to healthcare. One participant said, "*We have a high unemployment rate. And that's the population that will either overuse the ER or go without care.*" (KI_13)

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 Under 100% Federal Poverty Level	Percent Families with Children in Poverty	Percent Single Female Headed Households (FHH) in Poverty	Percent Elderly Households in Poverty
Poverty	95945*	18.79	24.3	33.9	3.3
	95946	10	17.9	60.3	3.8
	95949	6.98	6.4	10.6	1.42
	95959	12.85	15.8	25.8	1.33
	95960*	31.73	27.5	51.2	7.5
	95975	2.34	3.4	17.9	2.03
	95986	100	-	-	52.77
	Nevada County	11.97	14.7	28.4	2.06
	CA State	*15.9*	*17.8*	*36.8*	*2.3*

Source: Census, 2013 *Indicates Focus Community

Four of the seven SNMH HSA ZIP codes had a higher percentage of households below the federal poverty level (FPL), relative to the county benchmark. The highest rates of poverty among households were in ZIP codes 95986 (Washington) and 95960 (North San Juan), where 100% and 31.73% of

households are in poverty. The highest percentage of families with children living in poverty was seen in Focus Community 95960 (North San Juan), where 27.5% of families are living in poverty. Three ZIP codes had elevated rates of poverty among single female-headed households, with the highest rates in ZIP codes 95946 (Penn Valley) and 95960 (North San Juan). In these communities, more than 50% of single female-headed households are living in poverty. Within the SNMH HSA, four ZIP codes had higher rates of poverty among elderly households, with the highest rate in ZIP code 95986 (Washington), where more than 50% of the elderly are living in poverty.

Many key informants and community members spoke about poverty and its influence in many areas of healthy living, including access to quality health care, healthy foods, transportation, stable housing etc. The following quotes from key informants demonstrate the issues surrounding poverty in the SNMH HSA:

> *But we also have a good number of parents who are working poor, they are working very hard, sometimes — oftentimes multiple jobs and they still are in poverty. It's hard here, the cost of living is very high and the average pay rate is very low, so it's a huge disparity here.* (KI_11)

> *This used to be an affordable, blue-collar community, now it's not affordable at all. Rent and food prices have gone up. This can be especially challenging for all the seniors in Nevada County who don't have a retirement fund and are on a fixed income or SSI.* (FG_3)

> *We do have generational poverty here…families who've been here for certainly usually two, or three, or four, or five generations who have just historically lived in poverty. Many of the people who have families that have lived in this community a long time came as miners and it was a hard lifestyle and not a very lucrative lifestyle. For some families that has just been passed on from generation to generation even though mining is not a big industry here anymore.* (KI_8)

In addition, many participants spoke at length about the connection between poverty and homelessness, especially for individuals with substance use and mental health issues. One key informant explained, "*We have a significant homeless population…The weather is good, it's pretty, you can hide in the woods and we are pretty close to like Safeway. (KI_1)* Another key informant stated, "*Many are one paycheck away from being homeless or not being able to pay a bill.*" (KI_3)
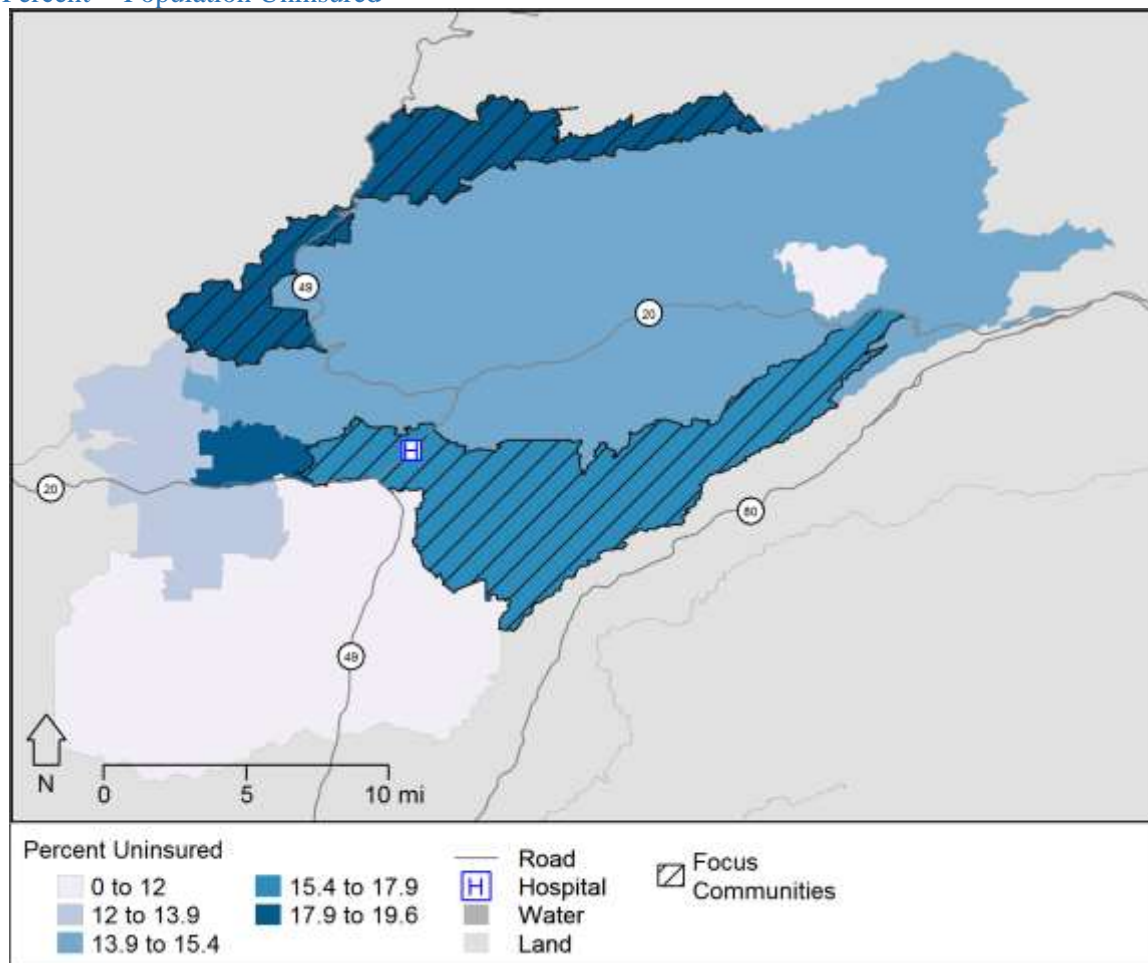
Figure 25: Percent Uninsured by ZIP Code in the SNMH HSA

The percent of population without insurance for Nevada County was 14.8%, while the state level was 17.8%. The most notable ZIP codes include 95975 (Rough and Ready) and 95960 (North San Juan) at 19.6% and 18.4% respectively. 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 SNMH 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 74.3 for Nevada County in 2012, lower than the state rate of 77.2 physicians per 100,000 population.

Health Professional Shortage Areas (HPSAs) are designated by the US 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]
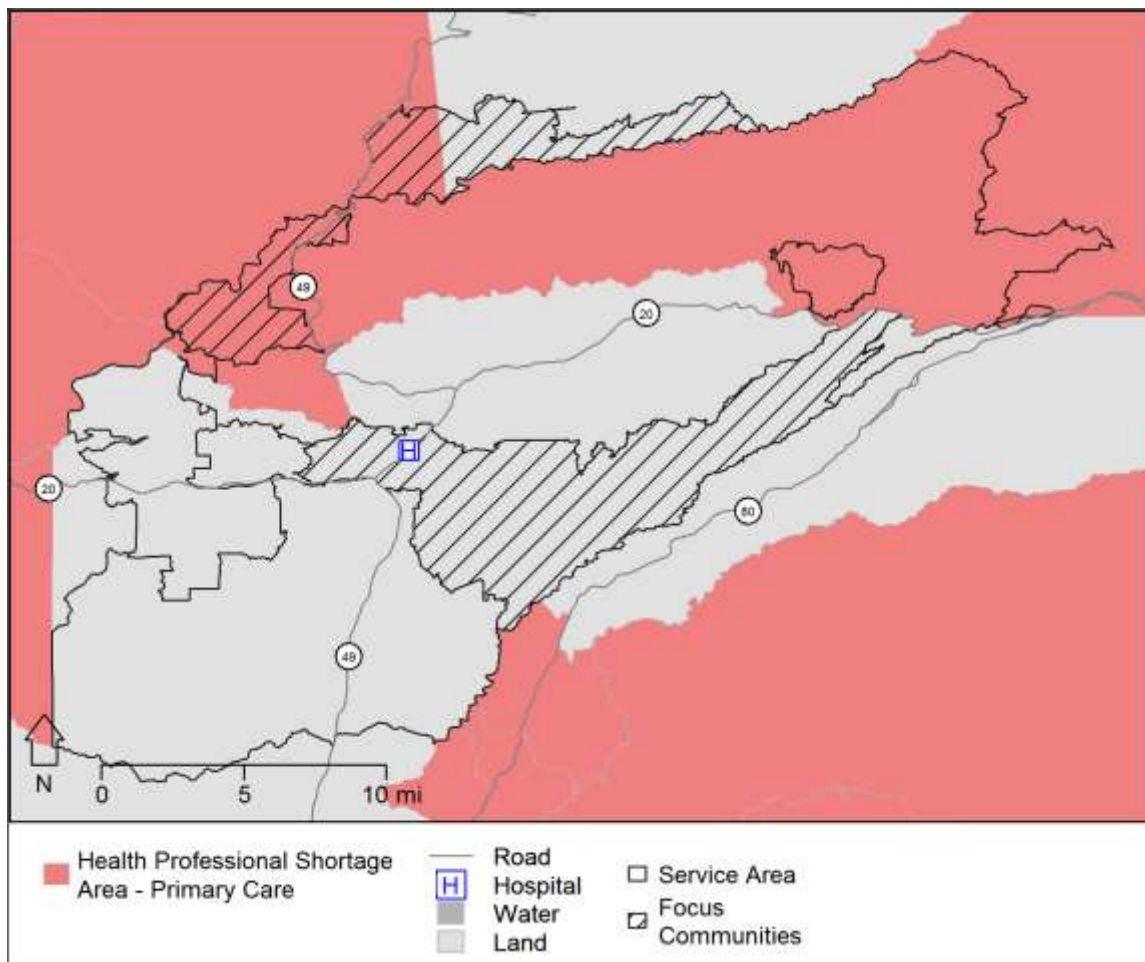
Figure 26: Primary Care HPSA in the SNMH HSA

Four of the SNMH HSA ZIP codes had portions of their ZIP codes that were designated HPSAs for Primary Care. The ZIP codes with this designation were 95946 (Penn Valley), 95959 (Nevada City), 95975 (Rough and Ready), and 95986 (Washington).

One of the biggest findings from the primary data was the need for improved access to care. It was the second prioritized health need for the SNMH HSA, and all 20 primary data sources talked about issues surrounding access to care. There was copious discussion about limited primary care provider access for those on Medi-Cal and overutilization of the Emergency Department due to long wait times. One key informant stated:

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[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

A lot of the clinics are really impacted and cannot see these patients for several months even if it is an emergency. So there is definitely a lack of access to care and there's definitely a lack of understanding on how to navigate that or what to do next. (FG_6)

Lack of capacity is also related to recruitment of providers to Nevada County, as one service provider pointed out, "*We are having trouble recruiting primary care providers and we used to be able to get nurse practitioners. Now we're having trouble recruiting those as well.*" (KI_3)

The topic of specialty care was also discussed at length by participants. Low-income residents on Medi-Cal often have to travel outside of the SNMH HSA to see a specialist, as one service provider explains here:

> *I think specialty care is the biggest access barrier that we have. The few providers in town who do contract with the managed care products are booked out…We have patients who have to drive as far as San Francisco or Chico and if transportation is an issue they are not going to get the services so what that does is it forces our primary care providers to basically operate out of their scope and try to maintain their health without specialty care access.* (KI_13)

Additionally, there was frequent discussion about the need for culturally sensitive care for vulnerable populations. One service provider pointed out, "*There are inappropriate and inadequate cultural and linguistic services, and that creates a huge issue.*" (FG_5) Participants pointed out that there can be disparities in the quality of care, especially for low-income residents who are on Medi-Cal. Specific populations of concern were individuals experiencing homelessness, people with disabilities, older adults, and individuals identifying as LGBTQ.

Participants also repeatedly brought up the fact that transportation is a major barrier for accessing care, especially for residents in the rural and remote areas of the SNMH HSA. One service provider said, "*Bring the services here. Personally I would like to go back to house calls, I mean people laugh and for some reason it's become unthinkable, but why?*" (FG_7)

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	95945*	73.58	6.39
	95946	77.84	6.63
	95949	76.42	6.48
	95959	78.73	6.25
	95960*	77.60	6.65
	95975	80.00	6.60
	95986	-	-
	SNMH HSA	76.18	6.14
	Nevada County	*75.00*	*5.50*
	CA State	*83.6*	*6.8*

Source: CDPH, 2010-2012 *Indicates Focus Community

Data revealed that a lower percentage of mothers received prenatal care in the first trimester in Nevada County relative to the state benchmark. Focus Community 95945 (Grass Valley) had the lowest rate of prenatal care utilization, below both the state and county benchmarks. Six of the SNMH HSA ZIP codes had a higher percentage of low birth weight babies in comparison to the county benchmark. Focus Community 95960 (North San Juan) had the highest rate of low birth weight, with 6.65 low birth weight babies per 1,000 live births.

Participants spoke about the access to prenatal care for low-income women within the SNMH HSA. One key informant explained:

> "*We also have somewhat late access to prenatal care. And it's particularly true on this side of the county…it's worse for the women who use Medi-Cal to get prenatal care. So it's a poverty disparity.*" (KI_9)

Rate -- Federally Qualified Health Centers per 100,000 Population

Data from the US Department of Health and Human Services for 2015 indicated that the rate of Federally Qualified Health Centers (FQHC) in the SNMH HSA was 5.41 FQHCs per 100,000, above 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 Nevada County was 71.79 events per 10,000 population versus 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 193 for Nevada County, above the state rate of 157 per 100,000 population.

Area -- Health Professional Shortage Area- Mental Health

Figure 27 displays areas in the SNMH HSA that are HPSAs for mental health providers. As the Figure shows, all seven ZIP codes fall within a designated HPSA for mental health.
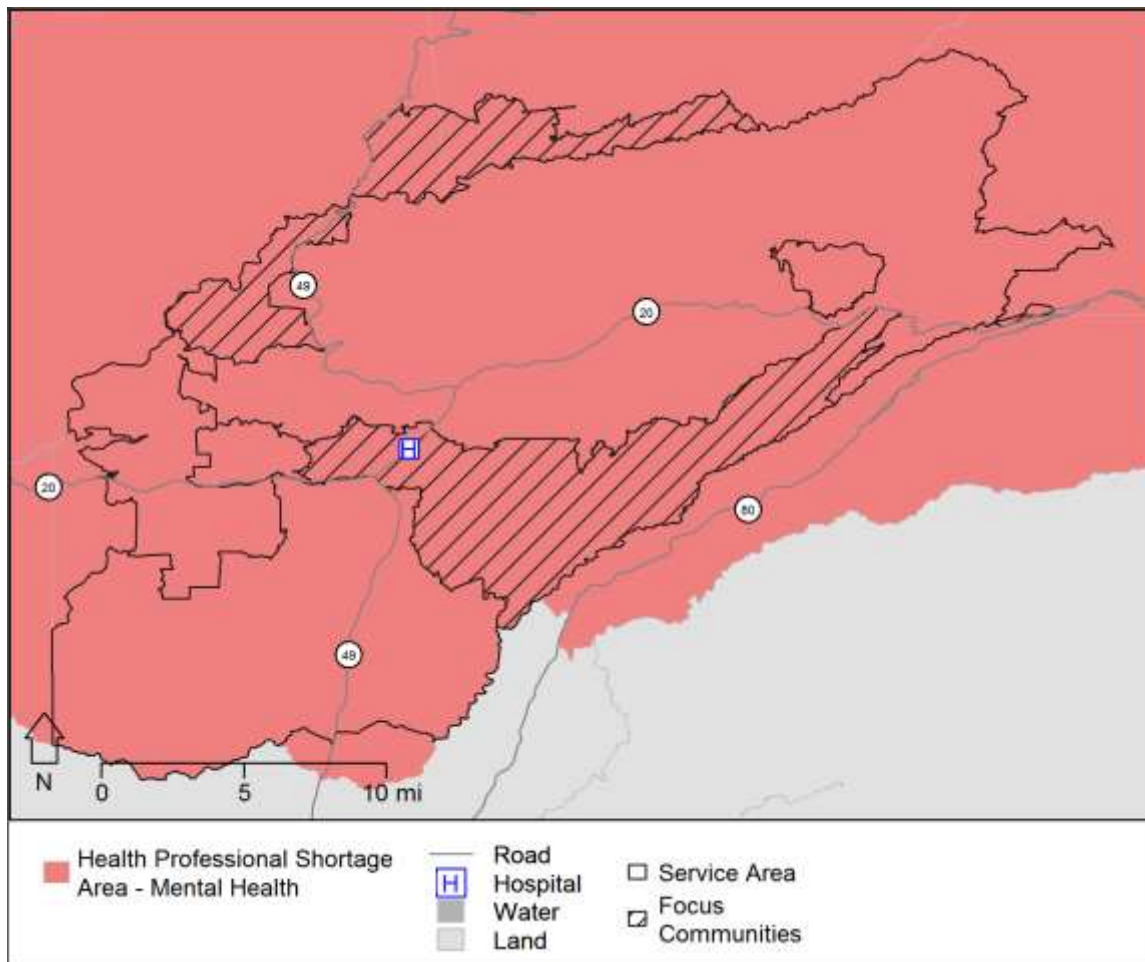
Figure 27: Mental Health HPSA in the SNMH HSA

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 81.5 for Nevada County, above the state rate of 77.5 per 100,000 population.

Area -- Health Professional Shortage Area- Dental Health

Figure 28 displays areas in the SNMH HSA that are HPSAs for dental health providers. One ZIP code, 95060 (North San Juan), falls within a designated HPSA for dental health.

Key informants and community members mentioned dental issues as a health concern. Many participants mentioned the need for access to dental care, particularly to dentists who accept Medi-Cal. Many community members live without a full mouth of teeth, providing a barrier to eating crunchy fruits and vegetables, effecting employability and overall quality of life.
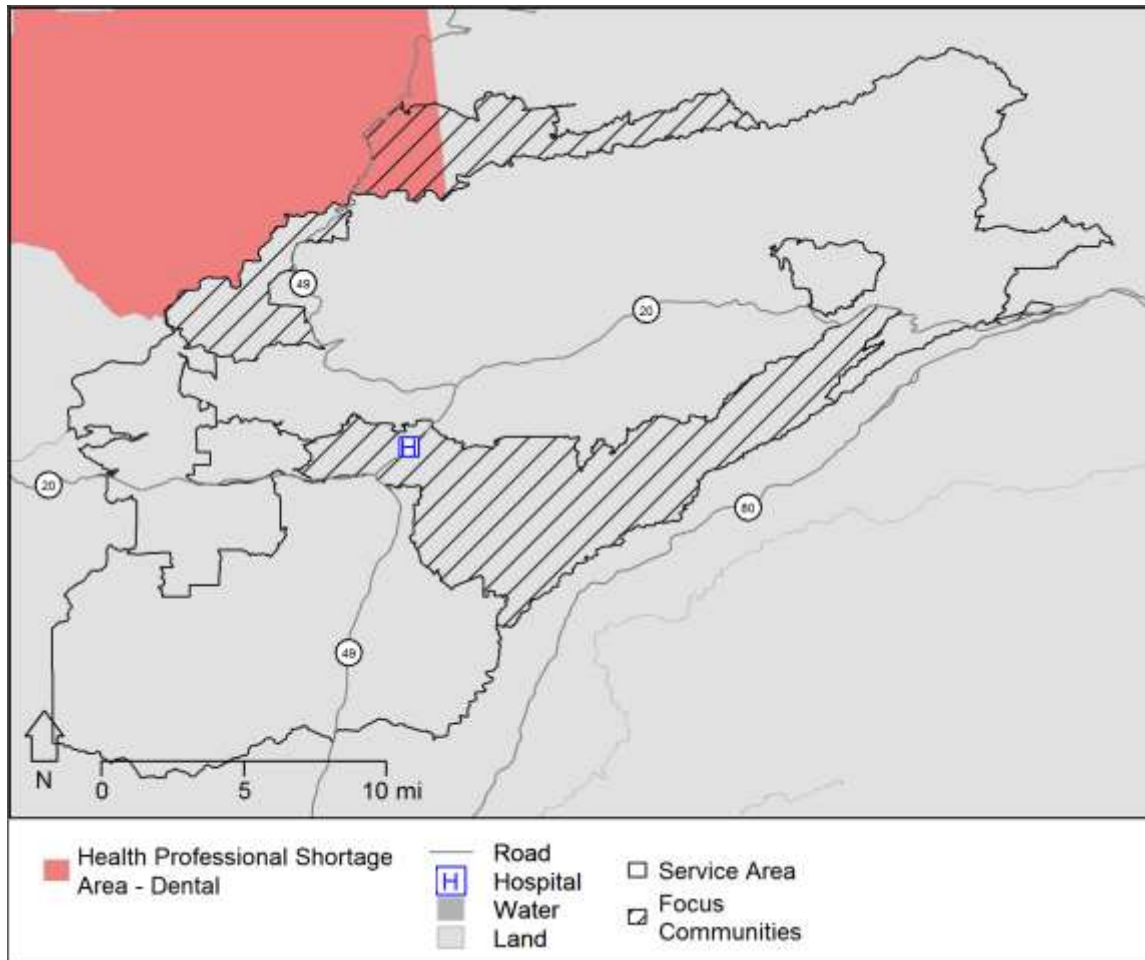
Figure 28: Dental Health HPSA in the HSA

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 Nevada County was 49.4% drastically below the state percent at 80.4%. Rates by race and ethnicity showed that 81.2% of Whites graduate in four years compared to 13.5% of Blacks, 15.1% of Hispanics, 56.3% of Asians and 50.0% of non-Hispanic others. Both key informants and community members stressed the importance of access to quality education for residents of the SNMH HSA.

There were several sources that acknowledged the link between educational attainment and the substance abuse problem that exists within the SNMH HSA. One key informant explained, *We have a major, major problem and I think its alcohol, tobacco, and other drugs. It's destroying our academic world."* (KI_10)
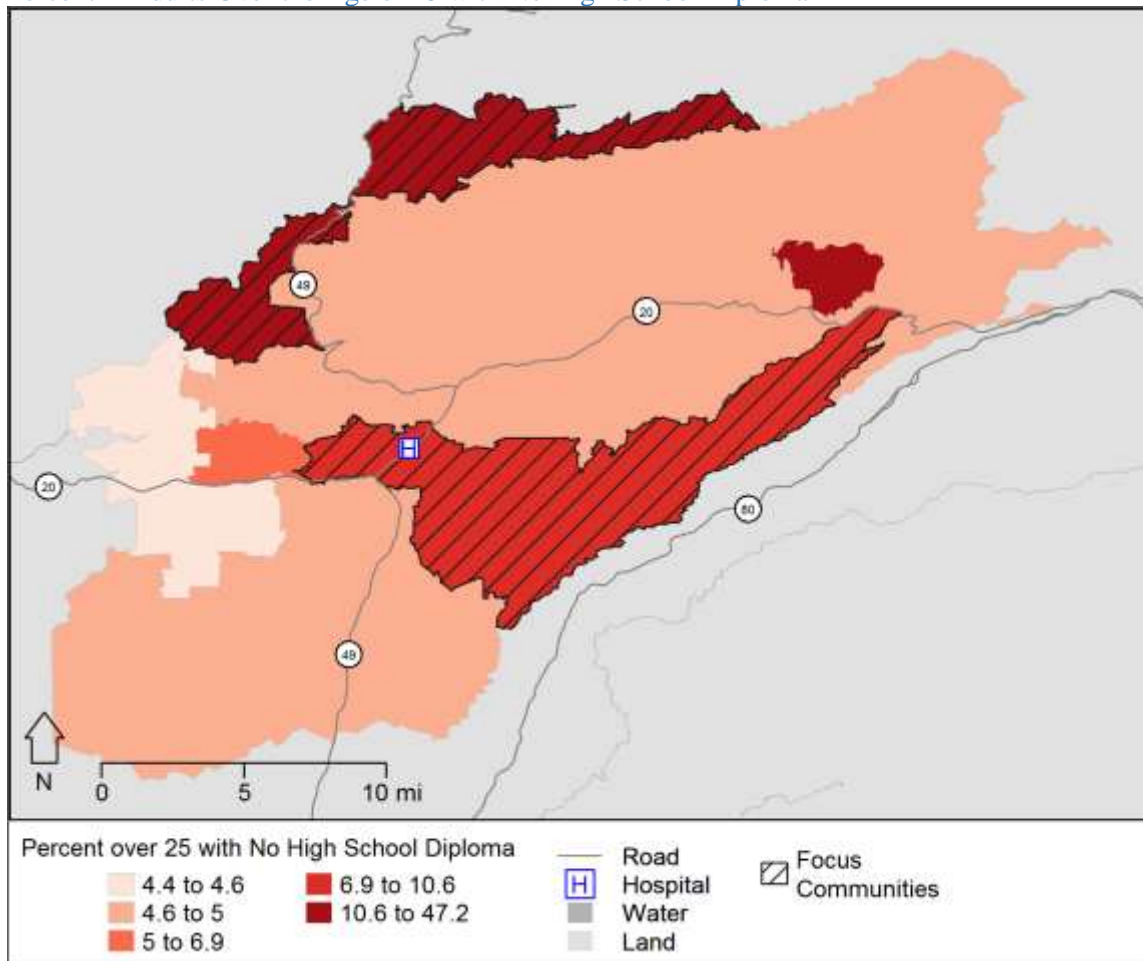
Figure 29: Percent Over 25 Years Old with No High School Diploma

The percent of residents with no high school diploma for Nevada County was 5.7% and 18.8% for the state. Three of the seven ZIP codes had a higher percentage of residents without a diploma than the county benchmark. The highest percent was in 95986 (Washington) at 47.2%, more than five times the county percent and over double the state percent. ZIP code 95960 (North San Juan) was 11.2%, nearly double the county percent.

Percent -- Non-proficient Reading Level in Fourth Grade

Data from the California Department of Education for 2012-2014 indicated that 36.0% of 4th graders in Nevada County are not proficient in reading at the 4th grade level, the same as the state benchmark of 36.0%. Reading proficiency in fourth grade is important because it is linked to poverty, unemployment and barriers to healthcare access. The percent of fourth grade reading proficiency differs significantly by race and ethnicity. While 35.1% of White students were not proficient, 41.7% of Hispanic/Latino students, and 55.6% of Native American/Alaskan Native students were not proficient.

Percent -- 3 and 4 Year Olds Enrolled in Preschool

Data from the US Census Bureau for 2009-2013 indicated that 64.0% of 3 and 4 year olds in the SNMH HSA are in preschool, above the state benchmark of 49.1%. This data is important as access to early education is a social determinant of health.

The rate of suspensions as reported by the California Department of Education for Nevada County was 5.38 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 lunch.

Percent -- Population on Public Health Insurance
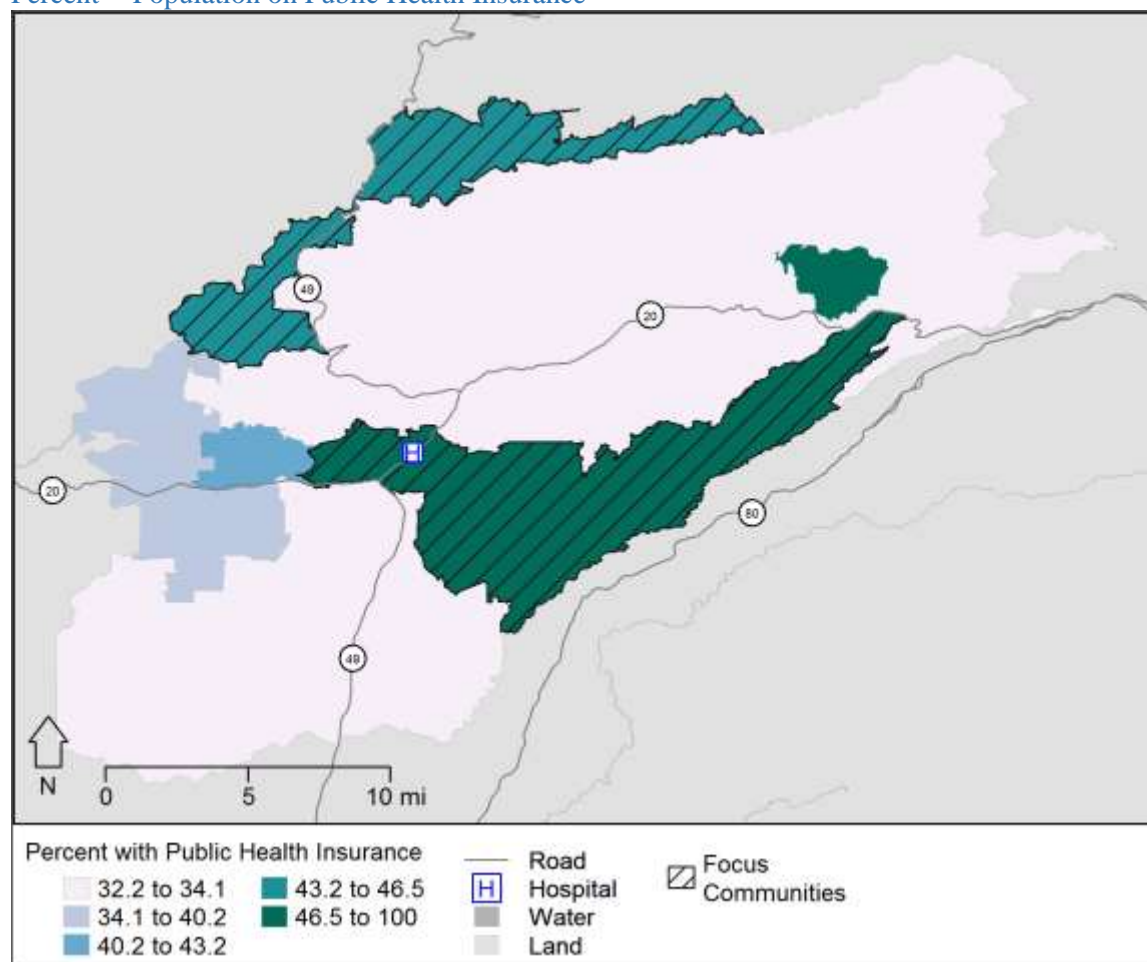
Figure 30: Percent of Population on Public Health Insurance

Data on the percent of residents with public insurance showed clear economic and access disparities. The ZIP code 95986 (Washington) had the highest percentage at 100%, drastically higher than the Nevada County percent of 34.7% and the state at 29.5%. The ZIP code of 95945 (Grass Valley) also had a high percentage at 46.7%.

78

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 SNMH HSA, 16.9% of residents receive Medicaid, below the state percent at 23.4%.

Percent -- Population Receiving Public Assistance
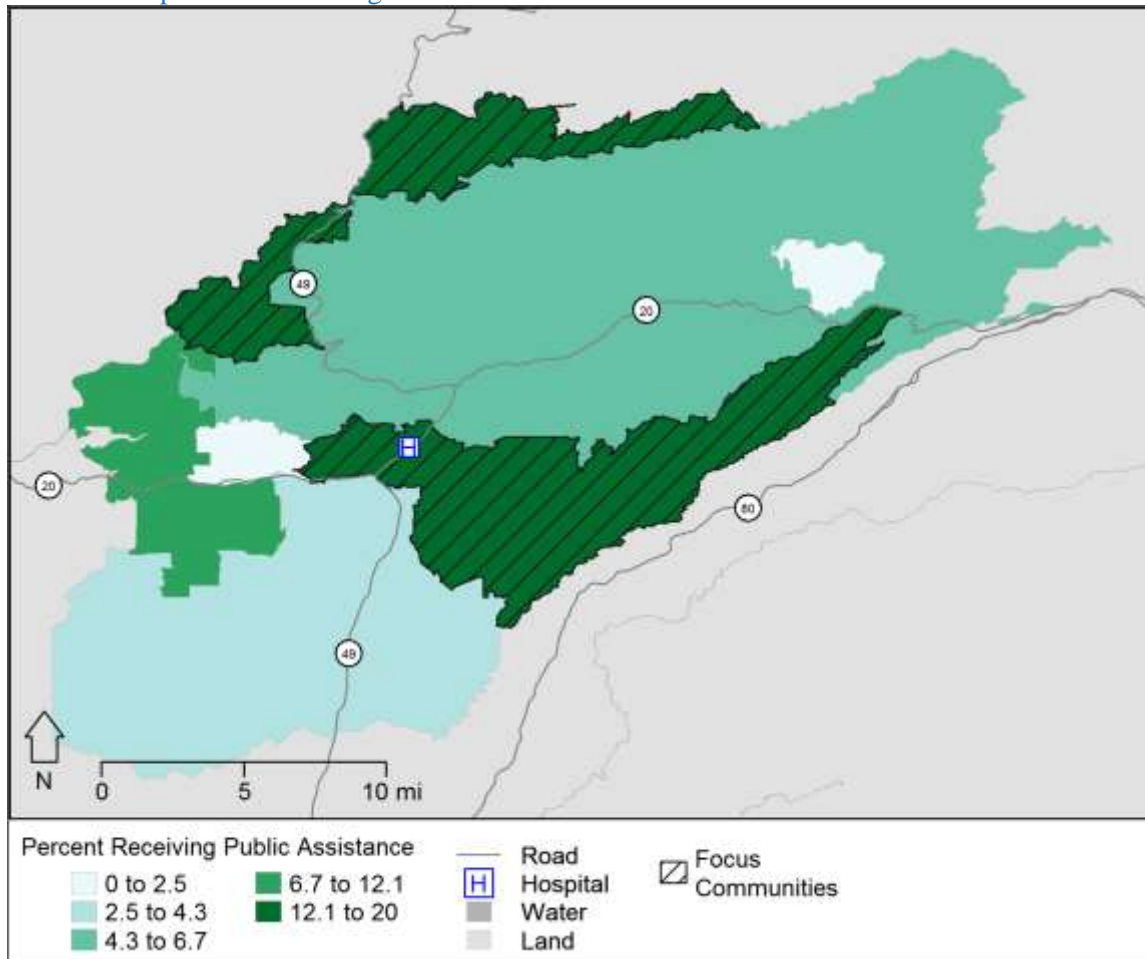
Figure 31: Percent of Population Receiving Public Assistance

The percent of population receiving public assistance varied greatly across the SNMH HSA, with two of the seven ZIP codes showing higher percentages than the county and state percent, at 7.7% and 12.1% respectively. The Focus Communities of 95960 (North San Juan) and 95945 (Grass Valley) had percentages of 20.0% and 13.2%, respectively.

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

Data from the National Center for Education Statistics in 2013-2014 indicated that 39.4% of school age children in the SNMH HSA are eligible for Free and Reduced Priced Lunch, which is 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 SNMH HSA in prioritized order. The process and method for the determination of significant health needs and the prioritization criteria follows. Each prioritized significant health needs is then detailed further with the quantitative and qualitative data that supports its inclusion.

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

Process and Methods for Prioritizing Significant Health Needs (SHNs)

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 SNMH 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 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 SNMH 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 SNMH 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 SNMH 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 SNMH 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 benchmark by any amount as presented in Appendix C.

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 analysis was 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 Sierra Nevada Memorial Hospital

Table 31 displays the full results of data synthesis to identify and prioritize the significant health needs for SNMH. 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

Sierra Nevada Memorial Hospital (N=20)					
	RANK	**Significant Health Needs**	**QUANT**	**QUAL**	**IMPORTANCE**
			40%	50%	
Tier 2	1	Behavioral Health	83%	100%	85%
	2	Access to Care	43%	67%	60%
	3	Disease Prevention/Management	54%	83%	30%
	4	Transport	67%	94%	15%
	5	Safe Communities	69%	94%	10%
Tier 1	6	Active Living and Healthy Eating	38%	56%	20%
	7	Basic Needs	24%	100%	10%
	8	Pollution Free Communities	61%	39%	0%

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. 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 - Smoking prevalence - Lung Cancer -- ED visits - Lung Cancer incidence - Substance abuse -- ED visits - Substance abuse- Hospitalizations - CLRD -- Mortality - COPD – ED visits - COPD – Hospitalizations - Life expectancy at birth - Liquor Store Access - HPSA – Mental Health - Mental health -- ED visits - Mental health -- hospitalizations - Self-Inflicted Injury – ED visits - Self-Inflicted Injury – hospitalizations - Suicide – Mortality - Alzheimer's Disease – Mortality	- Significant substance use in the SNMH HSA, including: marijuana and tobacco, alcohol, opiate prescription drugs, methamphetamines, heroin - The marijuana cultivation industry in the county is linked to substance use by area residents, particularly youth - Those with mental health issues may use substances to cope with mental health symptoms - Barriers in accessing mental health care - Lack of providers who accept Medi-Cal - Long wait times - Lack of transportation, especially for rural residents - Isolation, depression and anxiety are issues for many residents, particularly youth and older adults - Suicide is a concern within the SNMH HSA - There is a need for social engagement and support for those with mental health and substance use issues - There is a need for culturally sensitive mental health and substance use care, especially for older adults, youth and those with disabilities - Homelessness was discussed as a significant issue. It was suggested that mental health and substance use issues may be connected to homelessness - There is a huge gap of assessment and services for older adults with Alzheimer's and dementia. Caregiver mental health is also a concern - Those struggling with mental health and substance use issues have challenges meeting basic needs such as housing, gainful employment, food and safety - Concerns that area parks, open spaces, and other public places are not safe to utilize due to safety concerns related to individuals using illicit drugs

2. 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**
- Percent of population on public insurance - Soda expenditures - Access to Primary Care - Dental Issues – ED visits - Dental Issues – hospitalizations - HPSA – Primary Care - HPSA – Dental - Infant mortality rate - Percent receiving prenatal care	- The Affordable Care Act insured low income communities but the coverage provided doesn't equal access to care - Lack of providers (primary care, specialists, and dentists), especially for low SES population - Medi-Cal providers are hard to recruit and retain due to low reimbursement rates - Long wait times to be seen lead to emergency departments being overwhelmed and over-utilized - Prescription drugs can be cost prohibitive - Culturally sensitive care is important for vulnerable populations (i.e. homeless, seniors, individuals with disabilities, LGBTQ, racial/ethnic groups) - Language barriers between providers and patients limit access to care - Undocumented residents experience severe barriers in accessing care - Need for more health literacy and patient navigation services - Need for better care coordination between social and health services - Transportation to health care is challenging for many individuals, especially for low-income residents, those in very rural areas of the county, older adults and individuals with disabilities

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, 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).

Quantitative Indicators	Qualitative Themes
● Alcohol consumption ● Alcohol expenditures ● Liquor Store Access ● Tobacco expenditures ● Smoking prevalence ● Heart Disease Prevalence ● Asthma – hospitalizations ● All cause cancer – mortality ● Lung cancer – ED visits ● Lung cancer – incidence ● Physical inactivity - youth ● Park Access ● Fruit and vegetable expenditures ● Overweight – Youth ● Colorectal cancer – ED visits ● Colorectal cancer - Hospitalizations ● Colorectal cancer – incidence ● USDA defined food desert ● High Blood Pressure - Unmanaged ● Breast cancer – ED visits ● Breast cancer – hospitalizations ● Breast cancer – incidence ● Stroke – mortality ● Hypertension – mortality ● Heart disease – mortality ● Lung cancer – hospitalizations ● Prostate cancer – ED visits ● Prostate cancer - Hospitalizations ● Prostate cancer – incidence ● STD – No HIV Screening	● Cardiovascular disease and stroke were the most commonly mentioned conditions in the community ● There were significant concerns with smoking tobacco and marijuana and the use of other tobacco and marijuana products, especially related to asthma and COPD ● Breast, stomach, lung, skin, prostate, and cervical cancers were discussed. Residents were concerned about environmental toxins being related to the development of cancer ● Sexually transmitted infections (STI) were discussed including HIV/AIDS and Hepatitis C. There is concern about the stigma associated with contracting and/or living with an STI ● Transportation was discussed as a significant barrier related to all conditions presented above

4. 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 ● Commuting to work by walking ● Commuting to work alone ● Population with a disability	● Public transportation is expensive, difficult to access, and not always reliable ● Rural area residents, older adults, youth, and individuals with disabilities struggle significantly with access to public transportation ● Residents do not always feel safe on public transportation ● Many residents live far from their jobs and may not have access to a car. Some residents rely on hitchhiking

5. 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 - youth ● Alcohol consumption ● Alcohol expenditures ● Liquor Store Access ● Substance Abuse – ED visits ● Substance Abuse – hospitalizations ● Motor Vehicle Accident - mortality ● Domestic violence rates ● Major crime rates ● Unintentional injuries – ED visits ● Unintentional injuries – hospitalizations	● Alcohol and other substance abuse affect the community and contribute to crime, violence and mental health issues ● Domestic violence and sexual assault were discussed. There are limited resources and shelter beds for victims of domestic violence. Domestic violence is thought to be connected to child abuse/neglect and other family violence issues ● Child abuse and trauma are significant issues within the SNMH HSA

6. 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 -- youth - Fruit and vegetable expenditures - Obesity – youth - Colorectal cancer – ED visits - Colorectal cancer - Hospitalizations - Colorectal cancer – incidence - USDA defined food desert - Park Access - Commuting to work – walking - Soda expenditures - Osteoporosis – hospitalizations	- Barriers related to healthy eating include: - Lack of access to healthy affordable foods - Abundance of unhealthy food options - Perceived to be cost prohibitive, especially when feeding a family - Lack of time for buying and preparing nutritionally dense food - Lack of motivation related to competing priorities - Barriers related to active living include: - Lack of gyms and recreation facilities - Lack of transportation to trails or open spaces - Lack of motivation to exercise considering daily stressors - Lack of PE classes in schools - Extracurricular sports for youth can be cost prohibitive - Safety concerns due to crime and/or traffic - Need for improved urban design/built environment when planning new communities - Lack of sidewalks or bike lanes in some areas - Lack of proper lighting on some streets - Need for health education related to physical exercise and healthy eating, especially in the schools

7. 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
- Percent of population on public insurance - Life expectancy at birth - High school graduation rate - School suspensions - Housing vacancy	- Employment opportunities are lacking, especially for full time jobs with a living wage and benefits - Affordable housing is lacking. There is a long wait time to get on the subsidized housing list - Many residents are "working poor" who don't qualify for assistance programs yet can't afford services - Homelessness is of significant concern, especially related to homeless individuals accessing health services for substance use and mental health issues - There is a concern about the quality of education, and how the drug culture and substance abuse are affecting educational outcomes - Adults without a GED/high school diploma struggle with economic security - Many residents struggle with accessing food, especially homeless individuals. Residents struggle with the affordability of healthy food, especially in rural parts of the county - Food insecurity is exacerbated by lack of reliable or affordable transportation for rural residents to food distribution sites - Community members worry about the shame and stigma associated with accessing food closets and banks

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 – youth - Obesity - youth - Tobacco expenditures - Smoking rate - Asthma – hospitalizations - All-cause Cancer – mortality - Road Network Density - Population living near a transit stop - CLRD – mortality - COPD – ED visits - COPD – hospitalizations	- Asthma, COPD and respiratory allergies are major issues for area residents - Residents are concerned about the consumption of tobacco and marijuana in communal living environments - Residents are concerned about the health impacts of smoke from wood burning stoves and wildfires

RESOURCES POTENTIALLY AVAILABLE TO MEET SIGNIFICANT HEALTH NEEDS

Seventy-one resources were identified in the SNMH HSA. The method included starting with the list of resources from the 2013 Sierra Nevada Memorial's 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. Access to Behavioral Health Services	30
2. Access to High Quality Health Care and Services	30
3. Disease Prevention, Management and Treatment	15
4. Affordable and Accessible Transportation	3
5. Safe, Crime and Violence Free Communities	18
6. Active Living and Healthy Eating	17
7. Basic Needs (Food Security, Housing, Economic Security, Education)	41
8. Pollution-Free Living and Work Environments	3

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 2013 CHNA

Sierra Nevada Memorial Hospital is experiencing positive outcomes for programs and initiatives addressing priority health issues identified in the preceding 2013 Community Health Needs Assessment (CHNA). These programs and initiatives continue to align with many of the priority health needs identified in the new 2016 CHNA and will continue to be supported by the hospital. They are highlighted below, within the newly defined 2016 priority health need categories. FY 2015 Dignity Health Community Grant collaborations are denoted by *. All outcomes are reflective from FY 2013 through FY 2015 unless otherwise noted.

Access to Behavioral Health Services

Mental Health Crisis Support Partnership-A unique and innovative partnership which began in 2013 continues to evolve between the hospital and Nevada County to address the urgent need for mental health services and the steady increase in residents admitting to the emergency department in crisis. A County contracted mental health crisis worker is stationed in the hospital's emergency department to support patients in crisis. Specially trained on-call peer counselors are available to support patient needs around the clock.
Outcomes:
- 4123 crisis evaluations occurred in the emergency department
- Patients with acute psychiatric issues received better quality of care in a more timely manner

Tele-Psychiatric Care- The hospital implemented the use of tele-psychiatry in FY 2014 in its emergency department to allow patients to access psychiatric services during a crisis day or night. Psychiatrists are able to provide early evaluation and psychiatric intervention via remote consultations with patients, improving access to timely quality care.
Outcomes:
- 42 patients received tele-psychiatry consults
Expense: $10,139

Integrated Care Coordination for Family Wellness*- Developing through Dignity Health Community Grants Program, this partnership was developed to increase access to primary, mental health, substance use, and preventative health care and to integrate and coordinate these services for vulnerable populations. The partners including FREED Center for Independent Living, Community Recovery Resources (CoRR) and Western Sierra Medical Clinic (WSMC) have undergone cross- training to understand each other's services and developed a process for seamless referrals. Western Sierra Medical Clinic has established a clinic co-located at Community Recovery Resources. A FREED navigator is currently stationed on the hospital campus to work directly with hospital care coordinators.
Outcomes:
- 679 patients have received either patient navigation or Care Transition Intervention (CTI) services
  - On average, less than 8% of patients who received CTI services were readmitted.
- 494 patients received primary care services at CoRR by WSMC
- 51 patients received direct patient navigation to CoRR services from WSMC or FREED
Expense: $190,000

Classes Addressing Mental Health- The hospital continues to develop and offer community classes that address mental health, coping with stress, and navigating life changes, through the hospital's Wellness Center. These programs are offered at low or no cost to attendees and do not realize a profit.
Outcomes:

- 345 Community members have attended classes

Access to High Quality Health Care and Services

Western Sierra Medical Clinic Collaboration - The hospital works closely with the region's Federally Qualified Health Center, Western Sierra Medical Clinic, to increase access to care. Until moving to their new location, the clinic had been able to operate a second site by utilizing hospital-owned facilities in the community of Grass Valley at a significantly reduced cost. The positive impact of this relationship was highlighted by participants in the 2013 Community Health Needs Assessment who noted they received follow-up primary care appointments at the clinic within 72 hours of being released from the hospital or emergency department.
Expense: $43,857

Integrated Care Coordination for Family Wellness* - Program description and outcome data is highlighted under Access to Behavioral Health Services.

Penn Valley Satellite Lab and X-Ray Clinic- Medi-Cal-insured and indigent residents received services at the hospital's Satellite Lab and X-Ray Clinic located in the underserved area of Penn Valley/Rough and Ready, filling a major gap in services in this part of the region. This program started in FY 2014 and outcomes reflect FY 2014 and FY 2015
Outcome:
- 476 patients received services
Expense: $16,626

Cancer Nurse Navigator - Nurse Navigators at the hospital are effectively supporting the need for specialized care for individuals with breast and lung cancer, and victims of stroke. The navigation program has continued to expand to meet a growing demand for services. Patients receive education on treatment options, as well as referrals for follow-up care and education. Navigation services target underserved populations that otherwise would not have access to care. Outcomes are reflective of FY 2014 and FY 2015.
Outcomes:
- Persons served: 2,930
Expense: $258,597

Medi-Cal Enrollment Assistance- SNMH has partnered with Nevada County to have a County eligibility worker and financial counselors assist in enrolling eligible individuals into Medi-Cal insurance programs facilitative access to care.
Outcomes:
- Persons served: 4,545
Expense: $99,859

Disease Prevention, Management, and Treatment

Alzheimer's Outreach Program - The hospital's Home Care Department offers an Alzheimer's Outreach Program that serves as a unique community education, resource and support center. A licensed social worker is dedicated to the program, which offers services, including a "Yes I Can" course that teaches caregivers and families how to provide quality care for those with Alzheimer's who are still living at home and a Caregiver Support Group. The program also provides education and caregiver support via home visits and personal consultations, and links those that need specialized care to important resources, including assisted living/care centers.
Outcomes:

- Persons served: 1,396

Expense: $8,015

Falls Prevention Program - Sierra Nevada Memorial Hospital is fulfilling an important need in the community through its Falls Prevention Program. The program has been offered at the hospital and in the community since 2013 to capture a larger number of participants, and consists of education about fall risk factors and prevention strategies for older adults and caregivers. Participants also learn appropriate exercises for enhanced balance and strength.
Outcomes:
- Persons served: 622

Expense: $4,593

Heart Failure Program - A best practice heart disease intervention model at the hospital provides assistance and support to individuals suffering from heart disease. Heart disease is among the top causes of death in Nevada County, and a major cause for hospitalization. The program offers ongoing educational and clinical support to residents with heart failure, and provides medication monitoring.
Outcomes:
- Persons served: 1,843
- Readmissions in six months following intervention are less than 5%

Expense: $111,444

Diabetes: Take Control! - The active and growing Diabetes: Take Control! program provides education and nutrition counseling to enable residents to better manage diabetes, maintain good health and avoid hospitalization for uncontrolled symptoms. Program workshops follow the evidence-based Stanford University Diabetes Self-Management Program curriculum. The hospital has trained over 12 facilitators to lead workshops, and has trained new program leaders at Western Sierra Medical Clinic to extend the reach of the program.
Outcomes:
- Persons served: 425
- Less than 3% readmission rate in the 90 days following intervention

Hospital expense: $13,833

Support Groups - Hospital-sponsored support groups for cancer, brain injury, stroke and asthma provide complementary resources for medical treatment, and are an opportunity for patients and family members to share their concerns while learning methods for handling difficult situations. Groups are conducted by a trained hospital staff member, and bring people together facing similar issues to share experiences and advice. Benefits include reduced stress, anxiety, loneliness and isolation, improved coping skills and an enhanced understanding of conditions and treatment options.
Outcomes:
- Persons served: 7,453

Expense: $116,101

Classes Addressing Prevention and Health Management - The hospital continues to develop and offer community classes that address prevention and health management through the hospital's Wellness Center. These programs are offered at low or no cost to attendees and do not realize a profit.
Outcomes:
- 736 program attendees

Cancer Screenings - Free Cancer Screenings are offered through the Sierra Nevada Memorial Hospital Community Cancer Center

Outcomes:
- Persons served: 682

Expense: $2,654

Health Fairs - Sierra Nevada Memorial Hospital participates in local free health fairs in the community and offers blood pressure checks, blood glucose tests, balance and strength tests, body fat analysis, tips and information on healthy eating, early detection and disease prevention, and has provided free lab draws.
Outcomes:
- Persons served: 378

Expense: $8,174

Affordable and Accessible Transportation

Taxi Voucher Program - Sierra Nevada provides taxi vouchers to individuals that do not have access to transportation. These vouchers are typically provided to patients that have been to the emergency department, or to inpatients upon discharge from the hospital
Outcomes:
- Persons served: 609

Expense: $11,148

Safe, Crime and Violence Free Communities

Human Trafficking - The initial phase of this initiative launched in FY 2015 with a core emergency response team established and the roll out of the first phase of education and training to hospital clinical staff to increase awareness and improve quality of care for human trafficking victims. The development of a strategic plan that engages community resources is underway partnership with over a variety of nonprofit organizations and law enforcement.

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 in 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: Sierra Nevada Memorial Hospital Board of Directors

Ed Sylvester Retired CEO Engineering Community Representative
Kathy Rappath Community Representative
Michele White Retired Human Resources Management Community Representative
Dale Creighton President, SCO Planning and Engineering Community Representative
Stacy Fore, DDS Local General Dentist
Alex Klistoff, MD Retired Physician
Scott Robertson Community Representative
Monty East Retired Utilities District Manager Current Real Estate Agent
Kevin Vaziri President and CEO Woodland Healthcare
Alan Wong, MD
Katherine A. Medeiros President and CEO Sierra Nevada Memorial Hospital

Appendix B: 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 with 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 code 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[27] were compared to ZCTA boundaries[28]. 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 mortality information associated with these PO Box or unique ZIP codes were then added to the ZCTAs to which they were assigned.

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

[28] 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

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

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 Bureau[29]

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

[29] U.S. Census Bureau. (2015). *2013 American Community Survey 5-year estimates; 2012 American Community Survey 5-year estimates; 2011 American Community Survey 5-year estimates.*. Retrieved February 14, 2015, from American Fact Finder: http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t

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 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	2013 American Community Survey 5-year Estimate Table DP04

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

[30] U.S. Census Bureau. (2013). *2010 Census Summary File 1*. Retrieved February 14, 2013, from American Fact Finder: http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t

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 (less than 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 birthweight, and births with mother's age at delivery under 20. Table 36 consequently also lists the years for which each variable was collected.

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[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 Birthweight 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 zeros.

Chlamydia and gonorrhea incidence data for 2014 were obtained from the County Public Health offices in El Dorado, Nevada, 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. Nevada 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)

Variable	Year	Definition	Reporting Unit	Data Source
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

Variable	Year	Definition	Reporting Unit	Data Source
				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, Behaivoral 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	Annual Cervical Cancer Incidence, Rate per 100,000 Population	County	National Institute of Health, National Cancer Institute, Surveillance, Epidemiology, and End Results Program. State 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.communitycommon

Variable	Year	Definition	Reporting Unit	Data Source
				s.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.org/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-

Variable	Year	Definition	Reporting Unit	Data Source
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

Variable	Year	Definition	Reporting Unit	Data Source
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.communitycommon

Variable	Year	Definition	Reporting Unit	Data Source
				s.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 Consumption (Youth)	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 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.communitycommon

Variable	Year	Definition	Reporting Unit	Data Source
				s.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

Variable	Year	Definition	Reporting Unit	Data Source
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.org/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 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 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.

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

[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.

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 less than 1 year and from 1 to 4 years were not available in the American Community Survey datasets used in this analysis, the proportion of the population under age 5 that was also less than 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 less than age 1 and from 1 to 4 years. 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 an 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.

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

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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-2010-0520.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

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 CHVI 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 less than 1 year of age 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.

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.

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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

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.

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 were 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

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[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

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:

- 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.

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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

Appendix C: 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 Community Commons Data Platform (CCDP), 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, shows which variables were collected directly by Valley Vision and which were obtained through the 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	POL	VIOL	TRANSIT	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

Name	ALHE	MH_SA	ACT	BASIC NEEDS	POL	VIOL	TRANSIT	DIS PREV	HSA Value	Benchmark Comparison	Source
Diabetes (H)	Yes							Yes	Calculated HSA Rate	Exceeds State Benchmark	VV
Food Deserts	Yes							Yes	HSA Intersects Food Desert	Exceeds 25% of ZCTAs	VV
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

Name	ALHE	MH_SA	ACT	BASIC NEEDS	POL	VIOL	TRANSIT	DIS PREV	HSA Value	Benchmark Comparison	Source
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
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

Name	ALHE	MH_SA	ACT	BASIC NEEDS	POL	VIOL	TRANSIT	DIS PREV	HSA Value	Benchmark Comparison	Source
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
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

Name	ALHE	MH_SA	ACT	BASIC NEEDS	POL	VIOL	TRANSIT	DIS PREV	HSA Value	Benchmark Comparison	Source
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
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

Name	ALHE	MH_SA	ACT	BASIC NEEDS	POL	VIOL	TRANSIT	DIS PREV	HSA Value	Benchmark Comparison	Source
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 intersect census tract within the top 20% of pollution burden scores in the state	Exceeds 25% of ZCTAs	VV
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	VV

Name	ALHE	MH_SA	ACT	BASIC NEEDS	POL	VIOL	TRANSIT	DIS PREV	HSA Value	Benchmark Comparison	Source
										Benchmark	
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
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

Name	ALHE	MH_SA	ACT	BASIC NEEDS	POL	VIOL	TRANSIT	DIS PREV	HSA Value	Benchmark Comparison	Source
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

Potential Health Need Category	Qualitative Indicators
	• 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	Mental Health • 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 Substance Abuse • 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 prenatal use • Transition aged youth • Tobacco-E cigs
Affordable and Accessible	• Lack of transport as a barrier to access health care services • Lack of transport as a barrier to access healthy foods

Potential Health Need Category	Qualitative Indicators
Transportation	• Long distance and difficulty accessing health care services • No active transport infrastructure • Personal transportation barriers • Public transportation barriers
Basic Needs	Housing • Gentrification/displacement • Housing discrimination • Homelessness/shelter crisis • Lack of affordable housing • Role of public housing agencies • Seniors/aging in place • Substandard housing Food Security • 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 Economic Security • Loss of safety net benefits • Need for job training resources • Safety net benefits (TANF, CalFresh, WIC) • Stigma/shame of poverty • Unemployment/lack of jobs Education • 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	Asthma • Air pollution/contamination • Anti-smoking laws and regulations • Cost of asthma medications • Environmental triggers (dust, mites, cockroaches, mold) • Secondhand smoke (cigarettes/marijuana) • Smoke shops Cancer • Air pollution exposure • Breast cancer • Cancer screening programs • Cervical cancer • Colorectal cancer • Early detection

Potential Health Need Category	Qualitative Indicators
	• Lack of healthy eating and active living opportunities • Lung cancer • Oncology/oncologists • Pesticide exposure • Prevention and education • Prostate cancer • Stomach cancer CVD/Stroke • Congestive heart failure (CHF) • Cost of medication • CVD/Stroke • Diagnosis, management, and treatment • Lack of healthy eating and active living opportunities • Hypertension • Stroke HIV/AIDS/STDs • 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

Potential Health Need Category	Qualitative Indicators
	• 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 D: Informed Consent

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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

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VALLEY VISION

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

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 E: Key Informant and Focus Group Interview Documents

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

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 <u>ONE</u> 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 <u>ONE or MORE</u> racial group(s) that describe you:

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

4. What year were you born? _____

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

☐ High school graduate (diploma or the   ☐ NOT a high school graduate (diploma or the
equivalent, for example, GED)   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 <u>ALL</u> that apply.

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

8. Are you <u>CURRENTLY</u> 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 **UNO o MÁS** grupos raciales que te describe:

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

4. ¿En qué año naciste? _____

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

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

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

7. ¿Participa en alguno de los siguientes programas? Elija **TODOS** que correspondan:

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

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

   ☐ Sí   ☐ No

   ¡Gracias por participar!

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]?

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:	

Dignity Health · KAISER PERMANENTE · Sutter Health We Plus You · UC DAVIS HEALTH SYSTEM

2016 Community Health Needs Assessment (CHNA)
About the CHNA Project

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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

Dignity Health   KAISER PERMANENTE   Sutter Health We Plus You   UC DAVIS HEALTH SYSTEM

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
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Patrocinadores del proyecto

Dignity Health   KAISER PERMANENTE.   Sutter Health We Plus You   UCDAVIS HEALTH SYSTEM

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

A...

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

¡Usted está invitado a un grupo de enfoque!

Por favor acompáñenos a platicar sobre la salud y bienestar de su comunidad. Nos gustaría saber su opinión sobre los problemas de salud donde usted vive.

¿Cuando?
¿A Qué hora?
¿Donde?

¡Vamos a servir almuerzo y regalar una tarjeta de regalo a cada participante!

Agradecemos su participación en la evaluación de las necesidades de salud en la región de Sacramento del año 2016

¿Preguntas? Llame a Giovanna Forno de Valley Vision, 916.325.1630

Appendix F: List of Key Informants

Organization	Number of Participants	Area of Expertise	Populations Served	Date
Sierra Nevada Memorial Hospital	5	Emergency department; medical affairs; cancer center; wellness coordination; community outreach	All populations living within the designated hospital service area	6.4.15
Chapa-De Indian Health	2	Community based organization; Federally Qualified Health Center	American Indians; low-income; medically underserved; racial or ethnic minorities	6.16.15
The Friendship Club	1	Community based organization	Children and families of Nevada County; low-income; medically underserved; racial or ethnic minorities	6.16.15
Nevada County Public Health	3	Public health	All residents of Nevada County	6.16.15
Community Recovery Resources	1	Community based organization	Low-income; medically underserved; racial or ethnic minorities	7.8.15
FREED Center for Independent Living	2	Community based organization; advocacy	Disabled adults; Low-income; medically underserved; racial or ethnic minorities	7.9.15
Anew Day	1	Community based organization	Low-income; medically underserved; racial or ethnic minorities	7.9.15
Nevada County Superintendent of Schools	1	Education	Children and families of Nevada County	7.9.15
Hospitality House	1	Community based organization; crisis services/ intervention	Low-income; medically underserved; racial or ethnic minorities	8.5.15
Western Sierra Medical Clinic	1	Federally Qualified Health Center; Community Health Center	Low-income; medically underserved; racial or ethnic minorities	8.5.15
Eskaton	1	Community based organization	Older adults; Low-income; medically underserved; racial or ethnic minorities	8.5.15
Turning Point	1	Community based organization	Low-income; medically underserved; racial or ethnic minorities	8.18.15
Nevada County Behavioral Health	1	Behavioral Health	All residents of Nevada County	8.28.15

Appendix G: List of Focus Groups

Location	Date	Number of Participants	Demographic Information
Sacramento Covered	9.4.15	6	Service providers
Chapa-De Indian Health Programs in Auburn- Diabetes Prevention Program	9.9.15	9	American Indian community members
Community Recovery Resources- Mothers in Recovery	9.22.15	9	Mothers in recovery
Respite Care Partnership/ Sierra Health Foundation	10.12.15	5	Service providers
NEO Youth	1.26.16	9	Youth and young adults
San Juan Ridge Family Resource Center	1.26.16	9	San Juan Ridge community members and service providers
Gold County Community Services Senior Café	3.23.16	8	Older adults

Appendix H: 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
Adult and Family Services Commission (AFSC) of Nevada County	Nevada City		X						
Agency on Aging- Area 4	Arden-Arcade	X	X			X	X		X
Alliance for Workforce Development, Inc.	Grass Valley, Truckee					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			
Anew Day	Grass Valley, Nevada City	X							
Another Choice Another Chance	South Sacramento	X							
Big Brothers Big Sisters of Nevada County and North Lake Tahoe	Truckee	X							X
Breathe California of Sacramento-Emigrant Trails	Downtown Sacramento		X				X	X	
Chapa-De Indian Health	Auburn, Grass Valley	X	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
Child Advocates of Nevada County	Nevada City		X			X			X
Clinical CareForce	Roseville		X						
Coalition for a Drug-Free Nevada County	Grass Valley						X		X
Common Goals Inc.	Grass Valley, North San Juan	X							
Community Recovery Resources (CoRR)	Auburn, Grass Valley, Roseville	X							
Del Oro Caregiver Resource Center	Citrus Heights						X		
Domestic Violence and Sexual Assault Coalition (DVSAC)	Grass Valley	X				X			X
Eskaton	Carmichael	X	X			X			X
First 5 Nevada	Grass Valley	X	X	X		X			
Food Bank of Nevada County	Grass Valley			X		X			
FREED Center for Independent Living	Grass Valley		X			X			
Gender Health Center	Oak Park	X	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
Gold Country Community Services	Grass Valley			X		X			
Goodwill-Sacramento Valley & Northern Nevada	Rosemont					X			
Grass Valley Seventh-Day Adventist Church	Grass Valley					X			
Hospice of the Foothills	Grass Valley		X	X	X	X			X
Hospitality House	Grass Valley	X	X			X			X
Interfaith Food Ministries	Grass Valley					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			
LivingWell Medical Clinic	Grass Valley	X					X		
Mercy Housing	South Sacramento					X			
NAMI (National Association of	Grass Valley	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
Mental Illness)									
NEO Youth Center	Grass Valley			X			X		X
Nevada County 2-1-1 - Emergency Assistance Coalition	Grass Valley				X	X			
Nevada County Behavioral Health Department	Grass Valley	X					X		X
Nevada Ccounty Health and Human Services Agency	Grass Valley	X	X	X	X	X	X	X	X
Nevada County Public Health	Grass Valley	X	X	X		X	X	X	X
Nevada County Superintendent of Schools	Nevada City	X	X	X		X			X
Nevada County WIC	Grass Valley			X	X		X		
North San Juan Center	North San Juan					X			
North San Juan Community Church	Nevada City					X			
North San Juan Volunteer Fire Department	North San Juan		X			X			X
PRIDE Industries	North					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
	Sacramento, North Highlands, South Sacramento								
Rotary Club of Nevada City	Nevada City					X			
San Juan Ridge Family Resource Center	North San Juan			X		X			X
Shingle Springs Tribal TANF Program	Arden-Arcade					X			
Shriner's Hospital for Children-Northern California	Oak Park		X						
Sierra Dance Studios	Grass Valley			X					
Sierra Family Medical Clinic	Nevada City	X	X	X			X		
Sierra Nevada Memorial Hospital	Grass Valley		X				X		
Sierra Roots	Nevada City			X		X			
Spirit Peer Empowerment Center	Grass Valley	X							
Su Familia- The National Hispanic Family Health Helpline	Washington, D.C		X						
The Center for the Arts	Grass Valley					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
The Clinic!	Grass Valley		X						
The Friendship Club	Nevada City		X						X
The Gateway Mountain Center	Soda Springs	X				X			
The Keaton Raphael Memorial	Roseville						X		
The Mental Health Association in California	Midtown Sacramento	X							
The Salvation Army- Del Oro Division	Auburn, Colfax, Downtown Sacramento, Grass Valley, Midtown, North Sacramento, Oak Park, Rosemont	X	X			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			

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
WarmLine Family Resource Center	Downtown Sacramento, Rocklin	X	X			X			
Western Sierra Medical Clinic	Camptonville, Downieville, Grass Valley, Penn Valley, Washington	X	X	X			X		
Willow Springs	North San Juan			X					
Women of Worth	Grass Valley, Nevada City	X				X			X