A Community Health Needs Assessment

of the

Sutter Amador Hospital Service Area

Located at

200 Mission Blvd,
Jackson, CA 95642

Conducted by:

May 2016

Acknowledgements

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Report Summary

Introduction

Both state and federal law require that nonprofit hospitals conduct a community health needs assessment (CHNA) every three years to identify and prioritize the significant health needs of the communities they serve. The results of the CHNA guide the development of implementation plans aimed at addressing identified health needs. Federal regulations define a *health need* accordingly: "…health needs include requisites for the improvement or maintenance of health status in both the community at large and in particular parts of the community (such as particular neighborhoods or populations experiencing health disparities)" (p. 78963).[1]

This report documents the processes, methods, and findings of a CHNA conducted on behalf of Sutter Amador Hospital (SAH), a Sutter Health affiliate hospital located in Amador County, California. The CHNA was conducted over a period of 10 months, beginning in July 2015, and concluding in April 2016. Specifically, the objective of the 2016 CHNA was to:

> *Building on the 2013 CHNA, identify and prioritize the requisites (or basic provisions and conditions needed), for the improvement and/or maintenance of health status within a defined hospital service area (HSA), and in particular within neighborhoods and/or populations in the service area experiencing health disparities (the "Communities of Concern.")*

Processes and Methods

The data used to conduct the CHNA were both identified and organized using the widely recognized County Health Rankings model (see Appendix A for a detailed data dictionary). This model of population health includes the many factors that impact and account for individual health and wellbeing. Further, to guide the overall process of conducting the assessment, a defined set of data collection and analytic stages was developed. These served as the roadmap to follow as the research team went about the work of the CHNA (for a detailed description of the processes followed in conducting the CHNA, see Appendix B).

Data collected and analyzed included both primary or qualitative data, and secondary or quantitative data. Primary data included 7 interviews with 33 community health experts as well as three focus groups conducted with 24 community residents (see Appendices F and G). Secondary data included health outcome and health factor indicators. Health outcome indicators included measures of both mortality and morbidity such as mortality rates, emergency department visit and hospitalization rates, and primary reasons why community residents sought primary care. Health factor indicators included measures of 1) health behaviors such as diet and exercise, tobacco, alcohol, and drug use; 2) clinical care, including access and quality of care; 3) social and economic factors such as race/ethnicity, income, educational attainment, employment, and others; and 4) physical environmental measures such as air and water quality, housing stability, and transit and mobility resources. In all 114 different health outcome and factor indicators were collected for each of the ZIP codes included in the assessment.

Data were analyzed to identify Communities of Concern within the HSA. These are defined as geographic areas (ZIP codes) and populations within the HSA that have the greatest concentration of poor

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

health outcomes and are home to more medically underserved, low income and diverse populations at greater risk for poorer health. Communities of Concern were important to the overall CHNA methodology because, after assessing the HSA more broadly, they allowed for a focus on those portions of the HSA likely experiencing the greatest health disparities.

Sutter Amador Hospital (SAH) is located in Amador County, CA. The community served by SAH, or the hospital service area (HSA), was defined by 20 ZIP codes noted in the table that follows. This area was identified as the HSA because most of SAH's patients resided in these ZIP codes. The HSA was home to close to 60 thousand community residents, spanned two counties and was rich in diversity in a number of dimensions.

ZIP Code	Population	Median Age	Median Income	Percent Minority
95225	565	53.8	52,788	34.3%
95226	284	14.2	N/A	0
95232	286	46.2	55,417	22.4%
95245	2273	56.2	62,077	12.0%
95248	131	57.9	21,382	36.6%
95252	14,908	45.3	65,395	21.7%
95254	463	54.0	151,298	10.2%
95255	2,162	51.1	39,308	16.1%
95257	396	55.6	46,111	7.3%
95601	139	54.5	19,688	4.3%
95629	949	56.2	41,181	0
95640	10,825	42.2	58,309	32.8%
95642	6,705	45.4	44,811	18.9%
95665	4,240	53.5	46,345	12.9%
95666	5,525	58.5	53,391	14.3%
95669	2,864	48.6	67,770	13.2%
95675	405	30.7	32,470	53.6%
95685	4,368	53.9	59,239	12.3%
95689	1,151	67.1	78,352	5.0%
95699	267	35.7	73,555	49.8%
Total HSA Population	58,906			
Amador County	37,422	49.1	$53,684	20.0%
Calaveras County	45,147	50.1	$55,295	16.8%
CA State	37,659,181	35.4	*$61,094*	*60.0%*

Findings

Analysis of both primary and secondary data revealed six ZIP codes that met the criteria to be classified as a Community of Concern. These are noted in the table that follows, with the census population provided for each. These are also described in the following figure.

ZIP Code	Community/Area*	Population
95601	Amador City	139
95629	Fiddletown	949
95640	Ione	10,825
95642	Jackson	6,705
95666	Pioneer	5,525
95669	Plymouth	2,864
Total Population in Communities of Concern		27,007
Total Population in the HSA		58,906
Percent of the HSA		46%

(Source: US Census, 2013)

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

Primary and secondary data were also analyzed to identify and prioritize the significant health needs within the SAH Communities of Concern. This included identifying 10 potential health needs (PHN) that could be identified in these communities. These potential health needs were those identified in the previously conducted CHNA for SAH (conducted in 2013). Data were analyzed to discover which, if any, of the PHNs were present in the SAH Communities of Concern. All 10 PHNs were identified as significant health needs. After these were identified, PHNs were prioritized based on an analysis of primary data sources that discussed the PHN as a significant health need. These are displayed in the figure that follows. The length of the bar denotes prioritization.

The figure below displays the ten significant health needs for the HSA in prioritized order. Prioritization was based on a combination the percent of all primary data sources that referenced the PHN as a current, significant health need, shown by the blue portion of the bar, and the average number of times the PHN was referenced across all primary data sources, shown in the red portion of the bar

SAH Prioritized Health Needs

Health Need	Percent of all sources that referenced health need	Average number of times health need was referenced across all sources
Access to Mental, Behavioral, and Substance Abuse Services	91%	6.9
Access to Quality Primary Care Services and Prescriptions	100%	4.9
Access to Transportation and Mobility	91%	3.5
Access to Basic Needs	82%	2.8
Access to Speciality Care	73%	1.4
Access to Health Education and Health Literacy	64%	1.6
Access to Affordable, Healthy Food	55%	1.4
Access to Dental Care and Prevention	45%	0.8
Safe and Violent free Environment	36%	1.1
Pollution Free Living	18%	0.5

■ Percent of all sources that referenced health need

■ Average number of times health need was referenced across all sources

The identified significant health needs for the SAH Communities of Concern are listed in prioritized order. Secondary data indicators that had undesirable rates in the Communities of Concern are listed in the table below each significant health need. The qualitative themes that emerged during analysis are also provided in the table.

1. Access to Mental, Behavioral, and Substance Abuse Services

The highest priority significant health need for the SAH HSA was access to mental, behavioral, and substance abuse services. Individual health and well-being are inseparable from individual mental and emotional outlook. Coping with daily life stressors is challenging for many people, especially when other social, familial, and economic challenges also occur. Adequate access to mental, behavioral, and substance abuse services helps community members to obtain additional support when needed.

Quantitative Indicators	Qualitative Themes
• Mental health ED visits • Mental health hospitalizations • Substance abuse ED visits • Substance abuse hospitalizations • Health Professional Shortage Area -- Mental Health	• No psychiatric facility or psychiatrist in the county • Very few providers that provide mental health treatment in the county • County public health offers mental health treatment for Medi-cal members (15% of the county population is on Medi-cal) • Lack of access means a delay in treatment for mental health issues • Lack of access during crisis results in high reliance on local emergency department • High veteran population with PTSD and mental health issues • Drug abuse contributes to poor mental health • No sober living treatment house in county • High suicide rates in older and middle aged White males

2. Access to Quality Primary Care Health Services

The second highest priority significant health need for the SAH HSA was access to quality primary care health services. Primary care resources include community clinics, pediatricians, family practice physicians, internists, nurse practitioners, pharmacists, telephone advice nurses, and similar. Primary care services are typically the first point of contact when an individual seeks healthcare. These services are the front line in the prevention and treatment of common diseases and injuries in a community.

Quantitative Indicators	Qualitative Themes
• Total ED visits (utilization) • Total hospitalizations (utilization) • Health Professional Shortage Area – Primary Care	• Large percent of residents in county are seniors and/or veterans indicating a higher need for medical care • Lack of medical providers in the area – especially lack of Medi-cal providers • Long wait period to get an appointment for care • Recruitment for medical providers to work in the county is needed • Emergency department is consistently busy – long wait for care • One of the major Medi-cal plans for care under ACA is not taken in the county by a single provider

3. *Access to Transportation and Mobility*

The third highest priority significant health need for SAH HSA was access to transportation and mobility. Having access to transportation services to support individual mobility is a necessity of daily life. Without transportation, individuals struggle to attain their basic needs, including those that promote and support a healthy life.

Quantitative Indicators	Qualitative Themes
• Percent of population living within one-half mile of public transit • Percent of population with no vehicle	• Lack of services in the county results in the need for stable, reliable, and affordable transportation. • All veteran affairs benefits are outside of the county requiring long transportation times to acquire care • No specialty care in the county • Lack of access to mental health treatment and care in the county requires residents to travel far distances to access care. Unsafe during a mental health crisis. • Amador Transit has a limited route and doesn't operate on the weekends. Getting to the transit stop is equally difficult due to the distance from the transit stop. • Access to healthy foods for "Upcountry" communities is hard without transportation

4. *Access to Basic Needs, such as Housing and Employment*

The fourth highest priority significant health need for the SAH HSA was access to basic needs such as housing and jobs. Access to affordable and clean housing, stable employment, quality education, and adequate food for good health are vital for survival. Maslow's Hierarchy of Needs[2] says that only when members of a society have their basic physiological and safety needs met can they then become engaged members of society and self-actualize or live to their fullest potential, including their health.

Quantitative Indicators	Qualitative Themes
• Life expectancy at birth • Median household income • Percent of population below federal poverty level • Percent of population with no high school diploma • Percent of population on public assistance • Percent of population unemployed	• Lack of affordable housing • Lack of employment opportunities in the county • Generational poverty – lack of access to opportunities for education and employment • Homelessness in adults, especially veterans, and teens. Living "off the grid." • Lack of access to obtain an advanced degree in county – lacking a formal relationship with a local college/university • High number of people on public assistance • Many people live with food insecurity

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[2] McLeod, S. (2014). *Maslow's Hierarchy of Needs*. Retrieved from: http://www.simplypsychology.org/maslow.html

5. Access to Specialty Care

The fifth highest priority significant health need for SAH HSA was access to specialty care. Specialty care services are those devoted to a particular branch of medicine and focus on the treatment of a particular disease. Primary and specialty care go hand-in-hand, and without access to specialists such as endocrinologists, cardiologists, and gastroenterologists community residents are often left to manage chronic diseases such as diabetes and high blood pressure on their own.

Quantitative Indicators	Qualitative Themes
• Diabetes hospitalizations • Heart disease hospitalizations • Hypertension hospitalizations • Kidney disease hospitalizations • Stroke hospitalizations	• Lack of specialty care in the county • No dialysis centers and/or cancer treatment providers in the county • Lack of pain management providers, eye care specialists in the county • Only one long term care facility in county

6. Access to Health Education

The sixth highest priority significant health need for the SAH HSA was access to health education. Knowledge is important for individual health and well-being, and health education interventions are powerful tools to improve community health. When community residents lack adequate information on how to prevent, manage, and control their health conditions, those conditions tend to worsen. Health education around infectious disease control (e.g. STI prevention, influenza shots) and intensive health promotion and education strategies around the management of chronic diseases (e.g. diabetes, hypertension, obesity, and heart disease) are important for community health improvement.

Quantitative Indicators	Qualitative Themes
• Smoking rates - County • HIV/AIDS ED visits • STI ED visits • Unintentional injuries ED visits • Unintentional injuries hospitalizations • Diabetes ED visits • Diabetes hospitalizations • Heart disease ED visits • Heart disease hospitalizations • Hypertension ED visits • Hypertension hospitalizations • Kidney disease ED visits • Kidney disease hospitalizations • Stroke ED visits • Stroke hospitalizations	• Large percent of county residents are seniors and/or veterans indicating a larger occurrence of chronic illnesses ○ Conditions mentioned: Diabetes, heart disease, hypertension, stroke, cancer, COPD • Significant need for chronic disease management care and prevention • High smoking rate in county • Need for drug abuse prevention and education

7. Access to Affordable, Healthy Food

The seventh priority significant health need for the SAH HSA was access to affordable, healthy foods. Eating a healthy diet is extremely important for one's overall health and well-being. When access to healthy foods is challenging for community residents, many turn to unhealthy foods that are convenient, affordable, and readily available. Communities experiencing social vulnerability and poor health outcomes often are overloaded with fast food and other establishments where unhealthy food is sold.

Quantitative Indicators	Qualitative Themes
• Diabetes ED visits • Diabetes hospitalizations • Heart disease ED visits • Heart disease hospitalizations • Hypertension ED visits • Hypertension hospitalizations • Kidney disease ED visits • Kidney disease hospitalizations • Stroke ED visits • Stroke hospitalizations • Modified Retail Food Equivalency Index (mRFEI)	• Lower access to healthy food in the "Upcountry" areas of the county • Healthy food is more expensive • Food bank serves a large amount of county residents living with food insecurity • Challenging to grow own food due to wildlife issues – need fencing to keep out deer and other animals.

8. Access to Dental Care and Prevention

The eighth priority significant health need for SAH HSA was access and dental care and prevention. Oral health is important for overall quality of life. When individuals have dental pain, it is difficult to eat, concentrate and fully engage in life. Poor oral health impacts the health of the entire body, especially the heart, digestive and endocrine systems.

Quantitative Indicators	Qualitative Themes
• Dental illness ED visits	• No Denti-cal (Medi-cal) providers in the county • Lack of providers in the county to provide dental care • Lack of providers results in pulling of teeth during dental emergencies

9. Safe and Violence-Free Environment

The ninth priority significant health need for the SAH HSA was safe and violence-free environments. Feeling safe in one's home and community are fundamental to overall health. Next to having basic needs met (food, shelter, clothing) is physical safety. Feeling unsafe affects the way people act and react to everyday life occurrences.

Quantitative Indicators	Qualitative Themes
• Mental health ED visits • Mental health hospitalizations • Substance abuse ED visits • Substance abuse hospitalizations • Assault ED visits • Fatal traffic accidents • Percent of population living ½ mile from park	• Safety issues related to isolation in the rural environment • Few parks in the area – children cannot play outside due to wildlife safety concerns (snakes, deer, etc.), far from neighbors, few areas in the county for structured play • No formal trail system in the county • Few areas have sidewalks for traveling safely by foot – including walking to school • Crimes related to drug usage • Domestic violence in the county was mentioned

10. *Pollution-Free Living Environment*

The tenth priority significant health need for SAH HSA was a pollution-free living environment. Living in a pollution-free environment is essential for health. Individual health is determined by a number of factors, and some models show that one's living environment, including the physical (natural and man-made) and socio-cultural environment, has more impact on individual health than one's lifestyle, heredity, or access to medical services.[3]

Quantitative Indicators	Qualitative Themes
• Asthma ED visits • COPD ED visits • Asthma hospitalizations • COPD hospitalizations • Percent smokers	• Old mining area along highway 49 "the Golden Chain Highway" may expose families to increased risk for cancer • Many area families drink well water • Nuclear plant located in the county

Limitations

Study limitations included challenges obtaining secondary data and assuring community representation via primary data collection. Most data used in this assessment were not available by race/ethnicity. In addition, data on behavioral issues and conditions like obesity were both difficult to obtain at the sub-county level and were not available by race and ethnicity; therefore, county rates were used. Data timeliness was also a challenge, because some data represents different years. However, these are clearly noted to allow for proper data comparison. As always with primary data collection, gaining access to participants that best represent the populations needed for this assessment proved to be a challenge. During the data collection phase of the assessment, the Amador and Calaveras Counties had a large fire in the area. The fire provided a unique challenge for the assessment as it became challenging to schedule interviews with providers and focus groups with area residents.

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[3] See Blum, H. L. (1983). *Planning for Health*. New York: Human Sciences Press

Conclusion

Nonprofit hospitals play a vital role in the communities they serve. In addition to the delivery of newborns and the treatment of disease, these important institutions work with and alongside other organizations to improve community health and well-being by working to prevent disease, improve access to healthcare, promote health education, eliminate health disparities, and achieve other goals. CHNAs play an important role in helping nonprofit hospitals, as well as other community organizations, determine where to focus community benefit and improvement efforts, including geographic locations and specific populations living in their service areas.

Introduction

Both state and federal law (California AB697 and The Patient Protection and Affordable Healthcare Act of 2010 (ACA) require nonprofit hospitals to conduct community health needs assessment (CHNA) every three years. These assessments identify and prioritize the significant health needs of the communities served by hospitals. Based on the results, nonprofit hospitals develop implementation plans to address particular, significant health needs. Specifically, the ACA requires that nonprofit hospitals:

- Define the community they serve
- Assess the health needs of the community, taking into account input from persons representing the broad interests of the community, including those with expertise in public health
- Identify and prioritize significant health needs
- Identify resources within each community available to meet health needs
- Evaluate the impact of actions taken by the hospital since its previous CHNA
- Document the CHNA and make it widely available to the public

The Department of Treasury, Internal Revenue Service, issued final regulations effective December 29, 2014, that specify the requirements regarding nonprofit or charitable hospitals conducting a CHNA. These regulations define a health need accordingly: "…health needs include requisites for the improvement or maintenance of health status in both the community at large and in particular parts of the community (such as particular neighborhoods or populations experiencing health disparities)"[4]. The proposed regulations go on to describe requisites for the improvement or maintenance of health status, and indicate that these include "…not only the need to address financial and other barriers to care but also the need to prevent illness, to ensure adequate nutrition, or to address social, behavior, and environment factors that influence health in the community" (p. 78963). Further, the final regulations specify that nonprofit hospitals may build upon a previously conducted CHNA, rather than create a new CHNA every three years.

This report documents the processes, methods, and findings of a CHNA conducted on behalf of Sutter Amador Hospital (SAH), a Sutter Health affiliate hospital located in Amador County, California. The CHNA was conducted over a period of 10 months, beginning in July 2015, and concluding in April 2016. Specifically, the objective of the 2016 CHNA was to:

> *Building on the 2013 CHNA, identify and prioritize the requisites (or basic provisions and conditions needed), for the improvement and/or maintenance of health status within a defined hospital service area (HSA), and in particular within neighborhoods and/or populations in the service area experiencing health disparities (the "Communities of Concern.")*

From this objective the following questions were used to guide the 2016 CHNA:

1. What are the "Communities of Concern" as identified in the 2013 CHNA?
2. What is the current health status of these communities?
3. Who within the community (subgroups) is/are experiencing disparities?
4. What factors are contributing to the health status of those experiencing disparities?
5. What are the potential resources (programs, organizations, and facilities) available in the community to address health needs?

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

6. What are the significant health needs, and the priorities among these, for the community served by the hospital, and specifically the "Communities of Concern" as identified in the 2013 CHNA?
7. What is required (the requisites) to improve and/or maintain the health status of residents within these communities?
8. What is the impact of actions taken since the last CHNA?

Community Health Insights (www.communityhealthinsights.com) conducted the CHNA on the behalf of the SAH. Community Health Insights is a Sacramento-based research-oriented consulting firm dedicated to improving the health and well-being of communities across Northern California. Collectively, the managing partners of Community Health Insights have conducted multiple CHNAs over the previous nine years.

Organization of this Report

Following federal guidelines issued on how to document a CHNA, this report is organized accordingly: First, the community served by the SAH and how the community was identified is described. Second, the methods used to conduct the CHNA are described, including how data were collected and analyzed, and a listing of all parties with which the SAH collaborated to conduct the assessment is provided. Third, a description of how the SAH solicited and considered the input received from persons who represented the broad interests of the community served follows, including a summary of the input received, the time period in which it was received, and a listing of organizations that provided input, including the populations represented by the organization. Following, the prioritized listing of significant health needs identified through the CHNA is described, along with a description of the process and criteria used in identifying and prioritizing these needs. Next, both health outcome and health factor indicators are reviewed in detail for specific areas of the ASBMC HSA. Resources potentially available to meet these needs are identified and described next, followed by a summary of the impact of actions taken by SAH to address significant health needs identified in its previous CHNA, which was conducted in 2013.

Definition of the Community Served by Sutter Amador Hospital

Sutter Amador Hospital (SAH) is located in Amador County, CA. The community served by SAH, or the hospital service area (HSA), was defined by 20 ZIP codes noted in the table that follows. This area was identified as the HSA because most of SAH's patients resided in these ZIP codes. The HSA was home to close to 60 thousand community residents, spanned two counties and was rich in diversity in a number of dimensions. The SAH HSA is depicted in Figure 1. As shown in the legend, black lines denote ZIP code boundaries that are included in the SAH HSA.
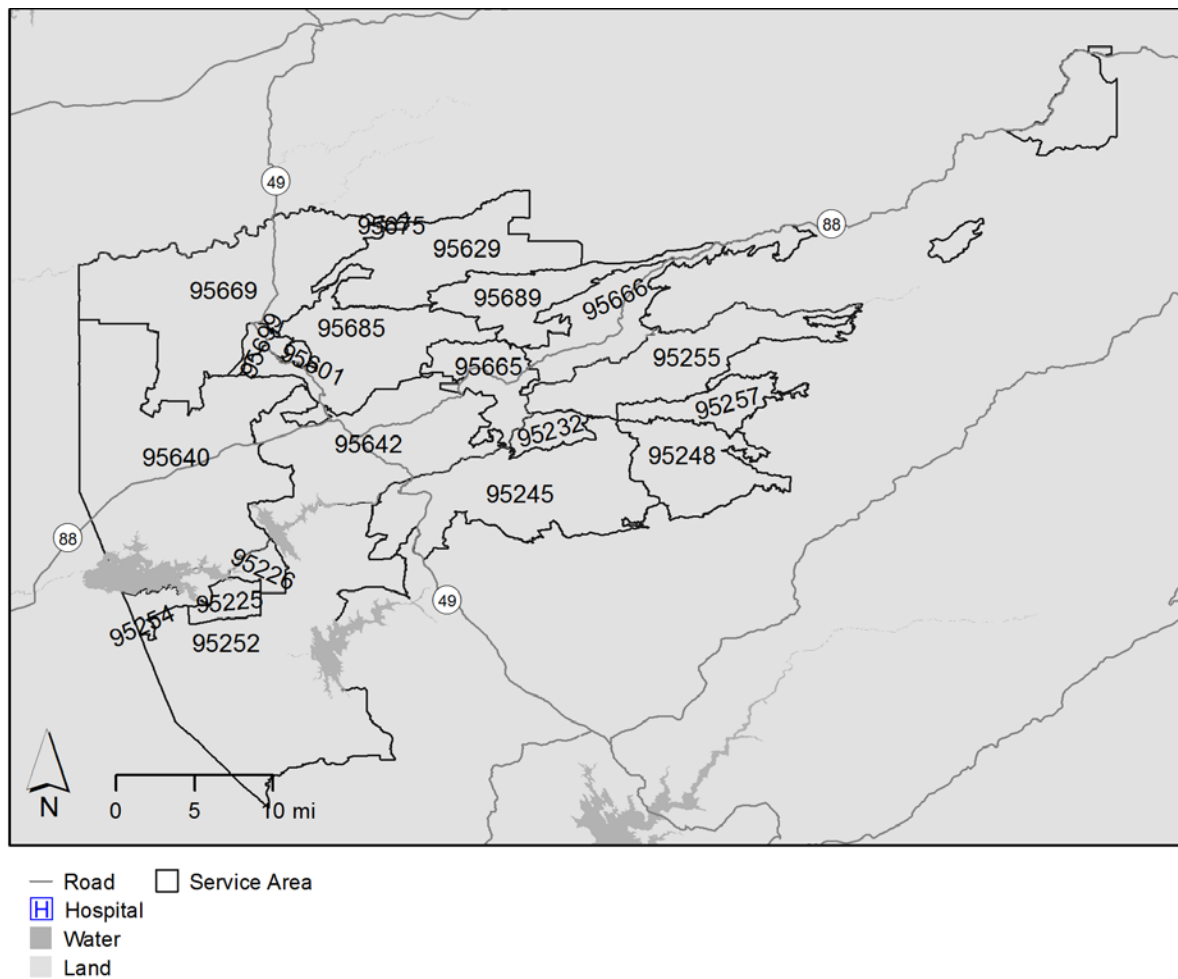
Figure 1: Sutter Amador Hospital -- Hospital Service Area

In order to better understand the social and health data presented in this assessment, an examination of population density was added. As Figure 2 shows, the areas of Jackson, Sutter Creek and Rancho Calaveras (in Calaveras County) are the most densely populated areas of the SAH HSA. This is followed by the upcountry areas of Pine Grove, Pioneer, and Volcano.
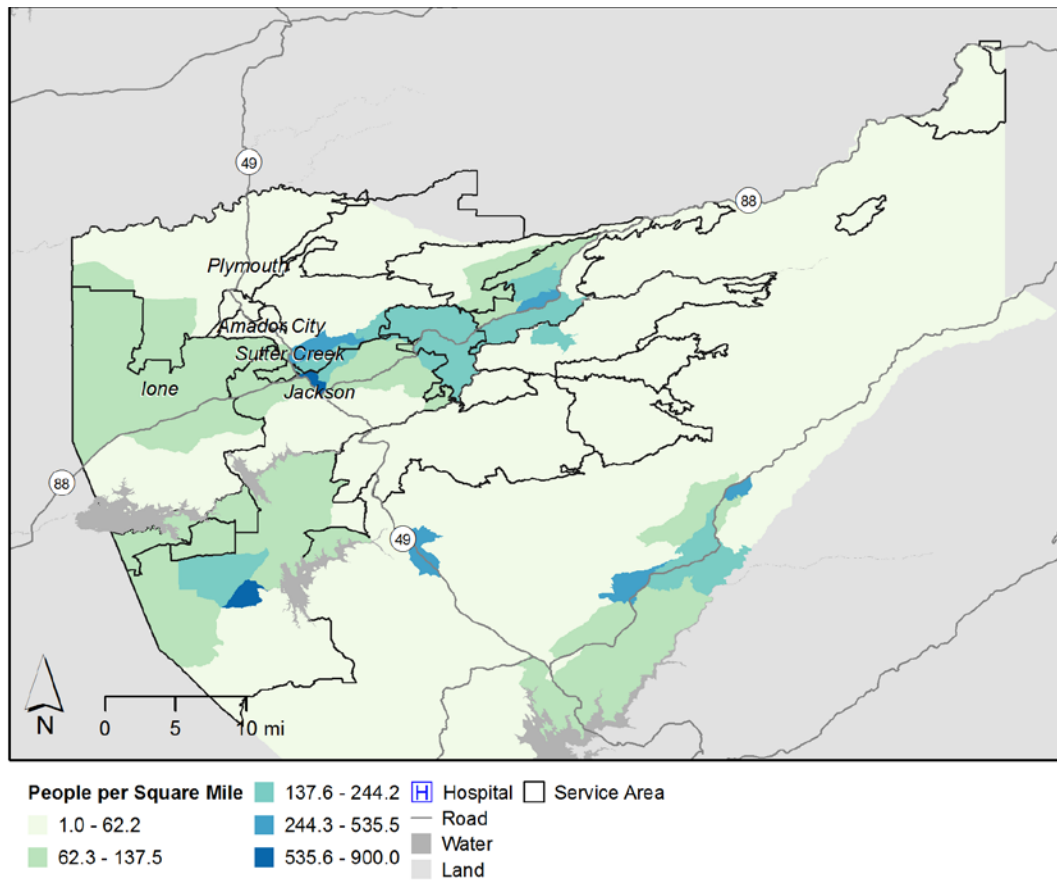
Figure 2: Population density of SAH HSA

General Overview of the Community

Population characteristics for each ZIP code that comprises the HSA are presented in Table 1.

Table 1: Population, median age, median income and percent minority for all ZIP codes in the SAH HSA

ZIP Code	Population	Median Age	Median Income	Percent Minority
95225	565	53.8	$52,788	34.3%
95226	284	14.2	N/A	0
95232	286	46.2	$55,417	22.4%
95245	2273	56.2	$62,077	12.0%
95248	131	57.9	$21,382	36.6%
95252	14,908	45.3	$65,395	21.7%
95254	463	54.0	$151,298	10.2%
95255	2,162	51.1	$39,308	16.1%
95257	396	55.6	$46,111	7.3%
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95669	2,864	48.6	$67,770	13.2%
95675	405	30.7	$32,470	53.6%
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CA State	37,659,181	35.4	*$61,094*	*60.0%*

(Source: US Census, 2013) Note: a percent of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

As seen in Table 1, there was a wide variation between HSA ZIP codes in terms of population size, median age, median income and diversity. The HSA was home to over 58,000 community residents. Population counts ranged from 131 people in the ZIP code of 95248 (Railroad Flat) to 14,908 in ZIP code 95252 (Valley Springs).

Median age ranged greatly in the HSA, with ZIP codes 95226 (xxx) having the lowest median age at around 14 years; this is in contrast to ZIP codes 95689 (Volcano) and ZIP code 95666 (Pioneer) with a median age of more than triple that at 67.1 and 58.5 years respectively. Median income also differed in the HSA area from $19,688 for ZIP code 95601 (Amador City), to $151,298 for 95254 (Wallace). Diversity also varied greatly in the various ZIP codes, with 53.6% of residents in 95675 (River Pines) self-identifying as minority (Hispanic and non-White) compared to only zero residents identifying as part of a minority group in the ZIP codes 95226 (Campo Seco) and 95629 (Fiddletown).

Further examination of racial and ethnic diversity in the HSA is examined in Figure 3. Areas with index values closer to 1 indicate a population more evenly divided between race and ethnic groups. In the figure, census tracts within each ZIP code in the HSA are highlighted with different colors to show different values of the diversity index. Darker colored census tracts have a higher diversity index, and thus more diverse populations.
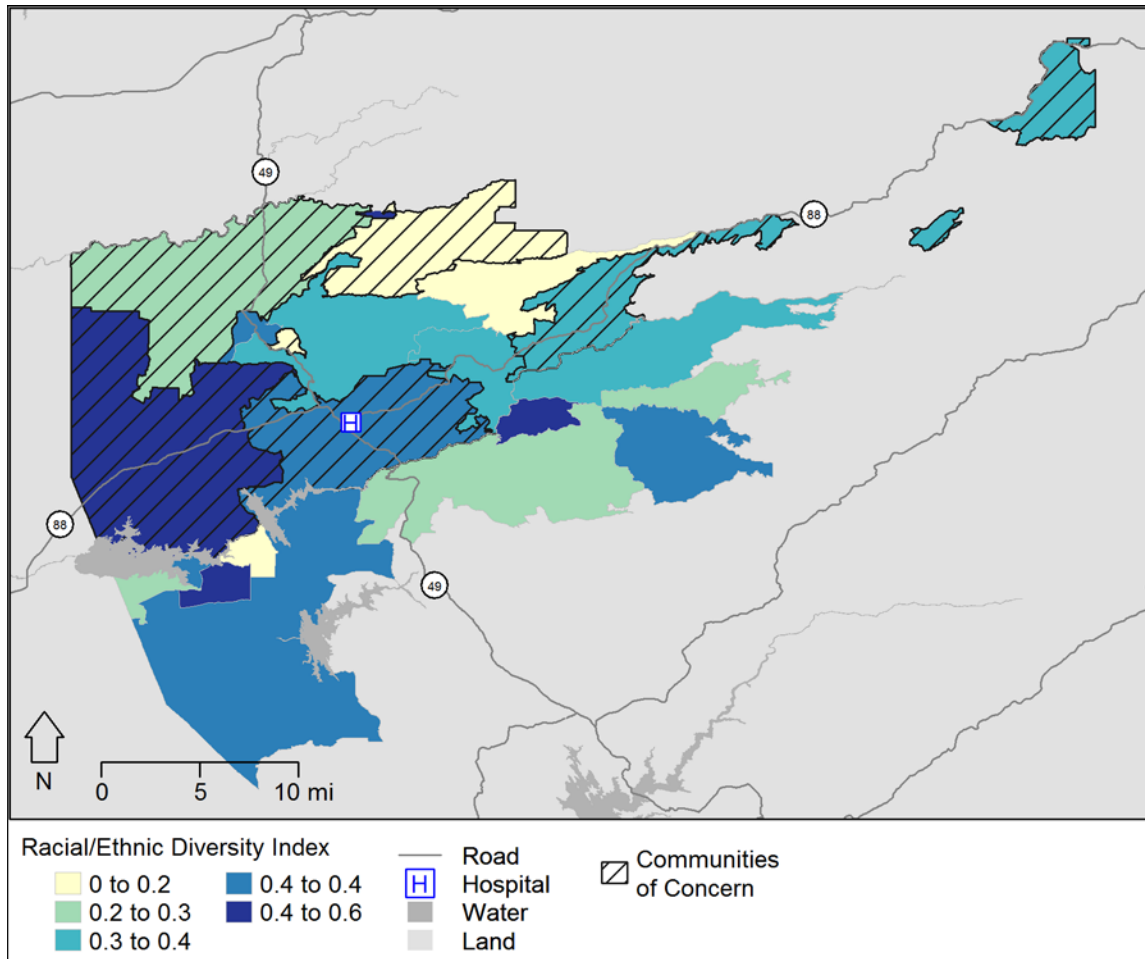
Figure 3: Diversity Index for the SAH HSA

Figure 3 shows that the western portion of the HSA is the most diverse area. This areas includes the ZIP code of 95640 (Ione). However, this areas is only slightly more diverse then the next highest category. In addition ZIP code 95232 (Glencoe) has the greatest diversity in the HSA, although not a Community of Concern.

Processes and Methods

Determination of Health Status-Conceptual Model

The conceptual model used to support and organize this CHNA was based on a model of population health that is inclusive of the many factors that impact individual health and well-being. Building on the work of America's Health Rankings, the model was developed by the University of Wisconsin's Population Health Institute and is used in the Robert Wood Johnson Foundation's widely

known County Health Rankings.[5] The model includes health indicators organized into Health Outcomes and Health Factors, and then further organized into smaller categories such as Morbidity and Mortality, Health Behaviors, Clinical Care, Social and Economic Factors, and the Physical Environment. Counties across the nation are then ranked based on each of the indicators in the model in an attempt to compare the health status of one county over the other. The creators of the model write:

> *Helping communities become healthier places to live, learn, work, and play means attending to many interrelated factors. These include health factors such as access to clinical care and improvements in healthy behaviors, such as diet and exercise, but also social and economic factors, such as neighborhood safety, employment, housing, and transit. By monitoring these factors, we can identify avenues to create and implement evidence-informed policies and programs that improve community well-being and health.[6]*

The conceptual model presented in Figure 4 is a slightly modified version of the County Health Rankings Model that allowed for the organization of data for this community health assessment (for a detailed description of this organization, see Appendix A).

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[5] Robert Wood Johnson. (2015). *Our Approach: County Health Rankings*. Retrieved from http://www.countyhealthrankings.org/our-approach
[6] Catlin, B. (2014). The County Health Rankings: *A Treasure Trove of Data.*
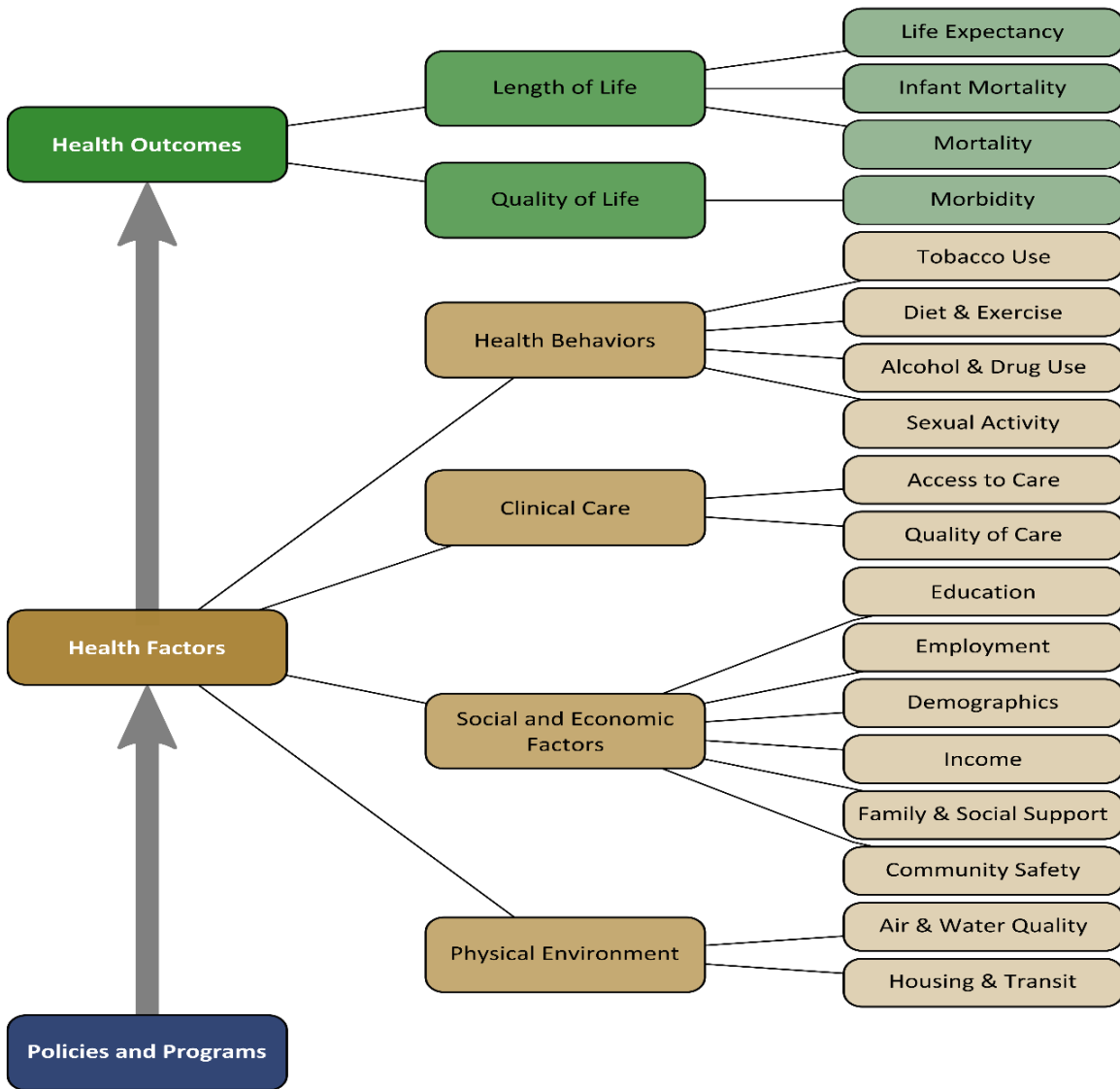
Figure 4: SAH Community Health Assessment Conceptual Model as modified from the County Health Rankings Model, RWJF and the University of Wisconsin, 2015.

Community Health Assessment Process Model

As illustrated in Figure 5, the project was conducted using a series of data collection and analytical stages. The project began with a definition of the HSA based on the definition used for the previous 2013 Community Health Needs Assessment. Area-wide primary and secondary data were collected for the defined HSA. Primary data were collected through interviews with area-wide service providers. Secondary data included health factor and health outcome indicators described in detail in Appendix A, a list of Communities of Concern (areas experiencing disparities) identified for the HSA in the 2013 CHNA, as well as the Community Health Vulnerability Index (CHVI) values for each census tract in the HSA.
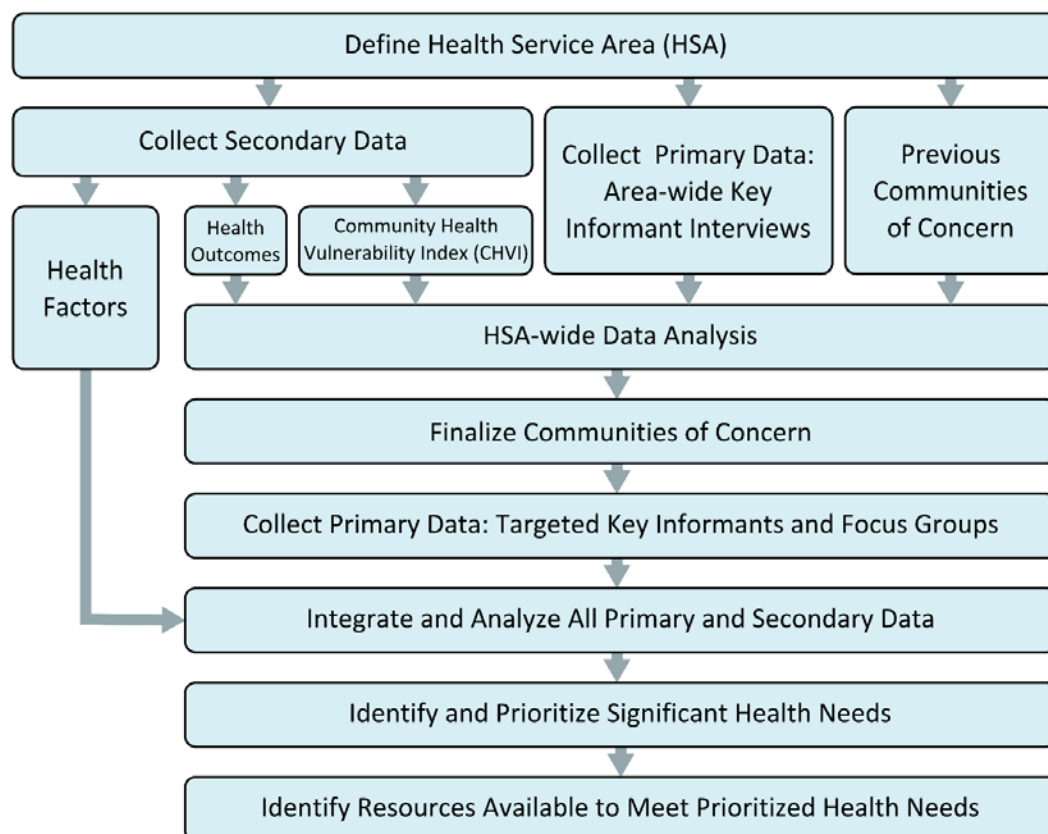
Figure 5: 2016 CHNA Process Model

Using this approach, 2016 SAH ZIP code Communities of Concern were defined by following an analysis of secondary health outcome indicators, CHVI values, and key informant/health expert input; next focus group interviews were conducted in the ZIP code Communities' of Concern. Overall primary and secondary data for the Communities of Concern were then integrated to identify the significant health needs for the HSA. Significant health needs were then prioritized based on analysis of the primary data. Finally, resources available within the HSA to address health needs were identified.

Methods of Primary Data Collection and Processing

Input from the community was collected through two main mechanisms: key Informant interviews with community health experts and service providers and focus group discussions with community members. Instruments used in primary data collection included a participant informed consent, an interview question guide, a project summary sheet, and a reflection sheet. All participants were given an informed consent form prior to their participation, which 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 C). The interview question guide was used for both the key informant and focus group interviews (Appendix D). The project summary sheet (Appendix E) was given to participants to provide them with information about the project as well as contact information for the CHNA staff. After the interview or focus group was conducted the facilitator captured the main findings in a reflection sheet.

Collecting Primary Data

Primary data were collected between June 2015 and October 2015.

Key informant Interviews

Key informant interviews were conducted with area service providers and experts representing the broad interests of the community who were familiar with the populations in the HSA. Primary data collection began by interviewing area-wide service providers with knowledge of the SAH HSA, including input from the Amador County Public Health Department and the Calaveras County Public Health Department. Findings from the area-wide informants were combined with quantitative data showing locations of populations experiencing disparities, to identify and interview key informants with knowledge about these specific populations and locations. These targeted primary data sources were selected based on their knowledge of the needs of particular geographic locations and/or subgroups experiencing disparities. A total of 7 key informant interviews were done with 33 service providers which are listed on Appendix F. The key informant interviews were used to identity additional key service providers to include in the assessment, as well as identify specific populations that should be included in the focus group interviews.

Focus Group Interviews

Focus group interviews were conducted with community members living in geographic areas of the HSA identified as locations where residents experience an overwhelming amount of poor socioeconomic conditions and poor health outcomes. Recruitment consisted of referrals from designated service providers representing vulnerable populations in the SAH HSA, as well as direct outreach from CHI to acquire input for a special population group. A total of three focus group discussions were conducted with a total of 24 community members and are listed in Appendix G.

Processing Primary Data

After each interview was completed, the interview recording was sent to a transcription service; content analysis was done on the transcriptions using NVIVO 11 Qualitative Analytical Software. Content analysis included thematic coding to potential health need categories, identification of special populations experiencing health issues, and identification of resources, as well as additional coding in accordance to the interview question guide. Results were aggregated to inform the determination of prioritized significant health needs and are presented later in this report.

Methods of Secondary Data Collection and Processing

This section serves as a brief overview of the general secondary data collection and processing approaches used to support the CHNA. Interested readers are referred to Appendix A and B for a more detailed description of the secondary data collection and processing and overall project methodology. Here, a brief overview of secondary data collection is given, followed by a general overview of several key project methodologies.

Secondary Data Collection

The conceptual model shown previously in Figure 4 was used to organize secondary data collection, which was particularly focused on identifying indicators that would illuminate those concepts organized under the health outcomes and health factor categories. A number of general principles guided the selection of secondary indicators to represent these concepts. First, only indicators associated with categories in the conceptual model 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. Third, indicators were only collected from data sources deemed reliable and reputable. Finally, indicators were only collected if they were possible to acquire at a reasonable cost. Based on these criteria, the following indicators were selected.

Health Outcomes

The majority of health outcome indicators can be divided between mortality data, primarily obtained from the California Department of Public Health (CDPH), and morbidity data, primarily obtained from the California Office of Statewide Health Planning and Development (OSHPD). These input data were processed using methods described in detail in Appendix A to result in a set of specific health outcome indicators. 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, as well as prevention quality indicators (PQIs), for each ZIP code in the HSA. Tables 2 and 3 list the specific indicators derived from these data sources[7].

Table 2: CDPH-derived health outcome indicators

By Cause Mortality:	Life Expectancy at Birth
Alzheimer's Disease	Years Potential Life Lost (75)
Cerebrovascular Disease (Stroke)	Age-Adjusted All-Cause Mortality
Chronic Liver Disease and Cirrhosis	Infant Mortality Rate
Chronic Lower Respiratory Disease	Low Birth Weight
Diabetes Mellitus	Female Mortality Rate
Diseases of the Heart	Male Mortality Rate
Essential Hypertension & Hypertensive Renal Disease	Teen Birth Rate*
Influenza and Pneumonia	
Intentional Self Harm (Suicide)	
Malignant Neoplasms (Cancer)	
Nephritis, Nephrotic Syndrome and Nephrosis (Kidney Disease)	
Unintentional Injuries (Accidents)	
All Other Causes	

*Indicator was not treated as a health outcome, but was included because it was derived from the same data source.

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[7] Due to space constraints not all indicators that were available for analysis will be mentioned in this report.

Table 3: OSHPD-derived health outcome indicators (hospitalization and ED visits)

Breast Cancer (H/ED)	Assault (H/ED)
Colorectal Cancer (H/ED)	Self-Inflicted Injury (H/ED)
Lung Cancer (H/ED)	Unintentional Injury (H/ED)
Prostate Cancer (H/ED)	Mental Health (H/ED)
Diabetes (H/ED)	Mental Health, Substance Abuse (H/ED)*
Heart Disease (H/ED)	Asthma (H/ED)
Hypertension (H/ED)	Chronic Obstructive Pulmonary Disease (COPD) (H/ED)
Nephritis, Nephrotic Syndrome and Nephrosis (Kidney Disease) (H/ED)	Hip Fractures (H/ED)
Stroke (H/ED)	Oral Cavity/Dental (H/ED)
HIV/AIDS (H/ED)	Total ED Discharge Rate (H/ED)
STI (H/ED)	Total H Discharge Rate (H/ED)
Tuberculosis (H/ED)	PQI (H)*

*Indicator was not treated as a health outcome, but was included because it was derived from the same data source.

Health Factors

The majority of health factor indicators used in the report were obtained from the US Census Bureau. These indicators primarily focus on the sociodemographic and housing characteristics of the population within the HSA, and are listed in Table 4. Additional health factor indicators were collected from a variety of other sources, and are listed in Table 5. Interested readers are referred to Appendix A for further details as to the sources and processing steps applied to these indicators.

Table 4: U.S. Census Bureau-derived health factor indicators

Total Population	Percent Civilian Noninstitutionalized Population with a Disability
Percent Asian (not Hispanic)	Percent Over 18 Who are Civilian Veterans
Percent Black (not Hispanic)	Percent 25 or Older Without a High School Diploma
Percent Hispanic (any race)	Percent Single Female-Headed Households
Percent American Indian (not Hispanic)	Percent Unemployed
Percent Pacific Islander (not Hispanic)	Percent Uninsured
Percent White (not Hispanic)	GINI Coefficient
Percent Other Race or Two or More Races (not Hispanic)	Median Income
Percent Minority (Hispanic or non-White)	Percent Families with Children in Poverty
Racial/Ethnic Diversity Index	Percent Households 65 years or Older in Poverty
Population 5 Years or Older Who Speak Limited English	Percent Single Female-Headed Households in Poverty
Population by Age Group: 0-4, 5-14, 15-24, 25-34,45-54, 55-64, 65-74, 75-84, and 85 and over	Percent on Public Assistance
Median Age	Percent with Income Less Then Federal Poverty Level

Percent Non-Citizen	Average Population per Housing Unit
Percent Female	Percent Renter-Occupied Housing Units
Percent Foreign Born	Percent Vacant Housing Units
Percent Male	Percent Households with No Vehicle

Table 5: Remaining health factor indicators

Population Living Near a Transit Stop	Modified Retail Food Environment Index (mRFEI)
Pollution Burden	Park Access
Current Smokers	Health Professional Shortage Areas (Primary Care, Dental, Mental Health)
Binge Drinking	Major Crime Rate
Obesity	Traffic Accidents Resulting in Fatalities
Food Deserts	

Community Health Vulnerability Index (CHVI)

A subset of the demographic Health Factor indicators (shown in Table 6) was also used to create the Community Health Vulnerability Index (CHVI), a composite index used to help understand the distribution of health disparities within the HSA. Like the *Community Needs Index (CNI)*[8] on which it was based, the CHVI combines multiple sociodemographic and housing indicators to help identify those locations experiencing greater health disparities. The CHVI differs from the CNI in the manner in which its indicators are combined. Higher CHVI values indicate a greater concentration of groups supported in the literature as being more likely to experience disparities. Interested readers are referred to Appendix A for further details as to its construction.

Table 6: 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	

Report Processes

The analytical processes for this CHNA were designed with care to allow for a tight integration of both qualitative and quantitative data sources. This integration allowed the strength of each approach to buttress the weakness in the other. Secondary quantitative data is useful because it provides a broad and consistently defined view of conditions within the HSA. However its use is limited based on data availability; also, because it lacks the context necessary to provide true understanding, and because its collection is planned ahead of time, it is less useful in identifying emerging trends. While primary qualitative data can sometimes be anecdotal and strongly influenced by the sources from which it is derived, when done well it excels in providing needed context, an understanding of lived experiences, and

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[8] Barsi, E. and Roth, R. (2005) The Community Needs Index. *Health Progress*, Vol. 86, No. 4, pp. 32-38.

an ability to detect new, unanticipated trends or concepts. The sections that follow describe how qualitative and quantitative data were integrated in key CHNA processes -- identifying Communities of Concern, and identifying and prioritizing significant health needs.

Identifying Communities of Concern

A key element of the CHNA methodology is the identification of Communities of Concern, geographic areas or population sub-groups within the HSA that have the greatest concentration of poor health outcomes and are home to more medically underserved, low income and diverse populations at greater risk for poorer health. Communities of Concern are important to the overall CHNA methodology because, after assessing the HSA more broadly, they allow for a focus on those portions of the HSA likely experiencing the greatest health disparities.

Geographic Communities of Concern were identified using a combination of primary and secondary data sources. A general description of this process is provided here; interested readers are referred to Appendix B for a more in-depth description. Four secondary data factors were considered in determining if ZIP codes within the HSA would be identified as geographic Communities of Concern: whether or not they were included as Communities of Concern identified in the 2013 CHNA; if they intersected Census tracts with CHVI scores within the highest 20% in the HSA; and if they consistently had among the highest morbidity and mortality indicator values in the HSA. ZIP codes that met at least two of these four criteria were combined with the list of geographic locations consistently mentioned in initial area-wide primary data to result in a final set of geographic Communities of Concern. Population subgroups of concern were identified solely based on the results of primary data.

Identifying Significant Health Needs

A major requirement of the CHNA was the identification of significant health needs. A general description of the process used in this report is given here; interested readers are referred to Appendix B for a more detailed description.

Significant health needs were identified through an integration of both qualitative and quantitative data. The process began by generating a broad list of 10 potential health needs that could exist within the HSA. This list was based on health needs identified in the previous Sutter Amador Hospital report during the 2013 CHNA process, as well as a preliminary review of primary data. Once this list was created, both quantitative and qualitative indicators associated with each potential health need were identified in a crosswalk table. While all of these needs exist within the HSA to a greater or lesser extent, the purpose here was to identify those which were most significant.

Rates for those secondary indicators associated with the potential health needs were reviewed for each Community of Concern to determine which indicators were consistently problematic within the HSA. Next, this set of problematic indicators was compared, via the crosswalk table, to the potential health needs to select a subset of potential health needs for consideration as significant health needs. Primary data sources were also analyzed using the crosswalk table to identify potential health needs for consideration as significant health needs. The results from the primary and secondary potential health needs analyses were then merged to create a final set of significant health needs. (For a more detailed explanation of the processes used to identify significant health needs see Appendix B).

Prioritizing Significant Health Needs

Once significant health needs were identified through the process described above, they were prioritized based on an analysis of primary data. The percent of all primary data sources that referenced each health need and the average number of times health need was mentioned by all sources were measured, and the significant health needs were ranked based on a combination of these measures. The significant health need with the highest combined value was identified as having the highest priority, then with the second highest value, the second priority, and so on to the significant health need with the lowest combined values given the lowest priority.

Findings

Communities of Concern

Analysis of both primary and secondary data revealed six ZIP codes that met the criteria to be classified as a Community of Concern. These are noted in Table 7, with the census population provided for each, and are further displayed in Figure 5.

Table 7: Identified Communities of Concern for the SAH HSA

ZIP Code	Community/Area*	Population
95601	Amador City	139
95629	Fiddletown	949
95640	Ione	10,825
95642	Jackson	6,705
95666	Pioneer	5,525
95669	Plymouth	2,864
Total Population in Communities of Concern		27,007
Total Population in the HSA		58,906
Percent of the HSA		46%

(Source: US Census, 2013)
* ZIP code and community area name is approximate here and throughout the report.

Interviews with community health experts validated the findings of these secondary data. When asked to identify areas within the HSA with significant, unmet health needs, many participants referred to the more populated areas of Jackson and Ione, as well as the "Upcountry" areas of that exist along the two major highways in the county, Hwy 49 and Hwy 88. The "Upcountry" areas mentioned included Plymouth, Pioneer, Fiddletown, Harbor Pines, and Pine Grove.

Figure 6 displays the SAH ZIP code Communities of Concern with diagonal hash marks denoting them from the rest of the HSA area.
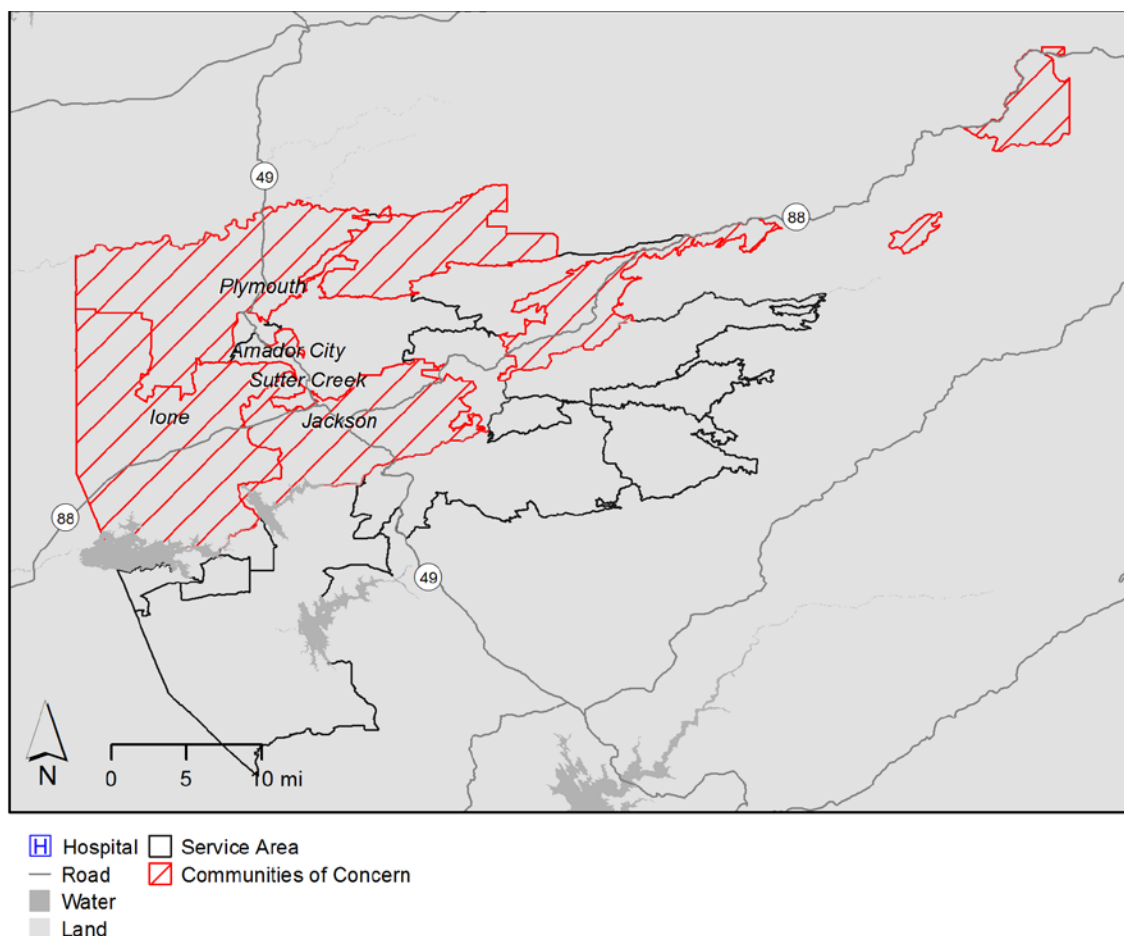
Figure 6: Communities of Concern in the SAH HSA

The Community Health Vulnerability Index for Communities of Concern

As described previously in this report, the CHVI assists in the identification of geographical areas through the HSA that may be experiencing health disparities based on socioeconomic drivers of poor health outcomes. The CHVI results for the SAH HSA are presented in Figure 6 with the identified Communities of Concern denoted by the diagonal lines.

Examination of vulnerability within the HSA showed drastic differences between census tracts. As can be seen clearly in Figure 7, many ZIP codes contained census tracts in the "most vulnerable" category of the CHVI ranking[9]. This was especially true for the ZIP code areas of 95669 (Plymouth), 95640 (Ione), 95642 (Jackson) 95665 (Pine Grove) and 95666 (Pioneer). All ZIP codes containing census tracts with high CHVI index values will be examined in this report as an SAH ZIP code Community of Concern.

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[9] The CHVI is calculated so that its values represent relative levels of vulnerability, and its numbers vary based on the areas for which it is calculated. What is most important in interpreting the CHVI is not the actual numbers, but their relative ranking, where higher values are associated with higher "vulnerability" (or disadvantage), and lower values with lower vulnerability.
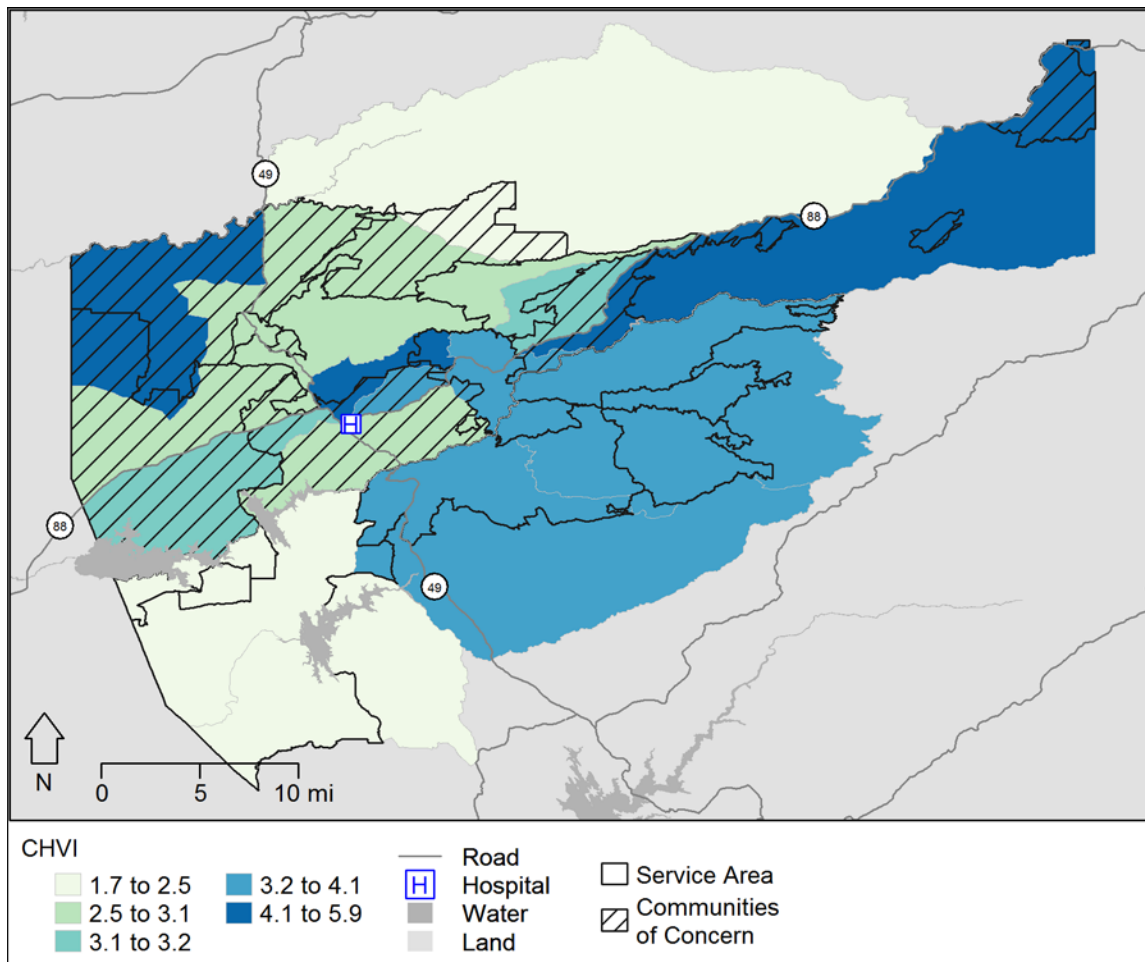
Figure 7: CHVI for the SAH HSA

Specific Populations Experiencing Disparities in Communities of Concern

When community health experts were asked to identify specific populations residing in communities experiencing health disparities, they consistently cited veterans, older residents, and residents of Hispanic/Latino origin. Experts stressed the large number of veterans in the areas, citing the county with one of the largest percentage of veterans in the state of California. Also, many county residents are older and retired, some living in poverty and lower income areas of the county. Lastly, some participants mentioned a noticeable amount of residents of Hispanic/Latino decent, stating of which many may be undocumented.
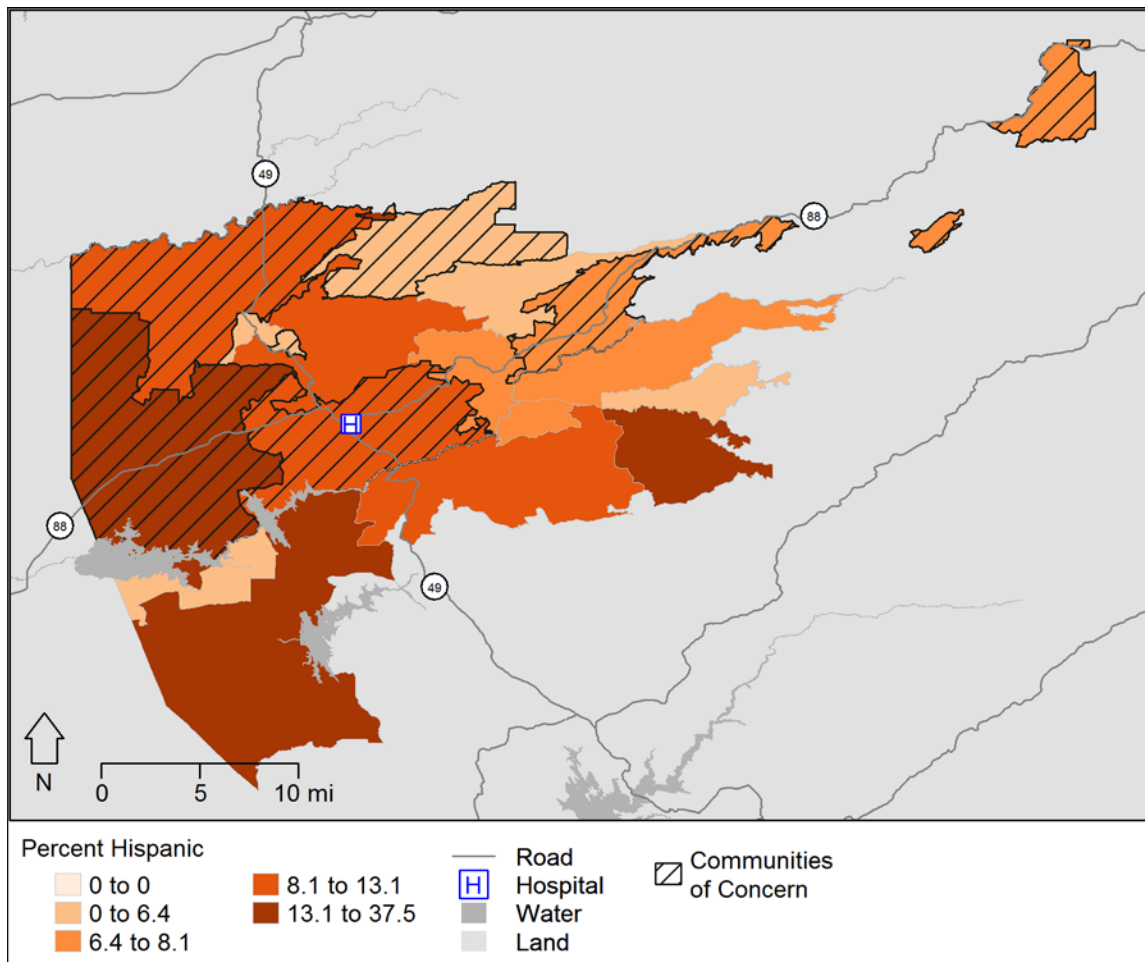
Figure 8: Percent Hispanic by ZIP code

As mentioned by area key informants and community members, the SAH HSA has many areas with a generous amount of Hispanic residents. As Figure 8 shows, the majority of Hispanic residents resided in ZIP code 95640 (Ione) among the six Communities of Concern.
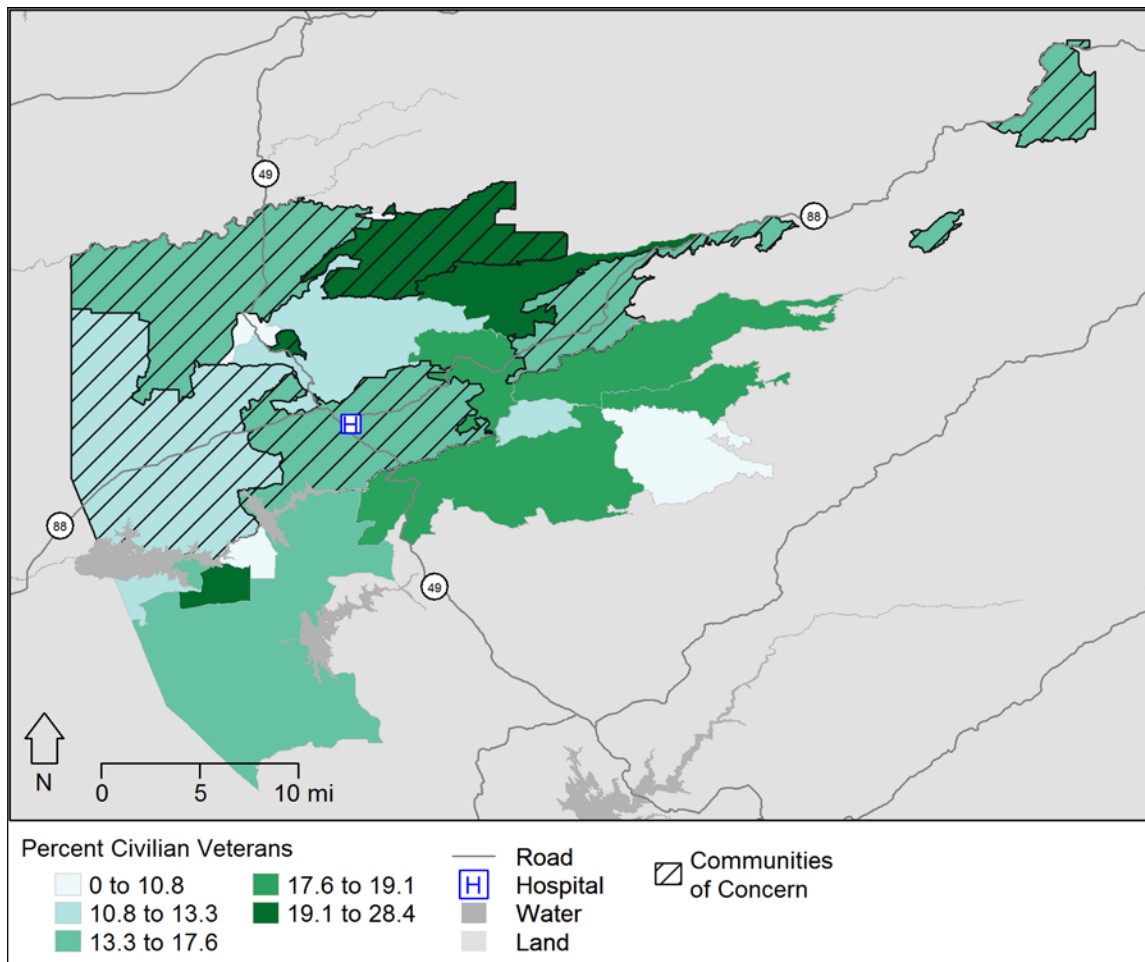
Figure 9: Percent of Military Veterans

In addition, many community members and key informant stressed the large amount of military veterans living in the Amador HSA. The percent of residents that were military veterans was 6.7% for the state, compared to the Amador county percentage at 14.8% and the Calaveras County percentage of 14.3%. Both of these county percentages were more than twice that of the state. For additional comparison the percentage of veterans in nearby Sacramento County was 8.8%. As Figure 8 shows, more veterans lived in the Communities of Concern of 95629 (Fiddletown) and 95601 (Amador City); as well as the ZIP codes of 95225 (Burson) and 95689 (Volcano) (not Communities of Concern).

Prioritized, Significant Health Needs in Communities of Concern

Figure 10 displays the ten significant health needs for the HSA in prioritized order. Prioritization was based on a combination of the percent of all primary data sources that referenced the PHN as a current, significant health need, shown by the blue portion of the bar, and the average number of times the PHN was referenced across all primary data sources, shown by the red portion of the bar

SAH Prioritized Health Needs

Health Need	Percent	Average
Access to Mental, Behavioral, and Substance Abuse Services	91%	6.9
Access to Quality Primary Care Services and Prescriptions	100%	4.9
Access to Transportation and Mobility	91%	3.5
Access to Basic Needs	82%	2.8
Access to Speciality Care	73%	1.4
Access to Health Education and Health Literacy	64%	1.6
Access to Affordable, Healthy Food	55%	1.4
Access to Dental Care and Prevention	45%	0.8
Safe and Violent free Environment	36%	1.1
Pollution Free Living	18%	0.5

■ Percent of all sources that referenced health need

■ Average number of times health need was referenced across all sources

Figure 10: Prioritized significant health needs for SAH Communities of Concern

The identified significant health needs for the SAH Communities of Concern are listed in prioritized order. Secondary data indicators that had undesirable rates in the Communities of Concern are listed in the table below each significant health need. Qualitative themes that emerged during analysis are also provided in the table.

1. Access to Mental, Behavioral, and Substance Abuse Services
The highest priority significant health need for the SAH HSA was access to mental, behavioral, and substance abuse services. Individual health and well-being are inseparable from individual mental and emotional outlook. Coping with daily life stressors is challenging for many people, especially when other social, familial, and economic challenges also occur. Adequate access to mental, behavioral, and substance abuse services helps community members to obtain additional support when needed.

Quantitative Indicators	Qualitative Themes
• Mental health ED visits • Mental health hospitalizations • Substance abuse ED visits • Substance abuse hospitalizations • Health Professional Shortage Area -- Mental Health	• No psychiatric facility or psychiatrist in the county • Very few providers that provide mental health treatment in the county • County public health offers mental health treatment for Medi-cal members (15% of the county population is on Medi-cal) • Lack of access means a delay in treatment for mental health issues • Lack of access during crisis results in high reliance on local emergency department • High veteran population with PTSD and mental health issues • Drug abuse contributes to poor mental health • No sober living treatment house in county • High suicide rates in older and middle aged White males

2. Access to Quality Primary Care Health Services

The second highest priority significant health need for the SAH HSA was access to quality primary care health services. Primary care resources include community clinics, pediatricians, family practice physicians, internists, nurse practitioners, pharmacists, telephone advice nurses, and similar. Primary care services are typically the first point of contact when an individual seeks healthcare. These services are the front line in the prevention and treatment of common diseases and injuries in a community.

Quantitative Indicators	Qualitative Themes
• Total ED visits (utilization) • Total hospitalizations (utilization) • Health Professional Shortage Area – Primary Care	• Large percent of residents in county are seniors and/or veterans indicating a higher need for medical care • Lack of medical providers in the area – especially lack of Medi-cal providers • Long wait period to get an appointment for care • Recruitment for medical providers to work in the county is needed • Emergency department is consistently busy – long wait for care • One of the major Medi-cal plans for care under ACA is not taken in the county by a single provider

3. Access to Transportation and Mobility

The third highest priority significant health need for the SAH HSA was access to transportation and mobility. Having access to transportation services to support individual mobility is a necessity of daily life. Without transportation, individuals struggle to attain their basic needs, including those that promote and support a healthy life.

Quantitative Indicators	Qualitative Themes
• Percent of population living within one-half mile of public transit • Percent of population with no vehicle	• Lack of services in the county results in the need for stable, reliable, and affordable transportation. • All veteran affairs benefits are outside of the county requiring long transportation times to acquire care • No specialty care in the county • Lack of access to mental health treatment and care in the county requires residents to travel far distances to access care. Unsafe during a mental health crisis. • Amador Transit has a limited route and doesn't operate on the weekends. Getting to the transit stop is equally difficult due to the distance from the transit stop. • Access to healthy foods for "Upcountry" communities is hard without transportation

4. *Access to Basic Needs, such as Housing and Employment*

The fourth highest priority significant health need for the SAH HSA was access to basic needs such as housing and jobs. Access to affordable and clean housing, stable employment, quality education, and adequate food for good health are vital for survival. Maslow's Hierarchy of Needs[10] says that only when members of a society have their basic physiological and safety needs met can they then become engaged members of society and self-actualize or live to their fullest potential, including their health.

Quantitative Indicators	Qualitative Themes
• Life expectancy at birth • Median household income • Percent of population below federal poverty level • Percent of population with no high school diploma • Percent of population on public assistance • Percent of population unemployed	• Lack of affordable housing in the county • Lack of employment opportunities in the county • Generational poverty – lack of access to opportunities for education and employment • Homelessness in adults, especially veterans, and teens. Living "off the grid." • Lack of access to obtain an advanced degree in county – county lacking a formal relationship with a local college/university • High number of people on public assistance • Many people live with food insecurity

5. *Access to Specialty Care*

The fifth highest priority significant health need for SAH HSA was access to specialty care. Specialty care services are those devoted to a particular branch of medicine and focus on the treatment of a particular disease. Primary and specialty care go hand-in-hand, and without access to specialists such as endocrinologists, cardiologists, and gastroenterologists community residents are often left to manage chronic diseases such as diabetes and high blood pressure on their own.

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[10] McLeod, S. (2014). *Maslow's Hierarchy of Needs.* Retrieved from: http://www.simplypsychology.org/maslow.html

Quantitative Indicators	Qualitative Themes
• Diabetes hospitalizations • Heart disease hospitalizations • Hypertension hospitalizations • Kidney disease hospitalizations • Stroke hospitalizations	• Lack of specialty care in the county • No dialysis centers and/or cancer treatment providers in the county • Lack of pain management providers, eye care specialists in the county • Only one long term care facility in county

6. Access to Health Education

The sixth highest priority significant health need for the SAH HSA was access to health education. Knowledge is important for individual health and well-being, and health education interventions are powerful tools to improve community health. When community residents lack adequate information on how to prevent, manage, and control their health conditions, those conditions tend to worsen. Health education around infectious disease control (e.g. STI prevention, influenza shots) and intensive health promotion and education strategies around the management of chronic diseases (e.g. diabetes, hypertension, obesity, and heart disease) are important for community health improvement.

Quantitative Indicators	Qualitative Themes
• Smoking rates - County • HIV/AIDS ED visits • STI ED visits • Unintentional injuries ED visits • Unintentional injuries hospitalizations • Diabetes ED visits • Diabetes hospitalizations • Heart disease ED visits • Heart disease hospitalizations • Hypertension ED visits • Hypertension hospitalizations • Kidney disease ED visits • Kidney disease hospitalizations • Stroke ED visits • Stroke hospitalizations	• Large percent of county residents are seniors and/or veterans indicating a larger occurrence of chronic illnesses o Conditions mentioned: Diabetes, heart disease, hypertension, stroke, cancer, COPD • Significant need for chronic disease management care and prevention • High smoking rate in county • Need for drug abuse prevention and education

7. Access to Affordable, Healthy Food

The seventh priority significant health need for the SAH HSA was access to affordable, healthy foods. Eating a healthy diet is extremely important for one's overall health and well-being. When access to healthy foods is challenging for community residents, many turn to unhealthy foods that are convenient,

affordable, and readily available. Communities experiencing social vulnerability and poor health outcomes often are overloaded with fast food and other establishments where unhealthy food is sold.

Quantitative Indicators	Qualitative Themes
• Diabetes ED visits • Diabetes hospitalizations • Heart disease ED visits • Heart disease hospitalizations • Hypertension ED visits • Hypertension hospitalizations • Kidney disease ED visits • Kidney disease hospitalizations • Stroke ED visits • Stroke hospitalizations • Modified Retail Food Equivalency Index (mRFEI)	• Lower access to healthy food in the "Upcountry" areas of the county • Healthy food is more expensive • Food bank serves a large amount of county residents living with food insecurity • Challenging to grow own food due to wildlife issues – need fencing to keep out deer and other animals.

8. Access to Dental Care and Prevention

The eighth priority significant health need for SAH HSA was access and dental care and prevention. Oral health is important for overall quality of life. When individuals have dental pain, it is difficult to eat, concentrate and fully engage in life. Poor oral health impacts the entire body, especially the heart, digestive and endocrine systems.

Quantitative Indicators	Qualitative Themes
• Dental illness ED visits	• No Denti-cal (Medi-cal) providers in the county • Lack of providers in the county to provide dental care • Lack of providers results in pulling of teeth during dental emergencies

9. Safe and Violence-Free Environment

The ninth priority significant health need for the SAH HSA was safe and violence-free environments. Feeling safe in one's home and community are fundamental to overall health. Next to having basic needs met (food, shelter, clothing) is physical safety. Feeling unsafe affects the way people act and react to everyday life occurrences.

Quantitative Indicators	Qualitative Themes
• Mental health ED visits • Mental health hospitalizations • Substance abuse ED visits • Substance abuse hospitalizations • Assault ED visits • Fatal traffic accidents • Percent of population living ½ mile from park	• Safety issues related to isolation in the rural environment • Few parks in the area – children cannot play outside due to wildlife safety concerns (snakes, deer, etc.), far from neighbors, few areas in the county for structured play • No formal trail system in the county • Few areas have sidewalks for traveling safely by foot – including walking to school • Crimes related to drug usage • Domestic violence in the county was mentioned

10. *Pollution-Free Living Environment*

The tenth priority significant health need for SAH HSA was a pollution-free living environment. Living in a pollution-free environment is essential for health. Individual health is determined by a number of factors, and some models show that one's living environment, including the physical (natural and man-made) and socio-cultural environment, has more impact on individual health than one's lifestyle, heredity, or access to medical services.[11]

Quantitative Indicators	Qualitative Themes
• Asthma ED visits • COPD ED visits • Asthma hospitalizations • COPD hospitalizations • Percent smokers	• Old mining area along highway 49 "the Golden Chain Highway" may expose families to increased risk for cancer • Many area families drink well water • Nuclear plant located in the county

Health Outcomes in Communities of Concern --Length of Life and Quality of Life

Examination of health outcomes in the assessment included measures of morbidity and mortality. The conditions examined included the major categories of chronic disease, mental health, unintentional injury, cancer, respiratory health and dental health. In addition, all-cause mortality, infant mortality and life expectancy at birth are also detailed. Data examined includes CDPH mortality data by ZIP code and OSHPD ED visits and hospitalizations by condition.

Overall Health Status (Age-Adjusted Morality, Infant Mortality, and Life Expectancy at Birth)

Various quantitative indicators helped to provide information about what it feels like to live in a community on an everyday basis. Though specific measures of mortality show how community members suffered related to specific conditions, in which interventions are designed to focus specifically on the prevention and/or treatment for that cause, overall health status indicators communicate length of life, quality of life, socioeconomic factors and the intersection of the environment and personal behaviors. Table 8 examines three common overall health status indicators: age-adjusted all-cause mortality, infant

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[11] See Blum, H. L. (1983). *Planning for Health*. New York: Human Sciences Press

mortality, and life expectancy at birth for each of the SAH Communities of Concern. NOTE: In this table, and all that follow, any indicator that exceeded any benchmark is highlighted.

Table 8: Overall health status indicators: Age-adjusted all-cause mortality, infant mortality, and life expectancy at birth compared to county, state, national and Healthy People 2020 benchmarks.

	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	95601	N/A	N/A	87.0
	95629	N/A	N/A	N/A
	95640	70.23	N/A	78.3
	95642	83.13	4.68	76.2
	95666	58.45	N/A	81.6
	95669	58.91	4.76	83.2
	SAH HSA	*68.85*	*5.04*	*80.0*
	Amador County	*68.47*	*2.40*	*79.1*
	CA State	*64.59*	*4.9*	*80.5*
	National 2013	*N/A*	*N/A*	*78.8[12]*
	Healthy People 2020 Target	*N/A*	*6.0[13]*	*N/A*

(Source: CDPH, 2010-2012) Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

Examination of overall health status indicators showed that ZIP code 95642 (Jackson) had poorer rates, compared to any other ZIP code, for the Age adjusted all-cause mortality, infant mortality rate and life expectancy. This ZIP codes' rate for age-adjusted, all-cause mortality sits clearly above the other ZIP codes at 83.13 deaths per 10,000 – higher than the next highest rate of 70.23 deaths per 10,000 in ZIP code 95640 (Ione), the county benchmark at 68.47 deaths per 10,000, and the state benchmark at 64.59 deaths per 10,000. Additionally, ZIP codes 95669 (Plymouth) and 95642 (Jackson) both had higher infant mortality rates than the state benchmark at 4.9 deaths per 1,000 live births.

Life expectancy at birth has gained notoriety in recent "place matters" campaigns.[14] These campaigns note that where someone lives can be a predictor life expectancy. Life expectancy at the national level currently sits at 78.8 years, both the California state rate and Amador County rate for life expectancy are better than the national level. However, ZIP codes 95642 (Jackson) and 95640 (Ione) had shorter life expectancy rates than the national average rate.

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[12] 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

[13] 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

[14] Policy Link. (2007) *Why Place Matters: Building a Movement for Healthy Communities*. Retrieved from: http://www.policylink.org/sites/default/files/WHYPLACEMATTERS_FINAL.PDF

Chronic Diseases (Diabetes, Heart Disease, Stroke, Hypertension, and Kidney Disease)

Chronic diseases, specifically diabetes, heart disease, stroke, hypertension, and kidney disease are among the top leading causes of death in the nation[15]. These were commonly mentioned as health conditions that SAH residents struggled with. Key informants and community members spoke about the large number of older residents in the area, thereby increasing the risk for higher prevalence of chronic disease occurrence. An evaluation of quantitative data also revealed clear geographical disparities for these outcomes. Data for these conditions in the Communities of Concern is provided.

Diabetes

Table 9 displays rates of mortality, ED visits, and hospitalizations due to diabetes for each Community of Concern.

Table 9: 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
	95601	N/A	663.54	415.80
	95629	N/A	429.47	408.21
	95640	2.05	311.17	196.81
	95642	2.03	443.19	228.07
Diabetes	95666	2.07	310.75	234.19
	95669	2.37	280.49	193.88
	SAH HSA	2.01	278.73	205.02
	Amador County	1.59	321.21	208.13
	CA State	*2.10*	*210.90*	*194.0*
	Healthy People 2020	*6.6*	*N/A*	*N/A*

(Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013) Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

The SAH HSA mortality rate for diabetes was higher than the Amador county benchmark but lower than the state and Healthy People 2020 benchmark. The highest rate of mortality due to diabetes was found in ZIP code 95669 (Plymouth). All six Communities of Concern had rates for ED visits due to diabetes that were above the state benchmark with the highest rates in ZIP codes 95601 (Amador City) and 95629 (Fiddletown)... Both of these communities have small population sizes. ZIP code 95642 (Jackson) also had a high rate of ED visits due to diabetes. The same pattern was true for hospitalizations due to diabetes.

Key informants and community members consistently mentioned diabetes as a main health condition among community members. However, what was of particular concern for area residents and providers was the lack of specialists and dialysis centers in the county to help individuals living with diabetes avoid further health related complications.

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

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. [16] Key informants and community members mentioned heart disease and high cholesterol as common conditions for area residents. Table 10 examines rates for mortality, ED visits, and hospitalizations due to heart disease.

Table 10: Mortality, ED visit and hospitalization rates for heart disease compared to county, state, and Healthy People 2020 benchmarks (rates per 10,000 population)

	ZIP Code	Mortality	ED Visits	Hospitalizations
Heart Disease	95601	N/A	229.09	311.02
	95629	N/A	274.65	507.16
	95640	14.79	182.77	206.63
	95642	38.75	294.89	324.39
	95666	27.29	181.98	247.51
	95669	21.89	186.79	235.15
	SAH HSA	20.75	185.53	243.45
	Amador County	*27.8*	213.61	258.80
	CA State	*15.8*	*70.80*	*143.00*
	Healthy People 2020	*10.1*	*N/A*	*N/A*

(Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013) Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

The SAH HSA rate for mortality due to heart disease was drastically higher than the state benchmark and two times the Healthy People 2020 benchmark. Four of the six Communities of Concern had rates for ED visits due to heart disease that exceeded the state. The highest rate was seen in the ZIP code 95642 (Jackson) at more than four times the state benchmark. All six Communities of Concern had rates for hospitalizations due to heart disease that were much higher than the state.

Stroke, Hypertension and Kidney Disease

Stroke was the fifth leading cause of death at the national level in 2013.[17] Approximately 800,000 people have a stroke each year, with the most common type those which restrict blood flow to the brain.[18] Tobacco smoking and hypertension drastically increase risk for stroke. Hypertension is common in approximately 1 out of every 3 adults.[19] Both stroke and hypertension are discussed together here. Hypertension also increases risk for kidney diseases, along with heart disease and diabetes. Tables 11, 12, and 13 examine mortality, ED visits, and hospitalizations related to stroke, hypertension, and kidney disease.

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

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

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

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

Table 11: 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
	95601	0	N/A	N/A
	95629	0	N/A	126.39
	95640	3.23	30.39	53.32
	95642	4.69	36.44	107.84
Stroke	95666	3.13	18.88	66.36
	95669	4.11	33.62	79.30
	SAH HSA	4.16	25.44	70.76
	Amador County	5.30	32.22	75.47
	CA State	*3.60*	*20.30*	*56.10*
	Healthy People 2020	*3.40*	*--*	*--*

(Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013) Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

The mortality rate for the HSA due to stroke was higher than the state and Healthy People 2020 benchmarks. The highest rate was seen in ZIP code 95642 (Jackson). For ED visits due to stroke, the rate for the HSA and three Communities of Concern were clearly higher than the state benchmark. The HSA rate and four Communities of Concern had hospitalization rates due to stroke above the state benchmark.

Table 12: 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
	95601	0	1107.55	689.02
	95629	0	1147.85	987.59
	95640	1.15	677.88	465.77
	95642	0	1231.37	688.75
Hypertension	95666	1.26	797.88	484.50
	95669	0	716.40	523.50
	SAH HSA	1.29	709.47	520.81
	Amador County	*N/A*	842.42	546.99
	CA State	*1.20*	*412.6*	*387.2*

(Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013) Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

Both the HSA rate and the rate of mortality due to hypertensions in ZIP code 95666 (Pioneer) were above the state benchmark. For ED visits and hospitalization due to hypertension, all six Communities of Concern and the HSA had rates that were clearly above the state benchmark. The small population areas of 95601 (Amador City) and 95629 (Fiddletown) had high rates. In addition the Jackson ZIP code of 95642 had the highest rate for ED visits and the third highest rate for hospitalizations.

Qualitative data findings support the data presented above. Many key informants and residents discussed the need to control hypertension in the community.

Table 13 examines ED visits and hospitalization rates due to kidney diseases.

Table 13: ED visit and hospitalization rates for kidney diseases compared to county and state benchmarks (rates per 10,000 population)

	ZIP Code	ED Visits*	Hospitalizations*
Kidney Disease	95601	0	193.63
	95629	168.29	451.03
	95640	69.67	156.39
	95642	67.07	257.78
	95666	45.16	195.94
	95669	59.53	224.13
	SAH HSA	54.81	191.52
	Amador County	60.73	199.04
	CA State	57.60	161.50

(Sources: ED visits and hospitalizations: OSHPD, 2011-2013)
*OSHPD data includes data for nephritis, nephrotic syndrome, and nephrosis

The small community of ZIP code 95629 (Fiddletown) had the highest rate of ED visits and hospitalizations due to kidney disease. In addition, three other Communities of Concern had ED visit rates and four other Communities of Concerns had hospitalization rates above the state benchmark for kidney disease.

Mental Health and Self Inflicted Injury

The lack of access to mental health services and the number of community members who struggle to cope with mental illness and substance abuse was a main finding of this community health assessment. Area experts and community members consistently reported the great difficulty that service area residents had in accessing treatment for mental illness, especially access to a psychiatrist for treatment. As mentioned previously in this report, access to mental health and substance abuse treatment was the number one prioritized significant health need for the SAH HSA. Included in this section of the report are ED visits and hospitalizations related to mental health conditions, substance abuse, and suicide/self-inflicted injury.

Mental Health

Table 14 provides data on ED visits and hospitalization related to mental illness.

Table 14: 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 (Overall)	95601	513.87	468.77
	95629	249.86	388.85
	95640	204.24	189.28
	95642	458.13	288.7
	95666	174.29	171.06
	95669	195.82	199.74
	SAH HSA	216.65	201.28
	Amador County	246.8	211.67
	CA State	153.6	188.6

(Source: OSHPD, 2011-2013)

All Communities of Concern had rates of ED visits due to mental health issues that exceeded the state benchmark, and three that exceeded the county benchmark. Small population ZIP code 95601 (Amador City) had the highest rate at 513.87 ED visits due to mental illness, with ZIP code 95642 (Jackson) having the second highest rate. Hospitalization rates due to mental health issues were higher than the state benchmark in five out of six Communities of Concern.

Key informants and community members consistently spoke about the lack of mental health and substance abuse treatment services available for HSA residents. Mental illness and access to treatment was mentioned in virtually every key informant interview and focus group, saying that many residents of the community struggle with mental health issues ranging from advanced mental illness to needing help coping with everyday life stressors. The most prevalent finding was the intense need for a practicing psychiatrist in the county. Most participants spoke about the lack of a psychiatrist in the county, stating that only those residents of the county on Medi-cal have access to a provider locally, and even that access is limited. As one provider stated, *"We do not have a psychiatrist available except as employed by the county for the sliver of the population that is on Medi-Cal" (KI_8)*. Another provider stated, *"There's nothing. There's (county) behavioral health here, but if you're not on Medi-cal (Medicaid) you can't qualify here and even if you can, you can make one appointment every two months with your therapist" (KI_4)*.

A local medical provider also stated:

> *So, 85% of the people that live in this county can't get mental health services from a psychiatrist... from a doctor, from someone who can make a diagnoses and write a prescription and no other services are available, but those are the services that people need when they are severely disturbed, or they have psychosis, they need a diagnoses. If the diagnoses mandates the proper medication, we don't have access to that in this county. (KI_2)*

Along with the issue of access participants stressed concern about residents having to leave the county to receive care for mental health issues. A lack of access in the county means that residents must travel long distances to access care. As one provider stated *"I have people that need counseling. It's not available here. Then you tell somebody that's already stressed out that they have to drive to Sacramento to get care" (KI_4)*.

Another provider said,

> *It's hard enough for these people to reach out in the first place if they're suffering. It's hard enough for them to reach out. And then the fact that they have to reach out and then they have to motivate themselves to get all the way (to Sacramento), especially a situation when they don't have a car, it's just --. (KI_8)*

Participants also stressed the need for increased access to mental health treatment for veterans living in Amador County, as mentioned previously in this report. For many veterans of Amador County, who may have dual VA benefit coverage and Medicare coverage, treatment under VA benefits is available only outside the county lines, even further exacerbating a lack of access to care for mental health issues. As one provider stated,

> *The biggest things I've heard since organizing this event for veterans is the lack of mental health in this community and transportation being a problem because all of our veterans have to go to either Tuolumne or Sacramento and it's a long drive. (KI_8)*

Another provider provided this perspective:

> *And to tell a 73-year-old man that he has to drive from up country to Mather, a 2-hour drive in the middle of the winter when it's snowing or a 20-year-old veteran that has mental health issues and doesn't have a job or a car and he has to go all the way to another county. (KI_8)*

Suicide and Self-Inflicted Injury

Table 15 displays mortality rates due to suicide, and ED visits and hospitalizations due to self-inflicted injury for the six Communities of Concern.

Table 15: 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	95601	0	N/A	N/A
	95629	0	N/A	N/A
	95640	1.47	18.53	6.09
	95642	2.17	11.72	6.37
	95666	0	9.89	N/A
	95669	0	N/A	N/A
	SAH HSA	1.43	9.28	3.2
	Amador County	*2.91*	12.80	5.12
	CA State	*1.04*	*8.20*	*4.4*
	Healthy People 2020	*1.0*	*N/A*	*N/A*

(Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013) Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

Mortality due to suicide was elevated in only two of the six Communities of Concern. ZIP code 95642 (Jackson) had the highest rate of suicide in the HSA at more than twice the state and Healthy People 2020 benchmarks. The other ZIP code Community of Concern with a high rate for suicide was ZIP

code 95640 (Ione). These two ZIP codes also had the highest rates of ED visits and hospitalizations due to self-inflicted injuries.

Suicide was mentioned by area key informant providers as a significant concern. One provider stated, *"In a study about suicide rates and I can tell you that between 2010 and 2014 there were a total of 62 suicide deaths in the county, an average of twelve and a half per year" (KI_3)*. Another provider mentioned the high rate of suicide in the area especially among "middle aged males" and indicated that it is highly related to isolation. She added that although many people move to Amador County for the serene isolated rural environment, when difficult times occur in their life the isolation can exacerbate illness, especially mental illness.

Unintentional Injury

Unintentional injury is the fourth leading cause of death in the nation and the leading cause of death for children and teens.[20] [21] National data shows that most deaths related to unintentional injuries for young people result from motor vehicle accidents, followed by drowning, fire, falls, and poisoning. Included in this section of the report is ED visits and hospitalizations related to unintentional injuries. In the health factors section of the report data on fatal traffic accidents, major crimes, and assault are detailed. Table 16 examines mortality, ED visits, and hospitalizations related to unintentional injuries.

Table 16: Mortality, ED visit and hospitalization rates due to unintentional injury compared to county, state and Healthy People 2020 benchmarks (rates per 10,000 population)

	ZIP Code	Mortality	ED Visits	Hospitalizations
Unintentional Injury	95601	0	2442.72	230.17
	95629	0	1496.74	336.11
	95640	4.83	879.76	167.3
	95642	2.88	1714.02	254.94
	95666	4.65	1094.96	181.37
	95669	2.99	879.37	190.12
	SAH HSA	3.64	1054.33	195.32
	Amador County	5.03	1150.48	198.87
	CA State	2.90	671.30	155.50
	Healthy People 2020	3.40	N/A	N/A

(Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013) Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

Morality due to unintentional injuries was elevated in four of the six Communities of Concern, with the highest rates in ZIP codes 95640 (Ione) and 95666 (Pioneer). All six Communities of Concern had elevated rates of ED visits and hospitalizations due to unintentional injuries. Small population ZIP codes 95601 (Amador City) and 95629 (Fiddletown) had the high rates for ED visits, along with the more densely

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[20] US National Library of Medicine: MedlinePlus. (2016). *Death among children and adults*. Retrieved from: https://www.nlm.nih.gov/medlineplus/ency/article/001915.htm

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

populated ZIP codes areas of 95642 (Jackson) and 95666 (Pioneer). A similar geographical patterns was evident for hospitalization rates.

Cancers

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[22]. In an attempt to gain a better understanding of how the Communities of Concern are affected by cancer, the assessment included the examination of cancer incidence at the county level, as well as cancer mortality and ED visits and hospitalizations for specific causes of cancer. County level all-cause cancer incidence and mortality data were used. ZIP code level incidence for all-cause cancer and specific cancers were not available for this assessment. ZIP code level data on ED visits and hospitalizations due to lung cancer, colorectal cancer, prostate cancer, and female breast cancer were selected for the assessment and are also detailed. 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.

Cancer Incidence

Cancer incidence helps to communicate risk for cancer within the HSA, but data is difficult to acquire at the sub county level. Rates of new cases of cancer for the years 2008 through 2012 for both Amador and Calaveras County are listed in Table 17. Rates are compared to a regional incidence rate and state rate.

Table 17: Age adjusted Incidence rates of cancer (invasive) for Amador/Calaveras/Alpine Counties, El Dorado County, and Mariposa/Tuolumne Counties compared to state and regional benchmarks (rates per 10,000)

Indicator	Rate per 10,000
Amador/Calaveras/Alpine Counties all cause cancer incidence	44.34
El Dorado County	44.72
Mariposa/Tuolumne Counties	45.88
CA State all cause cancer incidence[+]	41.80

(Source: CA Cancer Registry, 2009-2013[23])

Incidence rates of all-cause cancer for Amador/Calaveras/Alpine Counties was higher than the state rate but lower than the nearby counties of El Dorado, and Mariposa/Tuolumne.

All-Cause Mortality and Lung Cancer

An all-cause cancer mortality rate shows the overall effect of cancer as an illness across the SAH Communities of Concern.[24] Unfortunately, death 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

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

[23] *Age-Adjusted Invasive Cancer Incidence Rates by County in California, 2009- 2013*. Based on November 2014 Extract (Released November 21, 2014). California Cancer Registry. Cancer-Rates.info. Retrieved May 1, 2016, from http://cancer-rates.info/ca/

[24] American Cancer Society. (2014). *Cancer Facts and Figures 2014*. Retrieved from: http://www.cancer.org/acs/groups/content/@research/documents/webcontent/acspc-042151.pdf

due to lung cancer are reported in Table 18, followed by rates for colorectal, prostate and female breast cancer in Table 19.

Table 18: 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
95601	0	N/A	N/A
95629	0	N/A	N/A
95640	16.61	7.61	14.26
95642	31.88	8.49	15.82
95666	25.23	5.67	13.68
95669	21.55	7.12	N/A
SAH HSA	21.49	6.40	10.90
Amador County	31.51	9.80	15.98
CA State	15.40	2.70	8.00
Healthy People 2020	16.10	N/A	N/A

(Source: Mortality: CDPH, 2012; ED visits: OSHPD, 2011-2013) Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

Though data was unavailable for the small ZIP code areas of 95601 (Amador City) and 95629 (Fiddletown), data for the other four ZIP codes Communities of Concern showed high rates for All-Cause cancer mortality, and ED visits and hospitalizations due to lung cancer. Zip code 95642 (Jackson) had the highest rate of all three conditions, more than twice the state benchmark for mortality and hospitalizations, and almost three times the rate for ED visits.

Cancer -- Female Breast, Colorectal, and Prostate

A lack of access to primary health care greatly effects the community's risk of late diagnosis of cancer, especially those cancers for which early diagnosis and prevention are vital to reducing increased related morbidity and mortality. Table 19 examines ED visit and hospitalizations related to female breast cancer, colorectal cancer (male and female) and prostate cancer.

Table 19: Rates of ED visits and hospitalizations for female breast cancer, colorectal cancer, and prostate cancer (rates per 10,000 population) for the SAH HSA compared to county and state benchmarks.

ZIP Code	ED visits Female Breast Cancer	Hospitalizations Female Breast Cancer	ED visits Colorectal Cancer	Hospitalizations Colorectal Cancer	ED visits Prostate Cancer	Hospitalizations Prostate Cancer
95640	N/A	N/A	N/A	7.36	8.35	11.17
95642	11.37	11.12	N/A	8.91	N/A	15.03
95666	14.24	N/A	N/A	N/A	N/a	17.44
SAH HSA	5.88	3.86	N/A	6.06	4.52	13.73
Amador County	14.32	12.39	*1.50*	9.27	7.63	16.88
CA State	*6.60*	*11.10*	*1.86*	*6.50*	*5.80*	*12.40*

(Source: OSHPD, 2011-2013) Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

Data for ED visits and hospitalizations due to breast cancer, colorectal cancer, and prostate cancer were only available for three of the six Communities of Concern and are presented in Table 19. Rates for these three Communities of Concern were drastically higher than the state benchmark for most of the cancer condition presented here, and in some cases more than twice the state rate.

Though key informants and community members didn't specifically mention the prevalence of one specific type of cancer being higher for the Amador County area, residents did stress the lack of cancer treatment in the area for those residents affected. These findings will be included in the section on transportation in this report.

Respiratory Health -- Chronic Obstructive Pulmonary Disease and Asthma

Chronic Obstructive Pulmonary Disease (COPD)

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.[25] Tobacco smoking is the biggest risk factor for COPD. As many as 6.8 million people have COPD at the national level. In an effort to understand the impact of respiratory illness in the Communities of Concern, mortality rates for chronic lower respiratory disease (CLRD) are presented here 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 20.

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

Table 20: Morality rates due to chronic lower respiratory disease, ED visits and hospitalization rates due to COPD compared to county, state and Healthy People 2020 benchmarks (rates per 10,000 population)

	ZIP Code	Mortality CLRD	ED Visits COPD	Hospitalizations COPD
Chronic Lower Respiratory Disease (CLRD) & Chronic Obstructive Pulmonary Disease (COPD)	95601	0	263.75	N/A
	95629	0	269.44	329.52
	95640	4.04	170.30	125.70
	95642	7.68	341.55	237.94
	95666	3.51	216.72	160.80
	95669	4.35	188.51	152.61
	SAH HSA	4.62	187.97	161.45
	Amador County	6.36	214.49	166.74
	CA State	3.46	74.60	89.10
	Healthy People 2020	N/A	56.80	50.10

(Source: Mortality: CDPH, 2012; ED visits: OSHPD, 2011-2013) Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

Three of the six ZIP code Communities of Concern had morality rates due to CLRD above the state benchmark. The Amador county benchmark was clearly higher than the state rate for mortality. All six ZIP codes had rates above both the state and Healthy People 2020 benchmarks for ED visits due to COPD, with the highest rate in 95642 (Jackson) at 341.55 per 10,000. ZIP code 95629 (Fiddletown) had the highest rate of hospitalizations due to COPD at 329.52 per 10,000, more than six times the Healthy People 2020 benchmark.

Asthma

Asthma is a major health issue in the nation. National data indicates that one in 12 adults and one in 11 children have asthma.[26] Table 21 examines ED visits and hospitalizations due to asthma (all ages).

Table 21: ED visit and hospitalization rates due to asthma compared to county and state (rates per 10,000 population)

	ZIP Code	ED Visits	Hospitalizations
Asthma	95601	302.80	N/A
	95629	254.92	108.45
	95640	170.74	83.36
	95642	300.70	86.32
	95666	186.78	70.74
	95669	141.82	66.12
	SAH HSA	170.99	73.02
	Amador County	199.04	77.85
	CA State	149.10	68.70

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

(Source: OSHPD, 2011-2013) Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

Rates for ED visits due to asthma were elevated compared to the state benchmark in five of the six ZIP code Communities of Concern. The highest rates of asthma-related ED visits were found in the small population ZIP code of 95601 (Amador City) and the major population area of 95642 (Jackson). Four of the ZIP code Communities of Concern had rates of hospitalizations due to asthma that clearly exceeded the state benchmark.

Dental Health

Dental health is very important for the overall health of an individual. Though dental insurance was re-instated in 2014 under Medicaid, the data presented here is from 2013. Clear disparities among the ZIP code Communities of Concern in comparison to the benchmarks are seen here. Table 22 provides data on ED visits and hospitalizations related to dental issues.

Table 22: 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	95601	178.83	N/A
	95629	82.52	N/A
	95640	85.67	5.21
	95642	208.68	7.79
	95666	104.54	7.42
	95669	42.22	N/A
	SAH HSA	94.54	6.02
	Amador County	113.25	6.36
	CA State	41.80	7.90

(Source: OSHPD, 2011-2013) Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

All six ZIP code Communities of Concern had ED visit rates due to dental health issues that exceeded the state benchmark. The rate in ZIP code 95642 (Jackson) was more than five times higher than the state rate. The Amador County rate drastically exceeded the state benchmark. Rates of hospitalization due to dental health issues for the Communities of Concern were not considerably higher than the corresponding benchmarks.

Participants indicated that there was a lack of dental providers in the Amador County area, and a few participants ranked dental health issues and access to care as a top priority for the HSA. The findings indicated that there are few dentist practicing in the Amador County area, and no dentists that accept Denti-cal insurance in the area (residents on Medi-cal) except for at the MACT Clinic which primary serves the tribal community. In addition, key informants expressed a concern that the lack of access to care often results in a dental crisis, and for those area residents lacking transportation may result in their teeth pulling pulled. Pulling of teeth as a dental treatment greatly effects these area residents which may then have trouble with eating, employability, and overall mental health coping. As one provider stated:

Well right and it effects the way people can eat, it really truly effects employability I believe for people when they're as far as presentation especially when people are trying to seek employment if they don't have if they have struggled as far as their dental work is concerned and things like that. We've had this discussion within our partner meetings and stuff in the past that actually has a mental health effect on people too. I think it's pretty significant I agree with you its mind-blowing why they can't see the value or don't put the value in replacing (the teeth). (KI_7)

Health Factors in Communities of Concern -- Health Behaviors, Clinical Care, Social and Economic Factors, and the Physical Environment

Health factors are those that intersect with people in their everyday lives. Multiple health factors interconnect to increase risk for a single health outcome, or multiple health outcomes as presented in the previous section. Health factors can be seen as the drivers upstream that must be changed to improve downstream health outcomes that affect the community. Much like the Health Outcomes section of this report, health factors presented in this section are organized in accordance with the theoretical model as presented previously.

Health Behaviors -- Tobacco Use, Diet and Exercise, Alcohol and Drug Use, and Sexual Activity

Tobacco Use

Tobacco use is a risk behavior that is commonly addressed through educational interventions, and a major contributor to many leading causes of death in America, especially heart disease, COPD, asthma, and cancer. Though smoking rates are not available for the SAH service area, data from the California Health Interview Survey showed that 13.9% of Amador county residents were current smokers, compared to the state rate of 10.8%. Tobacco use was also mentioned by key informant and focus group participants as a common behavior for many area residents. Key informants specifically mentioned smoking among non-Hispanic whites and pregnant women (KI_1). In addition, participants mentioned that there were currently no smoking cessation programs anywhere in the county.

Diet and Exercise -- Obesity, USDA defined Food Deserts, mRFEI, and Park Access
Obesity

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. Table 23 displays the percentage of adults overweight and obese for Amador and Calaveras Counties as compared to the state.

Table 23: Self-reported BMI for the determination of percent overweight and obese for Amador and surrounding counties in comparison to the state benchmark rate

Indicator	Percent Overweight	Percent Obese
Tuolumne, Calaveras, Amador, Inyo, Mariposa, Mono, Alpine Counties (Combined rate)	34.1%	27.8%
CA State	36%	27%

(California Health Interview Survey, 2014).

As the data presented in Table 23 indicates, the percent overweight and obese was slightly lower for the combined counties in comparison to the state benchmarks. Unfortunately, overweight and obesity data is seldom available at the sub-county level in order to examine how rates compare within the county and SAH HSA.

Food Deserts

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."[27] The lack of access to healthy food results in a poor diet and can lead to higher levels of obesity and other diet-related diseases, such as diabetes and heart disease. The USDA further describes a food desert as "a census tract with a substantial share of residents who live in low-income areas that have low levels of access to a grocery store or healthy, affordable food retail outlet."[28] Figure 11 identifies the food deserts for the SAH Communities of Concern.
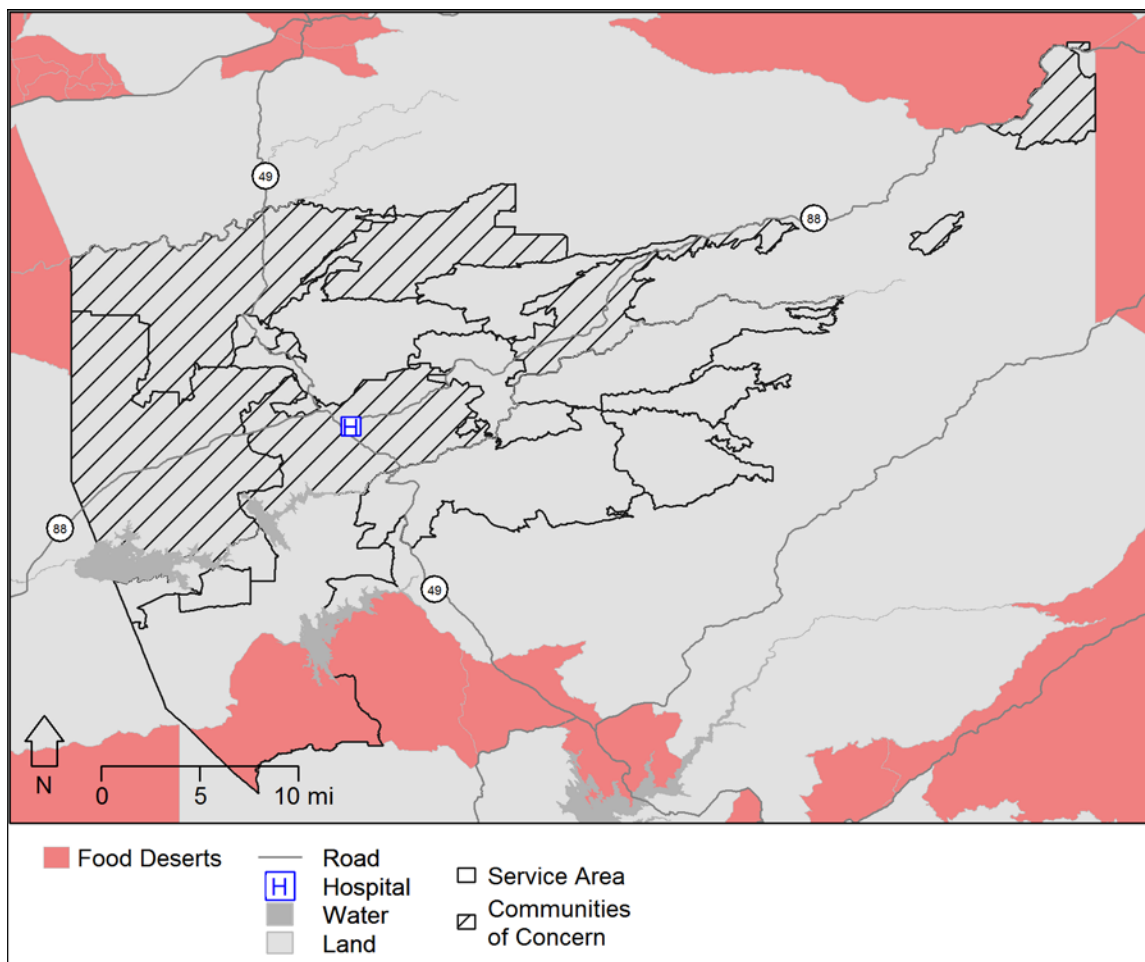
Figure 11: USDA defined food deserts for SAH Communities of Concern

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

As shown in Figure 11, no portions of the Communities of Concern were designated USDA Food Deserts. However, the northwestern portion of Calaveras County were designated USDA food desert areas. Findings regarding access to healthy and affordable foods from key informant interviews and focus groups revealed three main points: 1) many residents that live in the outlying areas of the county lack access to adequate fresh fruits and vegetables, 2) growing your own garden for area residents is difficult due to shade and wildlife, 3) access to food for families when school lunch programs are not available (weekends and summertime) is a heavy financial burden.

Participants spoke about the lack of access to affordable healthy food for residents that live in the outlying areas of the county. As one key informant stated:

Yes that's an issue and as far as the grocery stores that are available that are present in the outline communities tend to have higher costs for food that you wouldn't maybe (see in Jackson)...a loaf of bread may cost twice as much as it does at a Safeway in Jackson in one of our outline stores it might cost twice as much so. (KI_7).

Another key informant stated:

But up in the up country area there's small mom and pop IGA kinda grocery store same thing down in Ione. Same thing in Plymouth, it's a small market. With the produce section but you know it's more limited and so there's a lot more big packaged processed food at those kind of markets I think then you're gonna get your large or more comprehensive places. (KI_3)

Some participants spoke about the challenges associated with residents growing their own gardens in the HSA, specifically issues with shade and wildlife. As one key informant stated:

I know a lot of families maybe enjoy gardening or have tried gardening but one of the great things about rural life is all the wildlife one of the factors for trying to have a garden is you have to have deer proof fencing so even if you're just trying to grow a tomato plant if you don't have the ability to put up deer proof fencing then you can't even attempt to save money by growing some maybe one or two plants of tomatoes or cucumbers because that can be those little tricks that might be easier to do in the city can be really hard if you have property or you've got all the trees but not enough lighting and certainly the deer come through every three weeks and eat everything. (KI_7)

Food insecurity was mentioned by many participants and key informants indicated that more than 4,000 families access services through the area Food Bank. Food insecurity is especially hard for area families with children. Key informants indicated that during school days families are provided assistance through the school districts Free and Reduced Lunch Program, but on the weekends and in the summer months many residents struggle to afford adequate food for their families. Transportation to acquire affordable health food can also be a challenge for many area residents. As one provider stated:

All the schools have the lunch programs and so the kids are taken care of at that point but it's still not enough they need stuff for the weekend. So again it's all about convenience and people do have to make that decision. I've got to buy gas, I've got to buy medication. (KI_5)

Modified Retail Food Environment Index (mRFEI)

The modified Retail Food Environment Index (mRFEI) represents 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 SAH HSA. Lighter areas indicate poor or no access to healthy food outlets and darker areas indicate greater access to healthy food outlets.
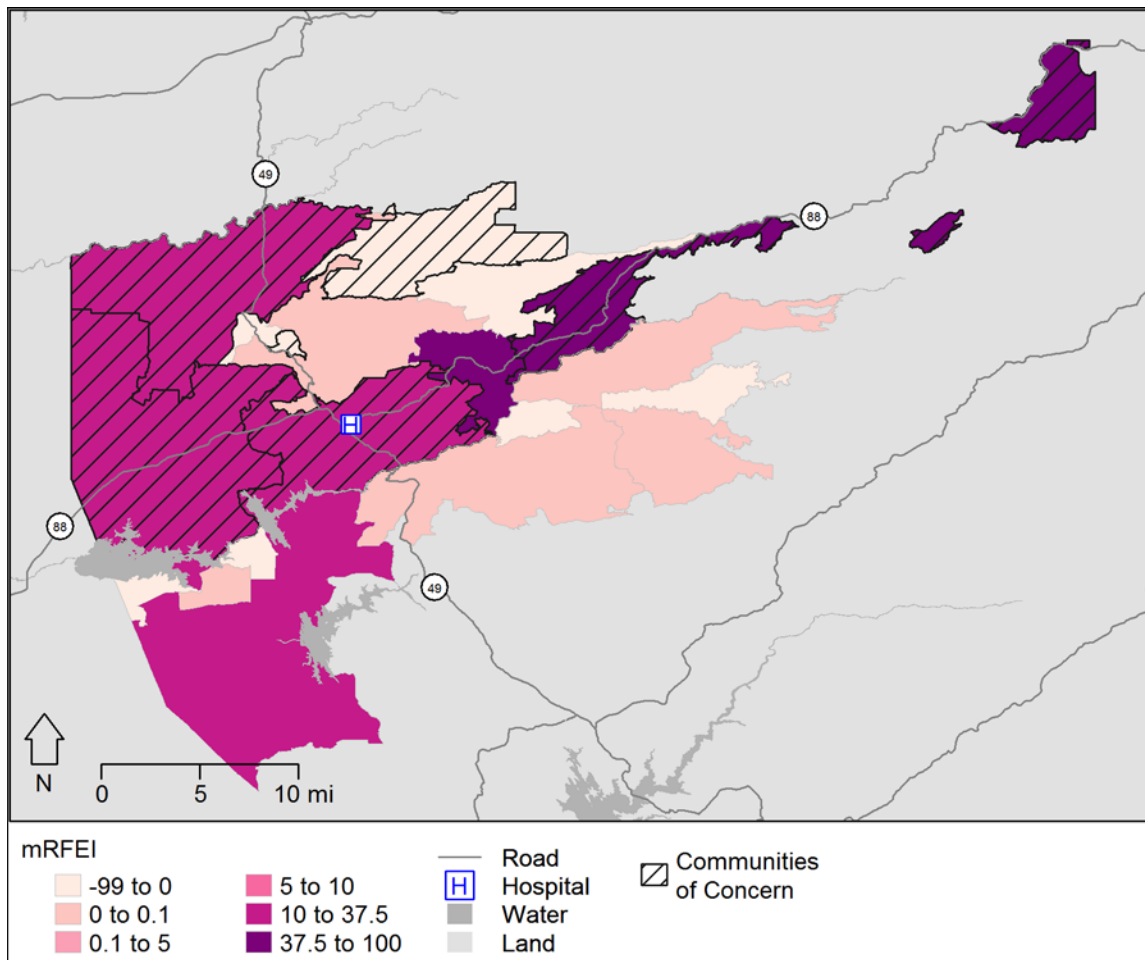
Figure 12: Modified Retail Food Environment Index (mRFEI) for the SAH HSA

As shown in Figure 12, mRFEI scores varied greatly across the HSA. The ZIP code areas of 95629 (Fiddletown) and 95601 (Amador City) had much lower rates than the rest of the HSA indicating less access to healthy food. As stated in the previous section, key informants confirmed that many of the outlying areas have limited access to affordable, healthy food.

Park Access

Having access to recreational areas influences whether or not people will be physically active. Figure 13 shows the percent of the population by ZIP code in the service area 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.
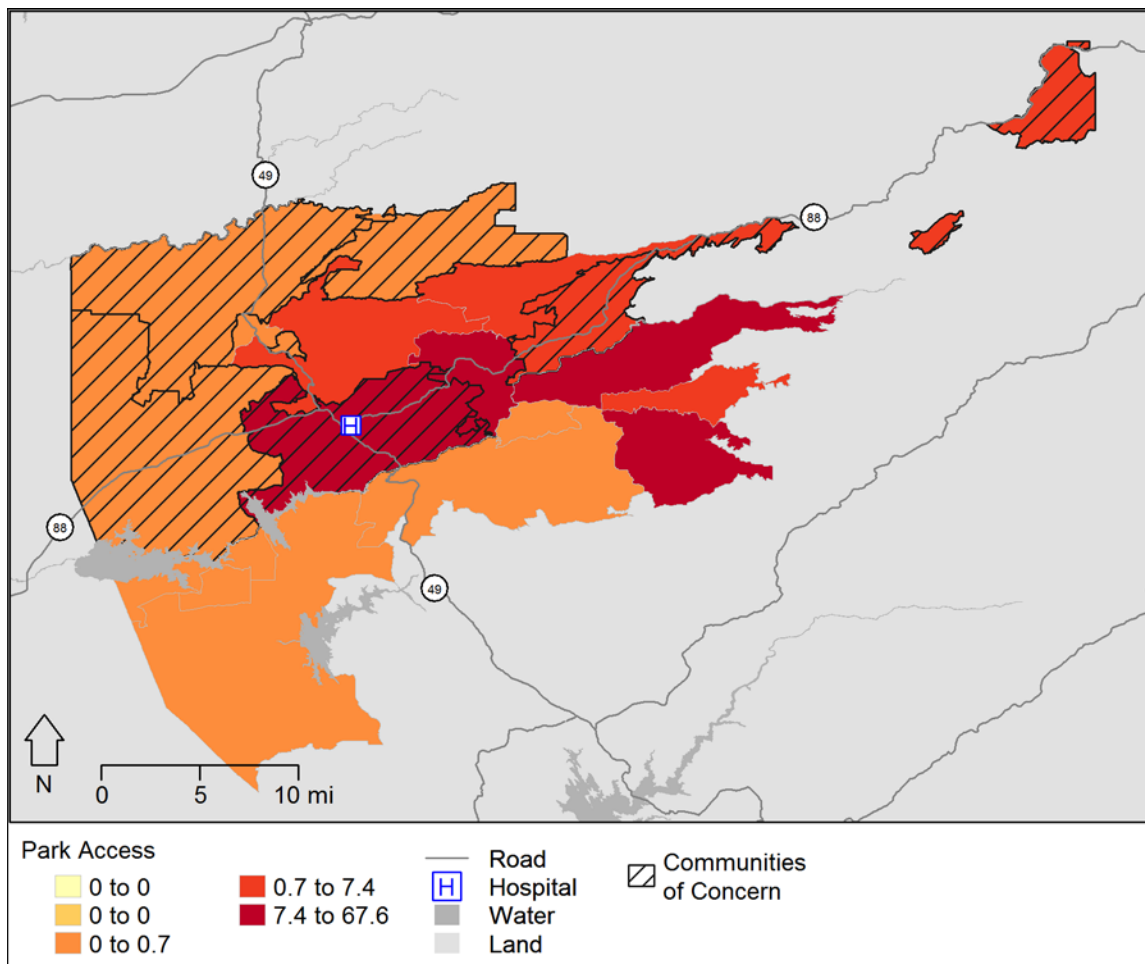
Figure 13: Percent of population with ZIP code that live within one-half mile of a park.

As displayed in Figure 13, access to a park varied among the Communities of Concern. ZIP code Communities of Concern 94640 (Ione), 95669 (Plymouth), and 95629 (Fiddletown) had the lowest park access in the HSA.

Though quantitative data presented here suggests that park access may not be a major barrier to a large part of the SAH HSA, key informant and community members reported an absence of parks in the HSA. Though the environment of the HSA is largely rural and full of rolling hills and trees, key informants and community members mentioned that there was a lack of structured parks and play areas in the HSA. They indicated that the area lacks a coordinated trail system for bike riding and recreation, many of the roads do not have a bike lane, and exercising in the wooded areas of the county is risky due to wildlife. The risk stems from the fact that area roads are major highways and transportation corridors where people drive at high rates of speed, and the wooded areas have a lot of wildlife including snakes, cougars, bobcats, etc.

Alcohol & Drug Use

Adult Binge Drinking

Reported rates of binge drinking are not available at the sub-county level for the SAH. However, CHIS data indicates that the percentage of respondents reporting binge drinking at the county level was below the 2013 binge drinking level for the state. For Amador County, 30.9% of adult respondents reported engaging in binge drinking in the past years, compared to the state percentage of 32.6%.

Table 24: Self-reported adult binge drinking in the past year for Amador County compared to the state

Indicator	Percent Binge Drinking
Amador County	30.9%
CA State	**32.6%**

(Source: California Health Interview Survey, 2014)

Substance Abuse

The issue of substance abuse and the lack of treatment options for area residents were both mentioned by key informants and community members as a common struggle for many area residents. Rates of ED visits and hospitalizations related to substance abuse are not direct measures of substance abuse prevalence in the Communities of Concern ZIP codes, but rather provide insight into the problem across the HSA. As shown in Table 25, rates of substance abuse-related ED visits and hospitalizations were clearly elevated in the Communities of Concern compared to county and state benchmarks.

Table 25: ED visit and hospitalization rates due to substance abuse issues compared to county and state benchmarks (rates per 10,000 population)

	ZIP Code	ED Visits	Hospitalizations
Mental Health-Substance Abuse	95601	1699.89	568.37
	95629	869.49	353.43
	95640	662.92	204.08
	95642	1557.25	274.46
	95666	867.61	201.65
	95669	602.34	197.66
	SAH HSA	751.08	212.14
	Amador County	869.52	218.64
	CA State	*256.3*	*145.8*

(Source: OSHPD, 2011-2013)

All Communities of Concern ZIP codes exceeded the state benchmark for ED visits and hospitalizations due to substance abuse issues. The highest rates for ED visits due to substance abuse were found in the small population ZIP code of 95601 (Amador City) and in ZIP code 95642 (Jackson). The rates in these two ZIP codes were more than six times the state benchmark. Hospitalizations due to substance abuse were highest in the low population ZIP codes of 95601 (Amador City) and 95629 (Fiddletown).

Key informants and community members stated that many area residents struggle with substance abuse. Specific substances that were mentioned included marijuana, alcohol, meth, heroin, and prescription drugs. Participants stressed the need to have a detox center in the county, stating that

there are currently no locations in the Amador HSA for community residents to safely detox besides the Sutter Amador Emergency Room. Inpatient care centers for substance abuse treatment are also lacking. As one key informant stated: *"there is not one sober living house in Amador County"* and continued by saying "*If somebody comes to me 'I am ready, I need a change in life' there's nowhere for them to go"* *(KI_4).*

Sexual Activity -- Teen Birth Rate and STI Rates (including chlamydia, gonorrhea, and HIV/AIDS)

Teen Birth Rate

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 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. [29] National research shows that teen mothers, especially single mothers, are more likely to have dropped out of high school and are less able to support themselves; a high percentage end up on public assistance. In fact, half of all current welfare recipients had their first child as a teenager.[30] Figure 14 shows the teen birth rate for the SAH HSA.
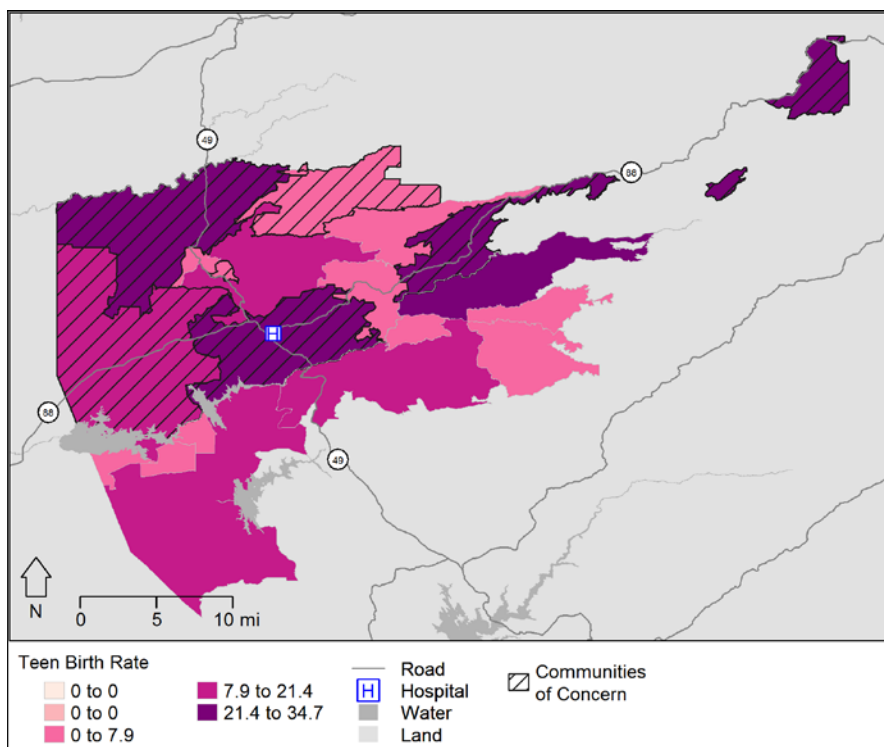
Figure 14: Teen birth rate for 15-19 year olds per 1,000 live births

Compared to the national teen pregnancy rate stated above of 26.5 per 1,000, only ZIP code 95642 (Jackson) had a rate higher than the national benchmark. As Figure 11 shows, ZIP code

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

[30] Sawhill, I.V. (2001). *What can be done to reduce teen pregnancy and out of wedlock births*? Retrieved from: http://www.brookings.edu/research/papers/2001/10/childrenfamilies-sawhill

Communities of Concern 95669 (Plymouth), 95666 (Pioneer) and 95642 (Jackson) all had the highest rate of teen pregnancy in the HSA.

Sexually Transmitted Infections (STI) and HIV/AIDS

Rates of STIs, including chlamydia, gonorrhea, and HIV, illustrate the prevalence of risky sexual behavior in the Communities of Concern. Since STIs are largely preventable, knowing which communities are more infected by STIs helps with targeting interventions for treatment and prevention. Table 26 displays prevalence rates for chlamydia and gonorrhea among 10-19 year olds in Amador and Calaveras Counties compared to the state benchmark. Table 27 shows ED visits and hospitalizations related to STIs, as well as those specific to HIV/AIDS. As the data illustrates, rates for both conditions were clearly below the state comparative benchmark for both Amador and Calaveras Counties.

Table 26: Prevalence of chlamydia and gonorrhea among 10-19 year olds in Amador and Calaveras Counties compared to the state rate (per 10,000)

STI Rates[31]	Chlamydia Rate	Gonorrhea Rate
Amador County	38.37	2.74
Calaveras County	24.97	3.84
CA State	68.40	11.20

(Sources: CDPH, 2010-2014)

Table 27: 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	95640	N/A	5.41	N/A	No data available
	95642	13.76	N/A	11.40	
	95666	7.56	N/A	6.38	
	SAH HSA	3.05	1.19	2.05	
	Amador County	5.56	3.62	4.24	1.77
	CA State	3.20	4.60	2.00	3.4

(Source: OSHPD, 2011-2013) Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels. *HIV/AIDS is considered a subcategory of STIs in the ICD 9 diagnostic codes.

As Table 27 indicates only data for three ZIP code Communities of Concern were available. For ED visits due to STIs ZIP code 95642 (Jackson) had the highest rate in the HSA at more than twice the county rate and four times the state rate. The rate of hospitalizations for STIs was high in ZIP code 95640 (Ione). The rate of ED visits due to HIV/AIDS were clearly elevated in ZIP codes 95642 (Jackson) and 95666 (Pioneer).

Clinical Care -- Access to Care and Quality of Care

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[31] California Department of Public Health. (2015). *California Local Health Jurisdiction: STD Data Summaries- 2014 Provisional Data*. Retrieved from: https://www.cdph.ca.gov/data/statistics/Documents/STD-Data-LHJ-Amador.pdf

Health Professional Shortage Areas

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).[32]

Health Professional Shortage Area -- Primary Care
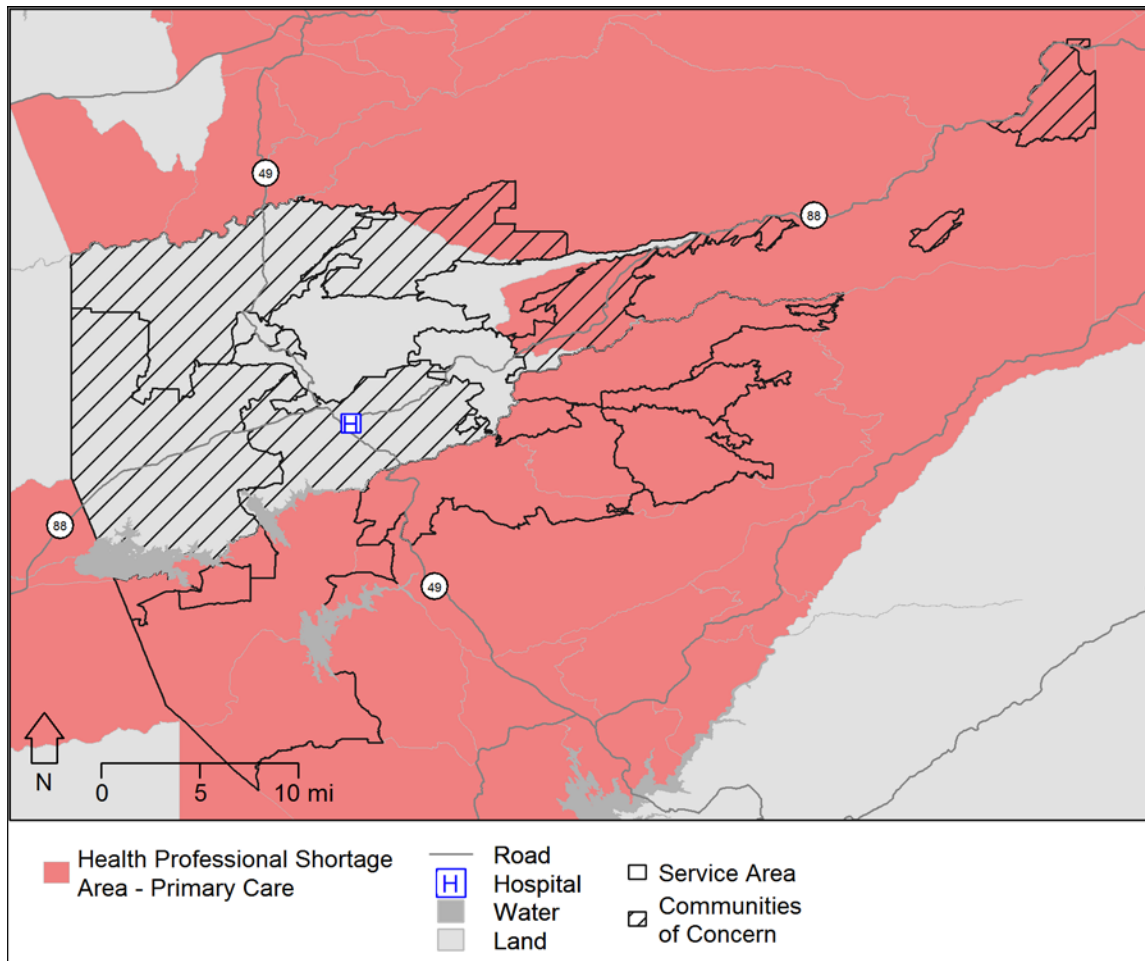
Figure 15: Health Professional Shortage Area -- Primary Care

Data indicated that five out of the six Communities of Concern had portions of the ZIP code that were designated HPSAs for primary care. The ZIP codes that had HPSAs were 95629 (Fiddletown), 95640 (Ione), 95642 (Jackson), 95666 (Pioneer) and 95669 (Plymouth).

Key informants and community members consistently stressed the need for increased access to primary care services for HSA residents. Access to primary care was the second most significant health

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

need identified in this assessment. Many doctors in the HSA are retiring and few new doctors are moving to the area. As one key informant expressed:

> *We have a very high, we have a very high patient to physician ration and we have one of the highest it's like 1500 to 1, 1800 to 1, I don't have the exact number. They have a hard time recruiting and you have to wait four to six months to get in for your first initial visit. They tell you to go to the ER. With ya know regular, middle class insurance that I have. One time I was sick they said it would be six weeks before I could get in, I said I'd be dead by then. (KI_1)*

Participants also expressed a large concern over the lack of providers in the area that accept Medi-cal, and of those that do, participants stated that most are not accepting new patients. The same is true for providers that provide VA benefit care, as mentioned previously in this report. One of the most interesting findings of this assessment around access to care was that many residents in the area are enrolled in a Covered California plan that not a single provider in the county accepts. As one provider said, *"Well one of the problems is the default was wrong for Amador County (under Covered California). So most people were being enrolled in to a particular plan that wasn't necessarily the one that had providers"* (KI_2).

Another provider said in response to the impact ACA had on area residents:
> *Really great but a lot of people now have a card that says they have insurance that doesn't mean they can afford to go or find a provider that's accepting that insurance. It's basically saying you have insurance without being able to actually have insurance. (KI_7)*

Recruitment of providers to the HSA was also mentioned as a challenge for the HSA. One provider said, *"We have a difficulty attracting professionals up here and it has to be addressed. We have a lack of physicians, a lack of nurses, a lack of care givers and we're not successful at attracting them"* (KI_8). The lack of specialist was also cited as a challenge in the HSA. As mentioned previously in this report, a lack of mental health providers was also mentioned as a challenge for the area. Figure 16 shows federally designated mental health HPSAs within the SAH HSA.
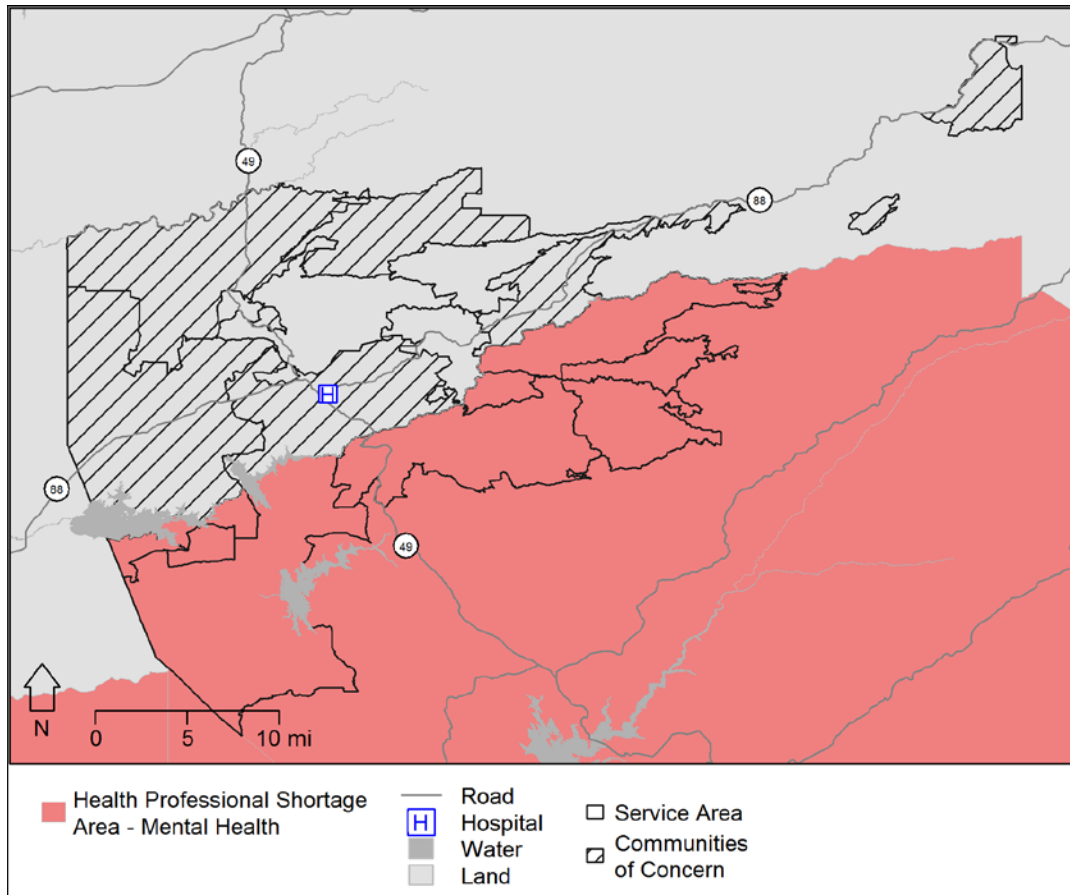
Figure 16: Mental health HPSAs for the SAH HSA

There were three ZIP code Communities of Concern that had portions that were designated mental health professional shortage areas which included the ZIP codes of 95640 (Ione), 95642 (Jackson) and 95666 (Pioneer).

Health Provider Shortage Area -- Dental Care

There are no federally designated HPSAs for dental care in the SAH HSA. ED visits and hospitalizations (2013) related to dental care were provided in this report previously, and clear geographic disparities were seen. However, as mentioned previously, these data were prior to reinstatement of dental services under Medicaid. The HPSA Dental Area data presented here are from 2015, post reinstatement of coverage. Although the most recent quantitative data indicates that there is not a federal shortage, key informants and community members stressed the need for increased dental care in the area, as stated previously in this report.

Health Insurance Status

Insurance status is an important indicator of health, including access to care and economic stability. With the passage of the ACA, the overall number of Californians without health insurance of any type has decreased. However, many residents within the SAH remain uninsured. Table 28 contains the percent uninsured for each SAH Community of Concern.

Table 28: Percent uninsured by ZIP code compared to county and state benchmarks

	ZIP Code	Percent Uninsured
	95601	16.5
	95629	7.2
	95640	10.0
Uninsured	95642	12.5
	95666	14.2
	95669	12.5
	Amador County	*17.8*
	CA State	*17.8*

(Source: US Census, 2013)

All Six ZIP code Communities of Concern had rates of uninsured populations that were lower than both the county and state benchmarks. The highest percentage of uninsured populations in 2013 was in ZIP code 95601 (Amador City) and 95666 (Pioneer).

Quality of Care -- Total ED and Hospitalization Utilization and Prevention Quality Indicators

Emergency Department and Hospitalization Utilization

Total hospitalization and ED visit rates can help illuminate the overall health status of a community and describe the state of the healthcare system, including access to primary healthcare services. In some instances, community residents are unable to obtain care in an ambulatory setting. Some residents obtain primary care in local hospital EDs, and others may allow a health condition to become acute and then seek care in the ED. Residents are sometimes hospitalized for these conditions.

Figures 17 and 18 show higher total ED visit and hospitalization rates (for all causes) in the Communities of Concern compared to other ZIP code areas in the HSA. The ZIP code with the highest rates of ED visits per 10,000 was 95642 (Jackson), which is the ZIP code where Sutter Amador Hospital is also located and ZIP code 95601 (Amador City). All six Communities of Concern had ED visit rates that exceeded the state benchmark of 2,756.38 per 10,000.
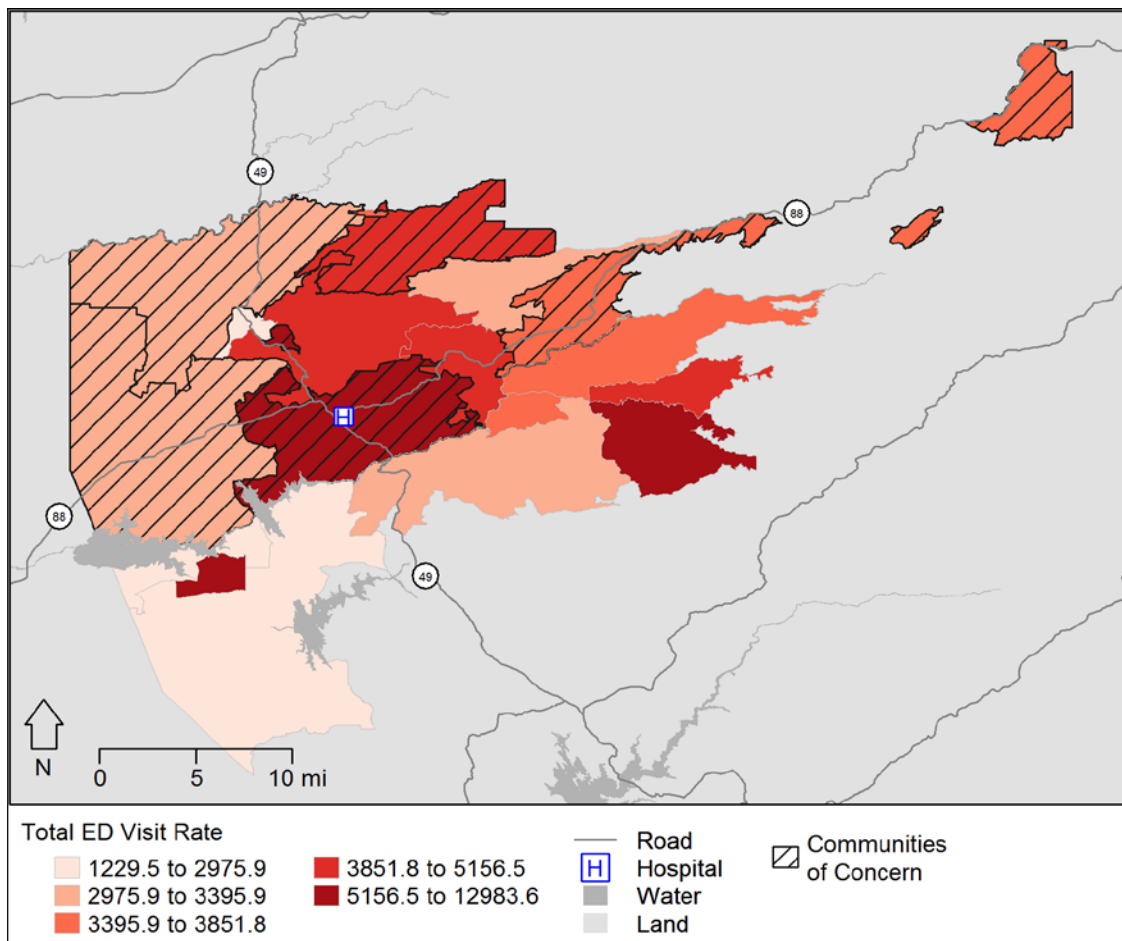
Figure 17: Total ED visit rate for the SAH HSA
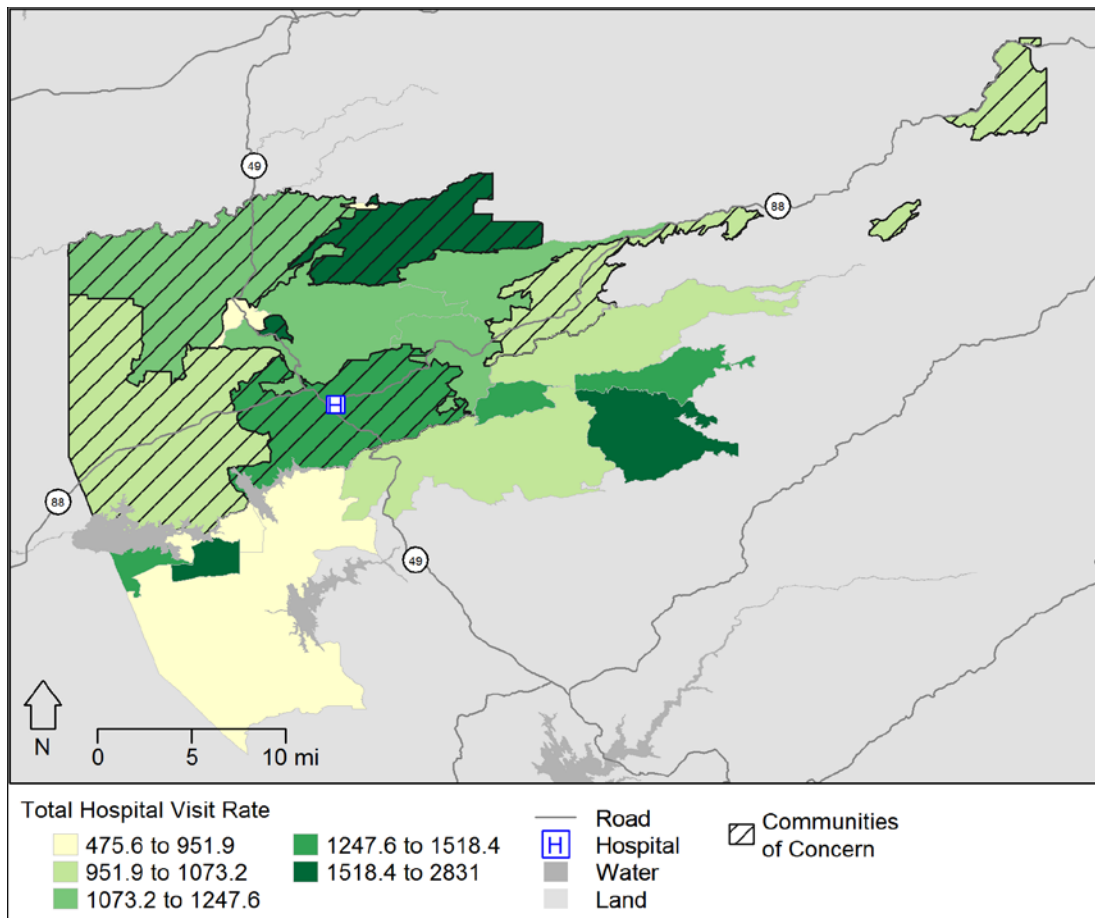
Figure 18: Total hospitalizations for the SAH HSA

The rate of total hospitalizations in most of the ZIP code Communities of Concern was greater than the county benchmark, at 1,125.68 hospitalizations per 10,000 and the state benchmark, at 1,020.26 per 10,000 hospitalizations.

Preventable Hospitalizations -- Prevention Quality Indicators

The Prevention Quality Indicators (PQIs) were developed by the Agency for Healthcare Research and Quality (AHRQ). The 13 identified PQIs are used to assess the quality of care for conditions for which good outpatient care could prevent the need for hospitalization, or when early intervention could prevent complications or decrease disease severity. These conditions, as shown in Table 29, are also known as ambulatory-sensitive conditions (ASCs) and are sometimes referred to as preventable hospitalizations.[33] Based on hospitalization rates, these indicators provide insight on the community health care system or services outside the hospital setting, such as access to quality healthcare and related services. The PQI indicators for each Community of Concern are noted in Table 30. Rates that exceeded any benchmark are highlighted.

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[33] Agency for Healthcare Research and Quality. (n.d.) *Prevention quality indicators overview*. Retrieved from: http://qualityindicators.ahrq.gov/modules/pqi_resources.aspx

Table 29: PQI number with corresponding diagnosis

PQI #	Indicator
PQI1	Diabetes short-term complications
PQI2	Perforated appendix
PQI3	Diabetes long-term complications
PQI5	Chronic obstructive pulmonary disease (COPD): chronic bronchitis or emphysema or asthma in older adults (ages 40 and over)
PQI7	Hypertension (high blood pressure)
PQI8	Heart failure
PQI10	Dehydration
PQI11	Bacterial pneumonia
PQI12	Urinary tract infection (UTI)
PQI13	Angina without procedure (chest pain)
PQI14	Uncontrolled diabetes
PQI15	Asthma in younger adults (ages 18-39)
PQI16	Lower-extremity amputation among patients with diabetes (removal of leg or foot due to diabetes complications)

Though not all Communities of Concern had data available to examine each of the 13 PQI indicators (composite), stable data were available for four PQIs in at least four of the six Communities of Concern. These four PQI indicators are detailed in Table 30.

Table 30: Prevention Quality Indicators 5, 8, 11, and 12 for the SAH Communities of Concern as rates of hospitalization per 10,000

	ZIP Code	COPD (PQI5)	Heart Failure (PQI8)	Bacterial Pneumonia (PQI 11)	Urinary Tract Infection (PQI 12)
Prevention Quality Indicators (PQI)	95601	N/A	N/A	N/A	N/A
	95629	N/A	N/A	N/A	N/A
	95640	27.70	21.43	18.44	10.60
	95642	59.72	45.38	43.77	22.89
	95666	31.55	26.36	26.07	13.96
	95669	39.12	24.27	28.23	15.50
	Amador County	37.37	29.16	29.16	17.60
	CA State	*35.20*	*28.10*	*18.80*	*13.70*

Note: a value of 0 indicates a numerical value; N/A represents that the data is either not available or the count for that indicator and ZIP code fell below acceptable masking levels.

Four of the six Communities of Concern had values for the four PQI conditions. ZIP code 95642 consistently had higher rates for all four PQI conditions in comparison to the Amador County and state benchmarks.

Social and Economic Factors -- Economic Stability (Income, Employment, and Education) and Community Safety (Major Crime, Violence and Traffic Accidents)

Economic Stability -- Education and Income

Indicators of economic stability used in the CHNA included percent of adults without a high school diploma, percent living below the federal poverty level, median household income, percent unemployed and percent of residents receiving public assistance. Economic instability and housing instability were commonly mentioned by key informants and community members as challenges for many residents in the SAH HSA. Stable income and housing are important to live a healthy life. Table 31 examines indicators of economic stability in the Communities of Concern (Housing stability is examined elsewhere in this report).

Table 31: Percent: no high school diploma, living below 100% federal poverty level, median household income, percent on public assistance, and percent unemployed by ZIP code compared to county and state benchmarks

	ZIP Code	Percent Adults with No High School Diploma	Percent Living in Poverty	Median Income	Percent Receiving Public Assistance	Percent Unemployed
Economic Stability	95601	6.3	46.8	$19,688	28.6	28.7
	95629	25.4	39.3	$41,181	55.9	16.4
	95640	21.1	15.4	$58,309	12.2	13.2
	95642	9.9	13.7	$44,811	16.9	20.6
	95666	7.5	10.4	$53,391	8.8	20.1
	95669	7.6	7.6	$67,770	7.2	15.9
	Amador County	11.9	12.6	$53,684	12.7	16.8
	CA State	*18.8*	*15.9*	*$61,094*	*12.1*	*11.5*

(Source: Census, 2013)

ZIP codes 95629 (Fiddletown) and 95640 (Ione) had drastically high percentages of residents with no high school diploma: the rate in both ZIP codes was more than twice the county benchmark and clearly higher than the state. The percentage of people living in poverty was drastically high in the small ZIP code area of 95601 (Amador City) at a staggering 46.8%, almost half of all residents living in the ZIP code. This ZIP code also had the lowest median income at $19,688 per year. Four of the six ZIP codes also had high percentage rates of residents receiving public assistance. Examination of data on unemployment revealed that all six Communities of Concern had percentage rates above the state benchmark, especially ZIP codes 95601 (Amador City), 95642 (Jackson) and 95666 (Pioneer).

Key informants and community members commented on the challenges that many residents experience living in poverty, specifically struggling with the ability to find stable and reliable employment in the HSA. All agreed that most employment is located in and around the Jackson area of the HSA, with the biggest employers of the area consisting of the hospital, the casino and the prison in Ione. As another provider stated:

Poverty is one thing I would say is pretty true. There's not a lot of opportunity up here for employment. It's very rural and the children that grow up here, I know, because I thought it would be a wonderful place to raise my son and if they are not involved in the theater, sports, swim team, some sort of athletic, football team, then the other population is drugs and alcohol. (KI_7).

Community Safety -- Major Crime Rates, Assault, and Traffic Accidents with Fatalities

Feeling safe in the community you live in is an important part of overall health. Safety is affected by both the physical and social environment in which community members reside. When residents feel safe while navigating their physical environment they are more likely to travel through the community for daily activities[34]. The repeated exposure to violence and crime could lead to feeling traumatized and lacking in trust towards other members in the community, resulting in isolation.

Major Crimes

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 presented in Table 32 (note: ZIP codes are approximations for these areas).

Table 32: Major crimes by jurisdiction and ZIP code for the SAH Communities of Concern

	ZIP Code	Place
Major Crimes	95601	233.55 (Amador County Sheriff's Department)
	95629	
	95640	
	95666	
	95669	
	95642	450.10 (Jackson City PD)
	CA State	*312.7*

(Source: California Department of Justice, 2013)

Table 32 shows the major crime rate reported for ZIP codes which are serviced by the Amador County Sheriff's Office and the Jackson City Police Department. Crime rates for the Amador County Sheriff's Office were lower than the state benchmark for major crime, while crime rates for Jackson City PD were above the state rate.

Assault: Emergency Department Visits

Understanding safety in the SAH 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 SAH HSA area. Figure 19 shows ED visits to assaults in the area.

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[34] Cubbin, C., Pedregon, V., Egerter, S. and Braveman, P. (2008). *Where we live matters for our health: Neighborhoods and Health*. Retrieved from: http://www.commissiononhealth.org/PDF/888f4a18-eb90-45be-a2f8-159e84a55a4c/Issue%20Brief%203%20Sept%2008%20-%20Neighborhoods%20and%20Health.pdf
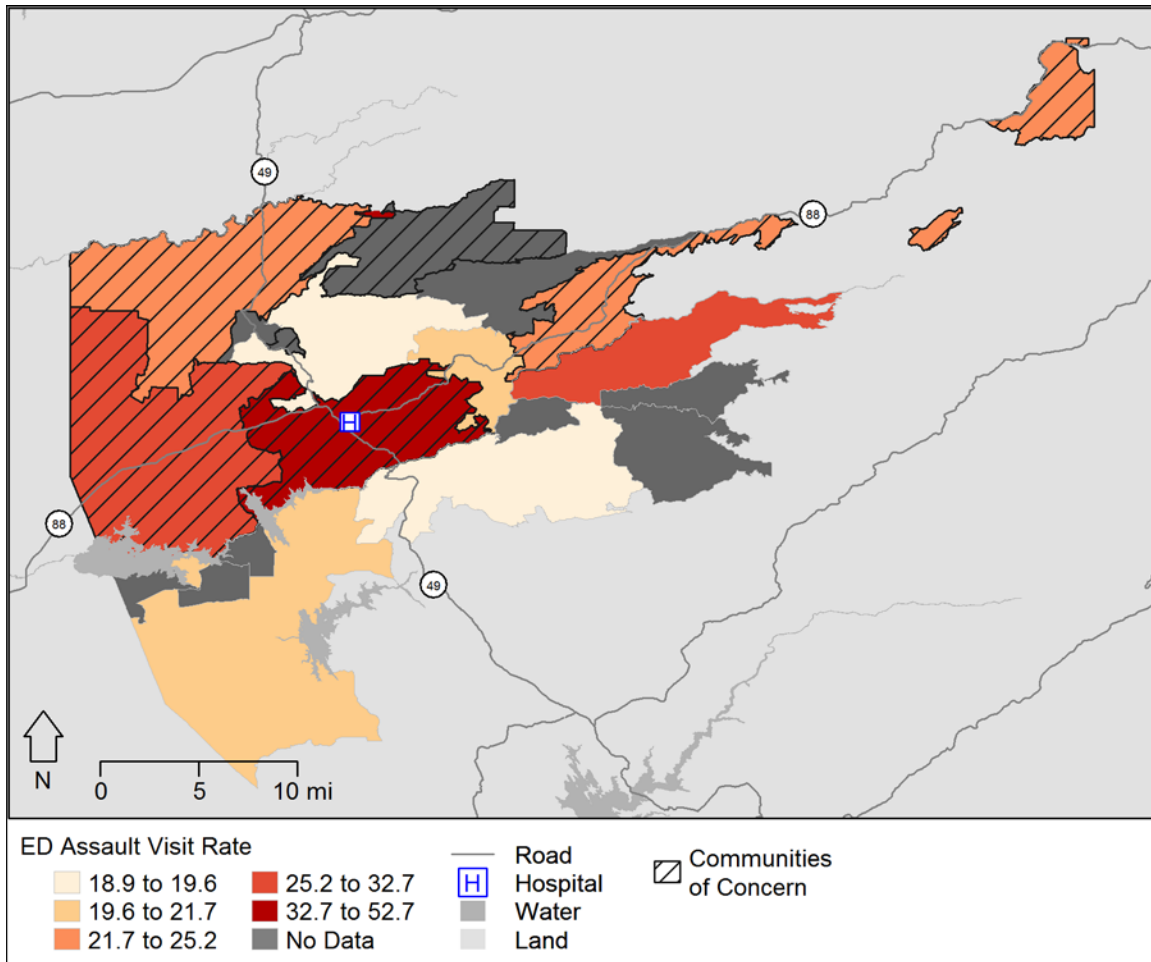
Figure 19: ED visits related to assault

The highest rate of ED visits due to assault was seen in the ZIP codes 95642 (Jackson) and 95640 (Ione) in comparison to the rest of the HSA. Data on hospitalizations due to assault was unavailable for the HSA except for ZIP code 95640 (Ione) at a rate of 5.6 hospitalizations per 10,000, a rate higher than both the county at 2.82 per 10,000 and the state rate at 3.89 per 10,000. In addition, key informants and community members both mentioned that domestic violence occurs in the HSA at a notable rate.

Traffic Accidents with Fatalities

An examination of fatal traffic accidents helps to provide insight on residents' physical safety as they travel through the area they live and work. Data on traffic accidents for 2013 revealed few fatal accidents occurred throughout the HSA, with the most amount (3 fatal accidents) occurring in ZIP code 95642 (Jackson) along major highways.

Physical Environment -- Air and Water Quality, Housing, and Transportation

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*.[35] 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 0 and a maximum of 100, with higher scores indicator a great pollution burden. The pollution factors included ozone and PM2.5 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.

A pollution burden score was identified for each census tract in the SAH HSA and is displayed in Figure 20. 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.
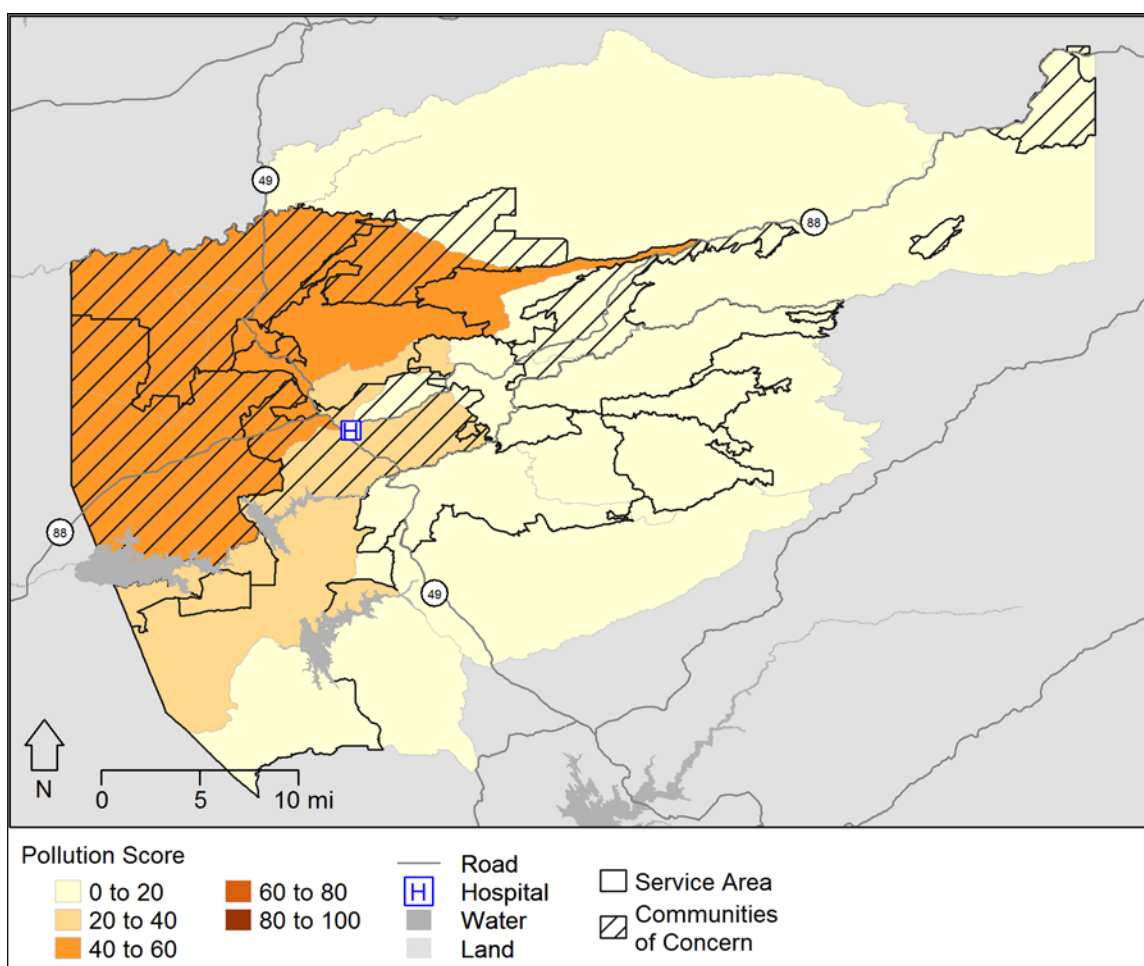
Figure 20: Pollution burden score for census tracts in the SAH HSA

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[35] *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

Figure 20 shows that portions of ZIP codes 95640 (Ione), 95669 (Plymouth), 95629 (Fiddletown), and 95601 (Amador City) had the highest Pollution Burden Score in the HSA. The effect of exposure to pollution contributes to the high rates of respiratory illness mentioned previously in this report. Qualitative data reveled that pollution was a concern for area residents, specifically around concerns of exposure to old mining areas of the HSA along the "Golden Chain Hwy 49", as well as drinking well water for some area residents.

Housing & Transit -- Housing Stability and Distance to Nearest Transit Stop

Examining where people live and how they navigate their community is important in order to understand the health of the community overall. This section examines housing stability and distance to a transit stop.

Housing Stability

One of the biggest health needs mentioned in the assessment was clean, stable, and good quality housing. The lack of a stable place to live can have negative health effects on individuals and families. Table 33 shows rates for various housing indicators by ZIP code for the Communities of Concern as an indicator of housing stability.

Table 33: Housing vacancy, people living per housing unit, and percent of population renting by ZIP code

ZIP Code	Percent Housing Vacancy	People per Housing Unit	Percent Renting
95601	11.5	1.81	26.0
95629	21.3	2.38	42.4
95640	16.3	2.70	20
95642	19.3	2.24	37.7
95666	36.1	2.25	13.7
95669	10.5	2.54	20.9
Amador County	21.1	2.32	23.9
CA State	*8.6*	*2.94*	*44.7*

(Source: Census, 2013)

All six Communities of Concern had a percent of vacancies which exceeded the state percentage of 8.6%. The largest percent of vacancies was found in ZIP code 95666 (Pioneer) at 36.1%. High vacancy rates are indicators of housing market conditions[36], specifically the affordability of housing in the area. The number of people per housing unit is an indicator of multiple people living together, which can be an indicator of poverty. The highest people-per-housing unit rates were seen in ZIP codes 95640 (Ione), 95669 (Plymouth) and 95629 (Fiddletown). Also, a large number of renters in a given geographical area can also be an indicator of the area's economic stability as well as housing costs. ZIP code 95629 (Fiddletown) had the highest percentage of renters in the HSA, a rate higher than the county benchmark.

Most key informants and community members in this assessment mentioned a lack of affordable and adequate housing in the HSA. Community members indicated that area housing is very expensive, and affordable housing has a 2-3 year wait list. The lack of housing was magnified with the most recent

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[36] 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

fire in the area which displaced many residents that had stable housing, placing increased demand for any housing in the area.

Distance to Nearest Transit Stop

Research shows that there are limits to the distances community residents are willing and capable of walking to access public transportation services. These distances are documented in a number studies and vary due to a number of factors such as climate, attractiveness of the area, the amount of traffic on streets, and similar,[37] but most estimates note that individuals will travel no more than one-fourth to one-third of a mile to access public transportation. Identifying the areas that are at least one-half mile from a transit station helps highlight areas where transportation barriers may be contributing to poorer health outcomes.

Given the rural landscape of the Sutter Amador HSA, not a single ZIP code in the area was within ½ mile of a transit stop. Key informants and community members indicated that many area residents struggle with access to adequate reliable transportation. This is especially problematic due to the lack of ample primary care, VA care and mental health providers in the HSA, furthering the need to travel a far distance to receive adequate care, *"Benefits and services start and end with transportation"* (KI_8). As one provider said, *"I think transportation to and from is probably one of the biggest issues for people who have limited access" (KI_2).* Another provider revealed: *"That's why they sell ambulance tickets. I think its $50 a month which gives you free rides in the ambulance for a year. You can buy a helicopter component to it too" (KI_4).*

Resources Potentially Available to Meet Significant Health Needs

Twenty seven resources were identified in the Communities of Concern in accordance with the analytical method detailed in Appendix B. The method included starting with the list of resources from the 2013 SAH CHNA, verification that the resource was 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 34: Resources potentially available to meet significant health needs in priority order

Significant Health Need (in priority order)	Number of resources
Access to mental/behavioral/substance abuse services	8
Access to primary care services	2
Access to transportation and mobility	2
Access to basic needs, such as housing and employment	19
Access to specialty care	1
Access to health education	15
Access to affordable, healthy food	5
Access to dental care and prevention	2
Safe and violent-free environment	3
Pollution Free communities	1

For more specific examination of resources by significant health need and by geographic locations, see the full list in Appendix H.

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

Impact of Actions Taken Since the Previous CHNA

The final regulations issued by the Department of Treasury on December 29, 2014 regarding nonprofit hospitals conducting CHNAs require that each hospital's CHNA report include: "… an evaluation of the impact of any actions that were taken since the hospital facility finished conducting its immediately preceding CHNA to address the significant health needs identified in the hospital facility's prior CHNA(s) (p. 78969)."[38] Similarly, the State of California requires all non-government nonprofit hospitals licensed by the state to submit a "Community Benefits Plan" to OSHPD annually. The plan must include: "…a description of the activities that the hospital has undertaken in order to address identified community needs within its mission and financial capacity…" (p. 1).[39] OHSPD makes each hospital's community benefit plan available to the general public through its website or by request. The following descriptions of the impact of actions taken by SAH was partially taken from the hospital's annual Community Benefit Plan.

Sutter Amador Hospital

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

Lack of access to primary and preventative services

Free Mammogram Screenings:

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

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

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

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

provide onsite primary and mental health care referrals and other community resources to the women.

Amador Lifeline

- In 2014, Amador Lifeline served a total of 299 clients, with clients ranging in age from 50-107 years. Clients maintain their self- respect, confidence, dignity and independence by continuing to live in their own residences with the safety and security with the help of Amador Lifeline's, emergency response service.

- In 2015, Amador Lifeline served a total of 230 clients, with clients ranging in age from 50-107 years, for more than 260 different encounters. Clients maintain their self- respect, confidence, dignity and independence by continuing to live in their own residences with the safety and security with the help of Amador Lifeline's, emergency response service. Amador Lifeline provided 20 various classes/workshops to improve health and 6 community events.

Amador Rides

- The Amador Rides program started in 2014, so full year outcomes are not available, but in about 6 months, this program served nearly 30 clients with more than 70 rides to medical appointments.

- In 2015, this program served 103 clients with 303 rides to medical appointments.

Soliciting for Public Comments

Limitations

Study limitations included challenges obtaining secondary quantitative data and assuring community representation via primary qualitative data collection. For example, most of the data used in this assessment were not available by race/ethnicity. In addition, data about behavioral issues and conditions like obesity were difficult to obtain at the sub-county level and were not available by race and ethnicity, resulting in the reliance on county data. The timeliness of the data also presented a challenge, as some of the data were collected in different years; however, this is clearly noted in the report to allow for proper comparison.

As always with primary data collection, gaining access to participants that best represent the populations needed for this assessment proved to be a challenge. Measures were taken to reach out to area organizations for recruitment, assuming that the organization represented a Community of Concern geographically, racially, ethnically, or culturally. Some key informants and organizations that helped with focus groups participated in the 2013 round of data collection, possibly contributing to assessment fatigue. To help with recruitment, focus group participants were offered incentives such as food and refreshments. During the data collection phase of the assessment, the Amador and Calaveras Counties had a large fire in the area. The fire provided a unique challenge for the assessment as it became challenging to schedule interviews with providers and focus groups with area residents.

Additionally, data collection of health resources in the hospital service areas was challenging; though an effort was made to verify all resources (assets) collected in the 2013 round via web search, we recognize that ultimately some resources may not be listed that exist in the HSA.

Conclusion

Nonprofit hospitals play a vital role in the communities they serve. In addition to the delivery of newborns and the treatment of disease, these important institutions work with and along-side other organizations to improve community health and wellbeing by working to prevent disease, improve access to healthcare, promote health education, eliminate health disparities, and similar. CHNAs play an important part in helping nonprofit hospitals, as well as other community organizations, determine where to focus community benefit and improvement efforts, including geographic locations and specific populations living in their service areas.

Appendices

Appendix A: Secondary Data Dictionary and Processing

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 stages. It begins with a list of the secondary indicators collected, organized according to the conceptual model used in the CHNA. Next, the approaches used to define ZIP code boundaries and integrate P.O. Box records into the analysis are described. General data sources are then listed, followed by a description of the basic processing steps applied to most indicators. It concludes by detailing additional specific processing steps used to generate a subset of more complicated indicators.

Secondary Indicators

The selection of secondary indicators was guided by the conceptual model illustrated in Figure A1. This model organizes individual health-related characteristics of populations in terms of how they relate to up- or down-stream factors of health and health disparities. Specific secondary indicators were selected to represent these characteristics in the needs assessment. Table A1 lists these indicators, and identifies which health-related characteristic they are primarily used to represent.
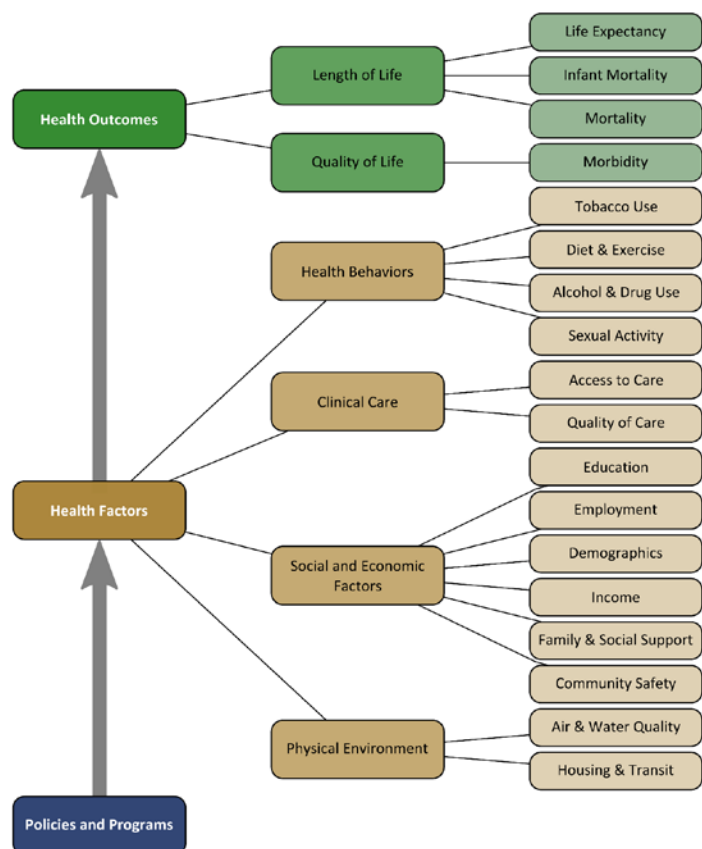
Figure A1: SAH Community Health Assessment Conceptual Model as modified from the County Health Rankings Model, Robert Wood Johnson Foundation, and University of Wisconsin, 2015

Table A1: Indicators used in the CHNA as organized by the County Health Rankings Model, Robert Wood Johnson Foundation, and University of Wisconsin, 2015

Conceptual Model			
Main Area	Sub Area	Concept	Indicator
Health Outcomes	Length of Life	Infant Mortality	Infant Mortality Rate
		Life Expectancy	Life Expectancy at Birth
		Mortality	Age-Adjusted All-Cause Mortality
			All Other Causes
			Alzheimer's Disease
			Cerebrovascular Disease (Stroke)
			Chronic Liver Disease and Cirrhosis
			Chronic Lower Respiratory Disease
			Diabetes Mellitus
			Diseases of the Heart
			Essential Hypertension & Hypertensive Renal Disease
			Female Mortality Rate
			Influenza and Pneumonia
			Intentional Self Harm (Suicide)

Conceptual Model			
Main Area	Sub Area	Concept	Indicator
			Male Mortality Rate
			Malignant Neoplasms (Cancer)
			Years Potential Life Lost (75)
			Nephritis, Nephrotic Syndrome and Nephrosis (Kidney Disease)
			Unintentional Injuries (Accidents)
	Quality of Life / Morbidity	Cancer	Breast Cancer
			Colorectal Cancer
			Lung Cancer
			Prostate Cancer
		Chronic Disease	Diabetes
			Heart Disease
			Hypertension
			Nephritis, Nephrotic Syndrome and Nephrosis (Kidney Disease)
			Stroke
		Infectious Disease	HIV/AIDS
			STIs
			Tuberculosis
		Injuries	Assault
			Self-Inflicted Injury
			Unintentional Injury
		Mental Health	Mental Health
		Respiratory	Asthma
			Chronic Obstructive Pulmonary Disease (COPD)
		Other Indicators	Hip Fractures
			Oral Cavity/Dental
			Low Birth Weight
			Total ED Discharge Rate
			Total H Discharge Rate
Health Factors	Health Behavior	Tobacco Use	Current Smokers
		Alcohol and Drug Use	Binge Drinking
			Mental Health, Substance Abuse
		Diet & Exercise	Obesity
			Food Deserts
			Modified Retail Food Environment Index (mRFEI)
			Park Access
		Sexual Activity	Teen Birth Rate
	Clinical Care	Access to Care	Health Professional Shortage Areas (Primary Care, Dental, Mental Health)
			Percent Uninsured
		Quality of Care	Prevention Quality Indicators (PQI)

	Conceptual Model		
Main Area	Sub Area	Concept	Indicator
	Social and Economic Factors	Community Safety	Major Crime Rate
			Traffic Accidents Resulting in Fatalities
		Demographics	Percent Asian (Not Hispanic)
			Percent Black (Not Hispanic)
			Percent Hispanic (Any Race)
			Percent American Indian (Not Hispanic)
			Percent Pacific Islander (Not Hispanic)
			Percent White (Not Hispanic)
			Percent Other Race or Two or More Races (Not Hispanic)
			Percent Minority (Hispanic or Non-White)
			Racial/Ethnic Diversity Index
			Population 5 Years or Older Who Speak Limited English
			Population by Age Group: 0-4, 5-14, 15-24, 25-34,45-54, 55-64, 65-74, 75-84, and 85 and over
			Median Age
			Percent Non-Citizen
			Percent Female
			Percent Foreign-Born
			Percent Male
			Percent Civilian Noninstitutionalized Population with a Disability
			Total Population
			Percent Over 18 Who are Civilian Veterans
		Education	Percent 25 or Older Without a High School Diploma
		Family and Social Support	Percent Single Female Headed Households
		Employment	Percent Unemployed
		Income	GINI Coefficient
			Median income
			Percent Families with Children in Poverty
			Percent Households 65 years or Older in Poverty
			Percent Single Female Headed Households in Poverty
			Percent with Public Assistance
			Percent with Income Less Then Federal Poverty Level
	Physical Environment	Air & Water Quality	Pollution Burden
		Housing	Average Population per Housing Unit
			Percent Renter-Occupied Housing Units
			Percent Vacant Housing Units
		Transit	Percent Households with No Vehicle
			Population Living Near a Transit Stop

ZIP Code Definitions

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

First, it should be understood that ZCTAs are approximate representations of ZIP codes, rather than exact matches. While this is not ideal, it is nevertheless the nature of the data being analyzed. Secondly, not all ZIP codes have corresponding ZCTAs. Some PO Box ZIP codes or other unique ZIP codes (such as a ZIP code assigned to a single facility) may not have enough addressees residing in a given census block to ever result in the creation of a ZCTA. But residents whose mailing addresses correspond to these ZIP codes will still show up in reported health outcome 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[40] were compared to ZCTA boundaries[41]. Because various health outcome 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 central year in the case of indicators aggregated over multiple years) for which the health outcome indicators 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 in which they fell, or in the case of rural areas that are not completely covered by ZCTAs, the ZCTA to which they were closest. Health outcome information associated with these PO Box or unique ZIP codes were then assigned added to the ZCTAs to which they were assigned.

For example, 95654 is the PO Box for Martell. ZIP Code 95654 is not represented by a ZCTA, but it could have patient data reported as health outcome variables. Through the process identified above, it was found that 95654 is associated with 95642, the ZIP Code for Jackson, which does have an associated ZCTA. Health outcome data for ZIP codes 95654 and 95642 were therefore assigned to ZCTA 95642, and used to calculate rates. All ZIP code level health outcome variables given in this report are therefore reporting approximate rates for ZCTAs, but for the sake of familiarity of terms they are presented in the body of the report as ZIP code rates.

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

[41] 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

<center>**Data Sources**</center>

The majority of health factor and health outcome indicators 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 both to provide descriptions of population characteristics for the study area, as well as to calculate rates for health outcome indicators. Table A2 lists the 2013 population characteristic indicators and sources. Table A3 lists sources for indicators used to calculate health outcome indicator rates, which were collected for 2012, 2013, and 2014. These demographic indicators 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.

Table A2: Demographic indicators collected from the US Census Bureau[42]

Derived Indicator Name	Source Indicator 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: -	2013 American Community Survey 5-year Estimate Table B17017

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[42] 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

Derived Indicator Name	Source Indicator Names	Source
	Nonfamily households: - Female householder: - Householder 65 years and over; Total Households	
Median Income	Estimate; Median household income in the past 12 months (in 2013 inflation-adjusted dollars)	2013 American Community Survey 5-year Estimate Table B19013
GINI Coefficient	Gini Index	2013 American Community Survey 5-year Estimate Table B19083
Average Population per Housing Unit	Total population in Occupied Housing Units	2013 American Community Survey 5-year Estimate Table B25008
Percent with Income Less Then Federal Poverty Level	Total: - Under .50; Total: - .50 to .99	2013 American Community Survey 5-year Estimate Table C17002
Percent Foreign Born	Total population - Foreign born	2013 American Community Survey 5-year Estimate Table DP02
Percent Non-Citizen	Foreign-born population - Not a U.S. citizen	2013 American Community Survey 5-year Estimate Table DP02
Percent Over 18 Who 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 on Public Assistance	INCOME AND BENEFITS (IN 2013 INFLATION-ADJUSTED DOLLARS) - With cash public assistance income; INCOME AND BENEFITS (IN 2013 INFLATION-ADJUSTED DOLLARS) - With cash public assistance income	2013 American Community Survey 5-year Estimate Table DP03
Percent on 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

Derived Indicator Name	Source Indicator Names	Source
Percent Households with No Vehicle	Occupied housing units - No vehicles available	2013 American Community Survey 5-year Estimate Table DP04
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

Derived Indicator Name	Source Indicator Names	Source
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

Table A3: Census indicators used for Health Outcome Rate Calculations[,43]

Derived Indicator Name	Source Indicator Names	Source
Total Population	Total Population	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013) 2010 Decennial Census Summary File 1
Female	Female	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013)

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[43] 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

Derived Indicator Name	Source Indicator Names	Source
Male	Male	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013)
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); 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); 2010 Decennial Census Summary File 1 Table PCT12
Age 5 to 14	5 to 9 years; 10 to 14 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013)
Age 15 to 24	15 to 19 years; 20 to 24 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013)
Age 25 to 34	25 to 34 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013)
Age 35 to 44	35 to 44 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013)
Age 45 to 54	45 to 54 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013)
Age 55 to 64	55 to 59 years; 60 to 64 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013)
Age 65 to 74	65 to 74 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013)
Age 75 to 84	75 to 84 years	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013)
Age 85 and Over	85 Years And Over	American Community Survey 5-year Estimate Table DP05 (2011, 2012, 2013)
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)
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)
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)
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)

Derived Indicator Name	Source Indicator Names	Source
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)

Collected health outcome data included the number of emergency department (ED) discharges, hospital (H) discharges[44], and mortalities associated with a number of conditions. Aggregated 2011 – 2013 ED and H discharge data were obtained from the Office of Statewide Health Planning and Development (OSHPD). Table A4 lists the specific indicators 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 principal 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, these data were also broken down by sex (male and female), age (under 1 year; 1 to 4 years; 5 to 14 years; 15 to 24 years; 25 to 34 years; 35 to 44 years; 45 to 54 years; 55 to 64 years; 65 to 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). In addition to the hospitalization and emergency department discharge data shown in Table A4, aggregated 2011 – 2013 Prevention Quality Indicators (PQI) (Version 4.5a) data were also obtained from OSHPD at the ZIP code and county levels.

To address patient privacy concerns, OSHPD applied a number of masking techniques to all their data (both ED and H discharge and PQI). First, rather than providing data for a single year, data for each condition were totaled for 2011 through 2013 for each ZIP code or county. For the PQI dataset, values were not reported for any ZIP code or county where fewer than 11 cases were reported. For the ED and H discharge datasets, two additional levels of masking were applied. First, ZCTA sex, age, and normalized race/ethnicity indicators were not available for ZCTAs in what OSHPD classifies as "Small Counties." County level values for these small counties were reported in aggregated groups as follows: Alpine, Inyo, Mariposa, and Mono; Modoc, Plumas, and Sierra; and Colusa, Del Norte, Glenn, and Trinity. Secondly, rates were not reported for any ZIP code or county where fewer than 11 cases were reported.

Table A4: 2011 – 2013 OSHPD Hospitalization and Emergency Department Discharge Data

Category	Indicator 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
	Ischemic Heart Disease	410-414
	Chronic Kidney Disease	580-589

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[44] While OSHPD data actually refer to discharges, for simplicity they are referred to as the visits they are taken to represent throughout the body of the report.

Category	Indicator Name	ICD9/E Codes
	Stroke	430-438
Infectious Disease	HIV/AIDS	042-044
	STIs	042-044, 090-099, 054.1,079.4
	Tuberculosis	010-018, 137
Injuries[45]	Assault	E960-E969, E999.1
	Self-Inflicted Injury	E950-E959
	Unintentional Injury	E800-E869, E880-E929
Mental Health	Mental Health	290, 293-298, 301-302, 310-311
	Mental Health: Substance Abuse	291-292, 303-305
Respiratory	Asthma	493
	Chronic Obstructive Pulmonary Disease (COPD)	490-492, 494, 496
Other	Hip Fractures	820
	Oral Cavity/Dental	520-529
	Osteoporosis	733
Overall Discharges	Total Discharges	All Codes

Mortality and birth-related data for each ZIP code in 2010, 2011, and 2012 were collected from the California Department of Public Health (CDPH). The specific indicators collected are defined in Table A5. The majority of these indicators 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 values for the years 2010 to 2012. These indicators include the total number of live births, total number of infant deaths (ages under 1 year), all-cause mortality by age, births with low infant birth weight, and births with mother's age at delivery under 20. Table A5 consequently also lists the years for which each indicator was collected.

Table A5: CDPH Birth and Mortality Data by ZIP Code

Indicator 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

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[45] E-code definitions for injury indicators 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

Indicator Name	ICD10 Code	Years Collected
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

The remaining secondary indicators were collected from a variety of sources, and at various geographic levels. Table A6 lists the sources of these indicators, and lists the geographic level at which they were reported.

Table A6: Remaining Secondary Indicators

Indicator	Year	Definition	Reporting Unit	Data Source
Binge Drinking	2014	Adult Binge Drinking in the Past Year	County	2014 California Health Interview Survey http://ask.chis.ucla.edu/AskCHIS/tools/_layouts/AskChisTool/home.aspx#/geography (last accessed 9 Oct 2015)
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)

Indicator	Year	Definition	Reporting Unit	Data Source
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
Obesity	2014	Children Overweight for age (does not factor height); Body Mass Index – 4 level (teen only); Body Mass Index – 4 level (adult only)	County	2014 California Health Interview Survey http://ask.chis.ucla.edu/AskCHIS/tools/_layouts/AskChisTool/home.aspx#/geography (last accessed 12 Jan 2015)
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)

General Processing Steps

Rate Smoothing

All OSHPD, as well as all single-year CDPH, indicators 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 codes with no value reported were treated as having a value of 0. For OSHPD data, which, unlike CDPH data, had clearly masked values, 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 OSHPD 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 indicators. However, rather than calculating raw rates, empirical Bayes smoothed rates (EBR) were created for all indicators possible[46]. 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 indicator 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 indicator 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 indicators (2010 – 2012), 2011 data were used. Population data from 2012 were used to calculate single-year CDPH indicators.

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 during the smoothing process, but were kept as NA for the individual ZCTA. This meant that smoothed rates could be calculated for indicators, but if a given ZCTA had a value of NA for a given indicator, it retained that NA value after smoothing.

Empirical Bayes smoothing rates were attempted for every overall indicator, but could not be calculated for certain indicators. In these cases, raw rates were used instead. The final rates in either case for H, ED, and the basic mortality indicators 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[47] was performed on the all-cause mortality indicator. Because the occurrence of mortality varies as a function of the age of the population, differences in the age structure between ZCTAs could obscure

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

[47] 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.

the true nature of the variation in its pattern. For example, it would not be unusual for a ZCTA with an older population to have higher rate mortality than a ZCTA with a younger population. In order to accurately compare the experience of mortality between these two populations, the age profile of the ZCTA needs to be accounted for. Age adjusting the rates allows this to occur.

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

Benchmark Rates
A final step was to obtain or generate benchmark rates to compare the ZCTA level rates to. Benchmarks for all OSHPD indicators 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 indicator 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 values. State rates were calculated as raw rates by first summing all county level values (treating NA values 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 indicator 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[48,49], or else obtained from the County Health Status Profiles 2014[50]. The resulting benchmark values for CDPH and OSHPD indicators were all reported as rates per 10,000 unless the original indicator was reported using some other standard, as described below.

Processing for Specific Indicators
Additional processing was needed to create the Community Health Vulnerability Index (CHVI), the CDPH-derived health outcome indicators, and some of the other health factor indicators. The process used to calculate these indicators are described in this section below.

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

[49] 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/

[50] 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

Community Health Vulnerability Index (CHVI)

The CHVI is a health care disparity index largely based on the Community Need Index (CNI) developed by Barsi and Roth[51]. The CHVI uses the same basic set of demographic indicators to address health care disparities as outlined in the CNI, but these indicators are aggregated in a different manner to create the CHVI. For this report, the following nine indicators 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 indicator was scaled using a min-max stretch, so that the tract with the maximum value for a given indicator within the study area received a value of 1, and the tract with the minimum value for that same indicator within the study area received a 0. All scaled indicators were then summed to form the final CHVI. Areas with higher CHVI values therefore represent locations with relatively higher concentrations of the target index populations, and are likely experiencing greater health care disparities.

CDPH-Derived Health Outcome Indicators

Infant Mortality Rate

The infant mortality rate reports the number of infant deaths per 1,000 live births. It was calculated by dividing the number of deaths for those with ages below 1 from the years 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

The 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 the years 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[52] using the Human Ecology, Evolution, and Health Lab's[53] 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 pre-calculated, smoothed, age-stratified mortality rates based on mortality reported in given age categories from 2010 – 2012.

[51] Barsi, E. L., & Roth, R. (2005). The "Community Needs 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

[52] 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.

[53] Human Ecology, Evolution, and Health Lab. (2009, March 2). *Life tables and R programming: Period Life Table Construction*. Retrieved February 16, 2013, from Formal Demogrpahy 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[54]. It was calculated here following the method described by Dranger and Remington[54]. 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 age 75 out of 10,000 people.

Health Factors

Additional specific processing was conducted to derive several health factor indicators. These include the diversity index, major crime rates, park access, and the ZCTA-level Modified Retail Food Environment Index (mRFEI). Details on their calculation are provided below.

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[55], but using Shannon's evenness index[56] rather than the specific methodology described therein. The diversity index represents how evenly the 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, and 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 Rates

Major crimes reported in the State of California Department of Justice's Crime Data reports are listed by reporting police agency. In order to estimate major crime 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 populations were added to those places. For example, the crimes 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 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.

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[54] 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

[55] 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

[56] Beals, M., Gross, L., & Harrell, S. (2000). *Diversity Indices: Shannon's H and E.* Retrieved June 20, 2015, from University of Tennessee Knoxville, The Institute for Environmental Modeling: http://www.tiem.utk.edu/~gross/bioed/bealsmodules/shannonDI.html

To calculate rates, the total number of crimes 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 within the county with reported crimes. This meant that the major crime rate reported for the county was reporting not the total county's crime rate, but the rate of crimes occurring in those portions of the county that were not otherwise covered by another reporting agency.

Overall county major crime rates 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 Justice's Crime Data reports, available online at: http://oag.ca.gov/crime.

Park Access

The park access indicator reports the percentage of the 2010 population residing within each ZCTA that lives in a Census block that intersects a one-half mile buffer around the closest park. Esri's U.S. Parks data set[57], 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) indicator 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 indicator was calculated using a modification of the methods described by the National Center for Chronic Disease Prevention and Health Promotion[58] 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 10 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 that 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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[57] Esri. (2010). U.S. and Canada Detailed Streets. *Esri Data & Maps: StreetMap* (10 edition)

[58] 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 B: Detail Analytic Methodology

The purpose of this appendix is to provide a detailed description of the analytical methodologies utilized in the 2016 Community Health Needs Assessment. It begins with a general methodological overview of the project, and then provides a more detailed description of the methods used to identify 2016 Communities of Concern, identify and prioritize significant health needs, and identify the resources available in the HSA to address health needs.

Overview

As illustrated in Figure B1 below, the project was conducted using alternating data collection and analysis stages. The project began with a definition of the hospital service area based on the definition used for the previous 2013 Community Health Needs Assessment. Area-wide primary and secondary data were then collected for the defined HSA. Primary data included interviews of multiple key informants who were selected based on their ability to speak to conditions across the HSA. Secondary data included the health factor and health outcome indicators described in detail in Appendix A, the list of Communities of Concern identified for the HSA in the 2013 CHNA, as well as the Community Health Vulnerability Index (CHVI) values for each HSA ZCTA.
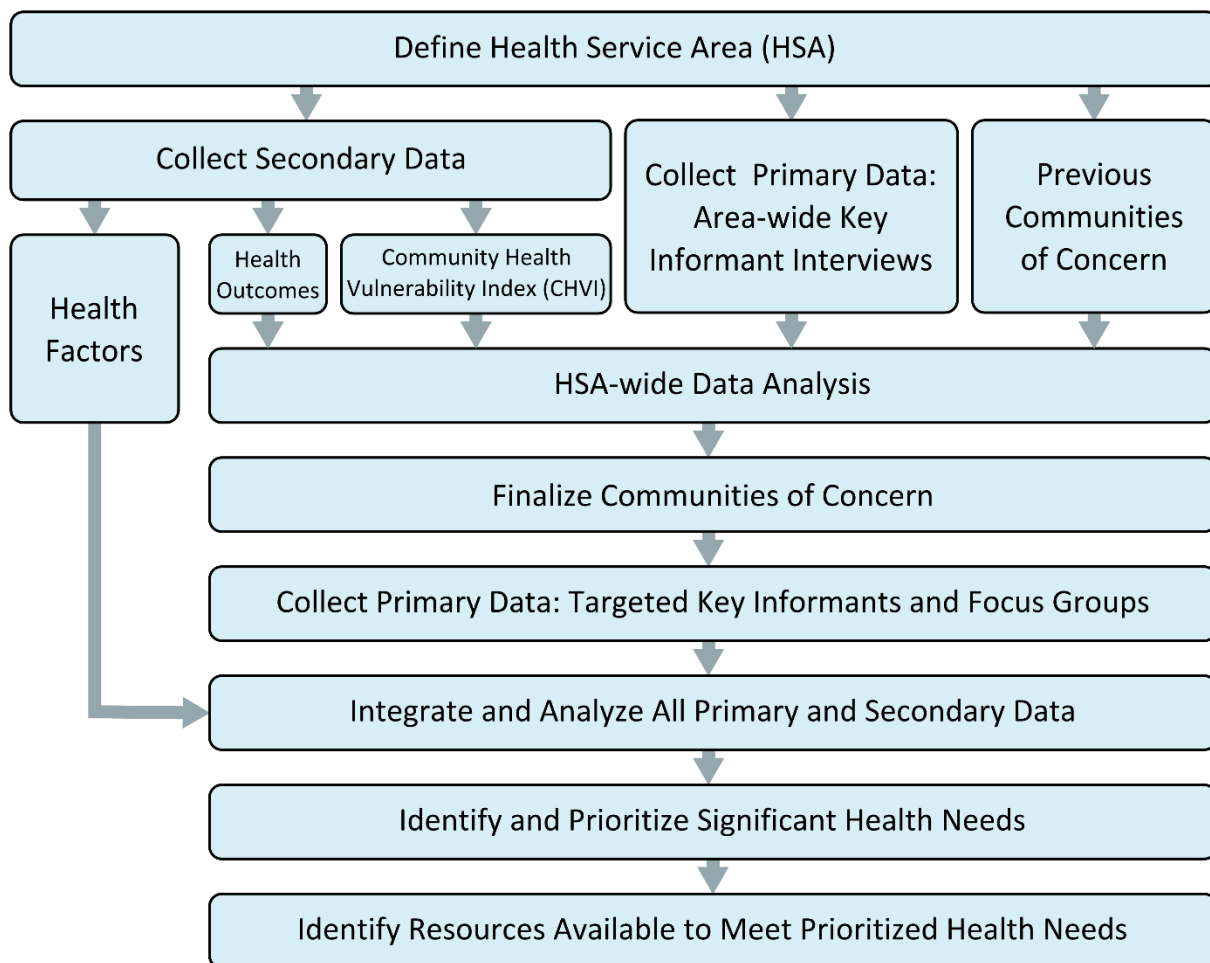
Figure B1: 2016 CHNA process model

2016 Communities of Concern were then defined following an HSA-wide analysis of the secondary health outcome indicators and CHVI values, the 2013 HSA Communities of Concern, and area-wide key informant interviews. This included both a consideration of geographic areas, identified through secondary data analysis, as well as subgroups experiencing disparities, based on an analysis of the area-wide primary data.

The 2016 Communities of Concern were then used to identify what are referred to as "targeted" key informants and focus groups. These targeted primary data sources were selected based on their ability to speak to the needs of particular geographic locations or subgroups experiencing disparities. Overall primary data, and secondary data for the Communities of Concern, were then integrated to identify the significant health needs for the HSA. Significant health needs were then prioritized based on analysis of the primary data. Finally, resources available within the HSA to address health needs were identified.

Community of Concern Identification
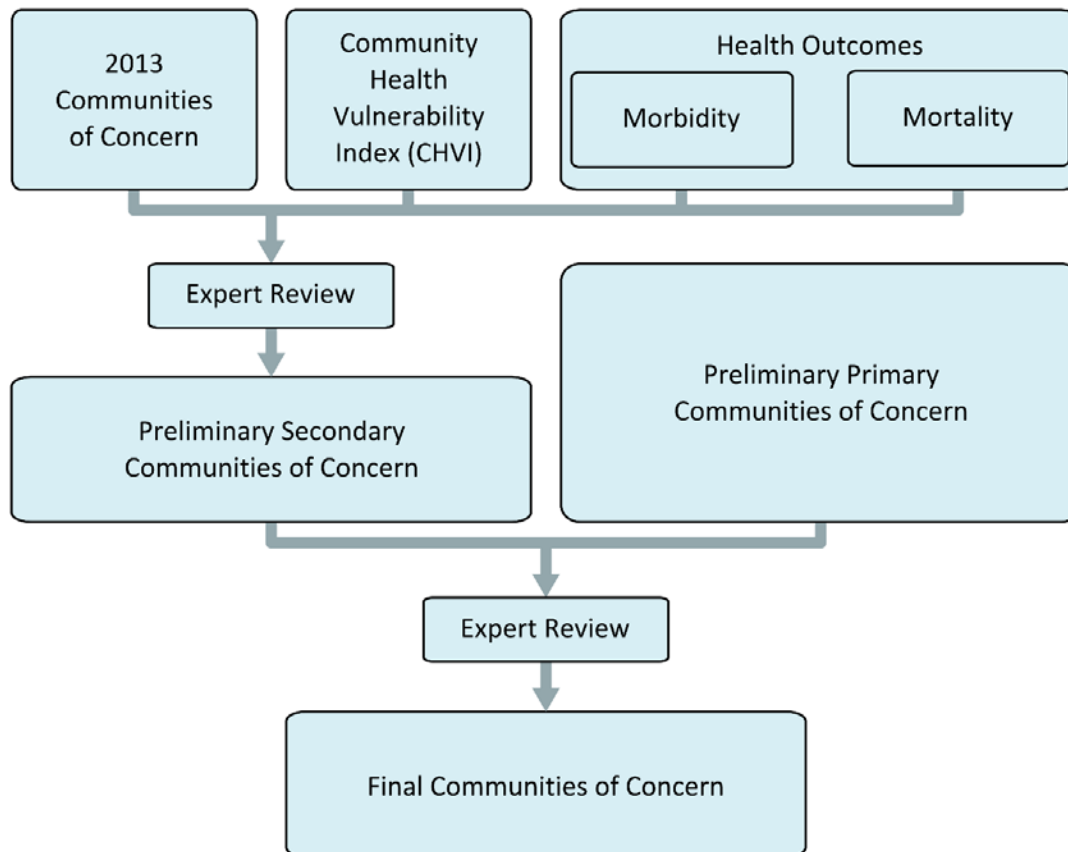
Figure B2: Community of Concern Identification Process

Communities of Concern are used to represent those geographic locations or population subgroups within the HSA that are likely experiencing the greatest overall heath disparities. As illustrated in Figure B2 above, the 2016 Communities of Concern were identified through a process that drew upon both primary qualitative data as well as secondary quantitative data. Four main secondary data inputs were used in this analysis: Communities of Concern identified in the 2013 CHNA; the Census tract-level Community Health Vulnerability Index (CHVI); and representing health outcomes, mortality data from CDPH and morbidity data in the form of emergency department and hospital discharge date obtained from OSHPD.

An evaluation procedure was developed for each of these datasets and applied to each ZCTA within the HSA. In order to be classified as a preliminary secondary Community of Concern, a ZCTA had to meet two of the following four selection criteria:

2013 Community of Concern
The ZCTA was included in the 2013 CHNA Community of Concern list for the HSA. This was done to allow greater continuity between CHNA rounds, and also reflects the work of the hospital systems oriented to serve these disadvantaged communities.

Community Health Vulnerability Index (CHVI)

The ZCTA intersected a census tract whose CHVI value fell within the top 20% for the HSA. These census tracts represent areas with consistently high concentrations of certain demographic subgroups identified in the research literature as being more likely to experience health-related disadvantages.

Morbidity

The processes for reviewing ZCTAs based on morbidity were substantially more complicated than those used for the 2013 Communities of Concern or the CHVI. It began by selecting a subset of emergency department and hospitalization visit discharge rate indicators obtained from OSHPD, given in Table B1 below. Next, the values reported for each indicator in that ZCTA were compared to the lowest of the county and state benchmark rates. If a given ZCTA had a value higher than this benchmark for a given indicator, it was given a value of 1 for that indicator. If its value was below this benchmark, it was given a value of 0.

Table B1: OSHPD emergency department and hospitalization visit discharge rate indicators used in Community of Concern identification

OSHPD Emergency Department and Hospitalization Visit Discharge Rate Indicators Used in Community of Concern Identification
Female Breast Cancer, Colorectal Cancer, Lung Cancer, Male Prostate Cancer, Diabetes, Heart Disease, Hypertension, Kidney Diseases, Stroke, HIV, STIs, Tuberculosis, Assault, Intentional Self Injury, Unintentional Injury, Mental Health, Mental Health: Substance Abuse, Asthma, COPD, Hip Fracture, Osteoporosis, Oral/Dental Diseases

Once these comparisons were made for each indicator in each ZCTA, the total recoded values (0 or 1) were summed for each ZCTA across all indicators to create a morbidity index value. ZCTAs that fell within the top 20% of this morbidity index met the Community of Concern morbidity selection criteria.

Mortality

The process for reviewing ZCTAs based on mortality was very similar to that used for morbidity. A subset of CDPH mortality rates, as well as associated derived indicators, was identified for inclusion in the analysis, and is shown in Table B2. As with the morbidity analysis, ZCTA values for each indicator were compared to the better of the appropriate county and state benchmarks, and ZCTAs with indicator values worse than this benchmark were recoded to 1, while ZCTAs with indicator values better than the worst benchmark were recoded to 0.

Table B2: Mortality-related indicators used in Community of Concern identification

CDPH Mortality related Indicators Used in Community of Concern Identification
Diseases of the Heart, Cancer, Stroke, Chronic Lower Respiratory Disease, Alzheimer's Disease, Unintentional Injuries, Diabetes Mellitus, Influenza and Pneumonia, Chronic Liver Disease and Cirrhosis, Hypertension, Intentional Self-Injury, Kidney Diseases, Age-Adjusted Mortality, Infant Mortality Rate, Years Potential Life Lost (75), Life Expectancy at Birth

The main difference between the mortality and morbidity approaches is that instead of all mortality-related indicators being weighted equally, as with the morbidity approach, a relative weighted scheme was developed for the mortality-related indicators.

Expert judgment weights were developed using an Analytical Hierarchy Approach (AHP)[59]. This approach used a comparison matrix completed by an internal Community Health Insight subject area expert to rate the relative importance between each pair of mortality indicators in the analysis. These pair-wise importance comparisons were then processed to generate a priority matrix used to weight the mortality indicators. Indicators receiving a higher prioritization value had more weight in determining which ZCTAs would be included as preliminary secondary Communities of Concern.

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[59] Saaty, Thomas. 1980. *The Analytic Hierarchy Process: Planning, Priority Setting, Resource Allocation.* New York: McGraw-Hill.

The recoded (0 or 1) values for each indicator in each ZCTA were then multiplied by the corresponding indicator weight, and the resulting values were summed across all indicators for each ZCTA to create a mortality index. The ZCTAs that fell within the top 20% of this mortality index met the Community of Concern mortality selection criteria.

Integration of Secondary Criteria

Any ZCTA that met two of the four selection criteria (2013 Community of Concern, CHVI, Morbidity, and Mortality) was reviewed for inclusion as a 2016 Community of Concern. An additional round of expert review was applied to determine if any other ZCTAs not thus far indicated should be included based on some other unanticipated secondary data consideration. This list then became the final Preliminary Secondary Communities of Concern.

Preliminary Primary Communities of Concern

Preliminary primary communities of concern were identified by reviewing the geographic locations or population subgroups that were consistently identified by the area-wide primary data sources (key informant interviews).

Integration of Preliminary Primary and Secondary Communities of Concern

Any ZCTA that was identified in either the Preliminary Primary or Secondary Community of Concern list was considered for inclusion as a 2016 Community of Concern. An additional round of expert review was then applied to determine if, based on any primary or secondary data consideration, any final adjustments should be made to this list. The resulting set of ZCTAs was then used as the final 2016 Communities of Concern.

Significant Health Need Identification
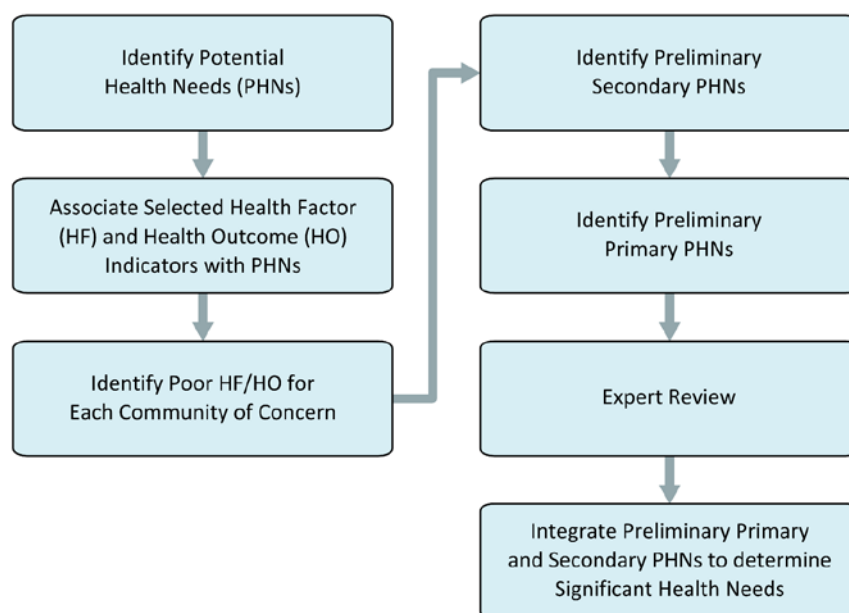
Figure B3: Significant health needs identification process

The general methods through which significant health needs (SHNs) were identified are shown in Figure B3 above and described here in greater detail. The first step in this process was to identify a set of potential health needs (PHNs) from which significant health needs could be selected. This was done by reviewing the health needs identified in the Sutter Amador/Sacramento region during the 2013 CHNA, and then supplementing this list based on a preliminary analysis of the primary qualitative data collected for the 2016 CHNA. This resulted in a list of 10 PHNs for the HSA, shown in Table B2 below.

Table B2: Potential health needs

2016 Potential Health Needs (PHNs)	
PHN1	Access to mental / behavioral / substance abuse services
PHN2	Access to quality primary care health services and prescription drugs
PHN3	Access to affordable, healthy food
PHN4	Safe and violence-free environment
PHN5	Access to dental care and preventative services
PHN6	Pollution-free living environment
PHN7	Access to basic needs, such as housing and employment
PHN8	Access to transportation and mobility
PHN9	Access to specialty care
PHN10	Access to health education and health literacy

The next step in the process was to identify primary and secondary indicators associated with each of these health needs as shown in Table B3 below. Primary indicator associations were used to guide coding of the primary qualitative data sources to specific PHNs.

Table B3: Primary and secondary indicators associated with potential health needs

	Health Need	Quantitative Indicators	Qualitative Indicators
PHN1	Access to mental/behavioral/substance abuse services	• CDPH – Suicide • OSPHD – Mental health (ED/H) • Mental Health – substance abuse (ED/H) • OSHPD – Intentional self-injury (ED/H) • Health provider Shortage Area: Mental health	• Self-injury • Mental health and coping issues • Substance abuse • Smoking • Stress • Mentally ill homeless • PTSD
PHN 2	Access to quality primary care health services and prescription drugs	• OSHPD – Total ED discharge rate • OSHPD – Female breast cancer (ED/H) • OSHPD – Colorectal cancer (ED/H) • OSHPD – Male Prostate cancer (ED/H) • OSHPD – Total hospital discharge rate • OSHPD – PQI • Health Provider Shortage Area: Primary care • Uninsured	• Quality of care • Access to care • Health insurance • Care for cancer/cancer occurrence • Indicators in PQI: diabetes, COPD, CRLD, HTN, HTD, asthma, pneumonia
PHN 3	Access to affordable, healthy food	• CDPH – Cancer • CDPH – Diabetes • CDPH – Heart disease • CDPH – Hypertension • CDPH – NEP	• Food access/insecurity • Community gardens

Health Need		Quantitative Indicators	Qualitative Indicators
		• CDPH – Stroke • OSHPD – Diabetes (ED/H) • OSHPD – Heart disease (ED/H) • OSHPD – Hypertension (ED/H) • OSHPD – NEP (ED/H) • OSHPD – Stroke (ED/H) • USDA-defined Food Deserts • Modified Retail Food Environment Index	• Fresh fruits and vegetables • Distance to grocery stores • Food swamps • Chronic disease outcomes related to poor eating • Diabetes, HTD, HTN, stroke, kidney issues, cancer
PHN 4	Safe and violence free environment	• OSHPD – Assault (ED/H) • OSHPD – Mental health (ED/H) • OSHPD – Mental health: Substance abuse (ED/H) • CHIS – Binge drinking • traffic accidents with fatalities • Major crimes • Park access	• Crime rates • Violence in the community • Feeling unsafe in the community • Substance abuse: Alcohol and drugs • Access to safe parks • Pedestrian safety • Safe streets • Safe places to be active
PHN 5	Access to dental care and preventive services	• OSHPD – Dental (ED/H) • Health Provider Shortage Area: Dental	• Any issues related to dental health • Access to dental care
PHN 6	Pollution-free living environment	• CDPH – Cancer • CDPH – Chronic Lower Respiratory Disease • OSHPD – Asthma (ED/H) • OSHPD – COPD (ED/H) • OSHPD – Lung cancer (ED/H) • CHIS: Adult and teen current smokers • Pollution score	• Smoking • Unhealthy air, water, housing, • Health issues: asthma, COPD, CLRD, lung cancer

	Health Need	Quantitative Indicators	Qualitative Indicators
PHN 7	Access to basic needs, such as food, housing, jobs	• CDPH – Age-adjusted all-cause mortality • CDPH – Infant mortality rate • CDPH – Life expectancy at birth • People per occupied housing unit • Housing unit vacancy rate • Percent with no diploma • Median household income • Percent below the federal poverty level • Public assistance • Renters • Unemployed	• Employment and unemployment • Poverty • Housing issues • Homelessness • Education access • Community quality of life
PHN 8	Access to transportation and mobility	• Households with no vehicle • Distance to transit stop greater than ½ mile	• Physical access issues • Cost of transportation • Ease of transportation access • No car
PHN 9	Access to specialty care	• OSHPD – Diabetes (H) • OSHPD – Heart disease (H) • OSHPD – Hypertension (H) • OSHPD – Stroke (H) • OSHPD - Nephritis, nephrotic syndrome and nephrosis (H) • OSHPD – PQI • CDPH – Diabetes • CDPH – Heart disease • CDPH – Hypertension • CDPH - Nephritis, nephrotic syndrome and nephrosis	• Seeing a specialist for health conditions • Diabetes-related specialty care • Specialty care for: HTD, HTN, stroke, kidney disease
PHN 10	Access to Health Education and Health Literacy	• CHIS – Adult and teen current smokers • CHIS – Binge drinking • CDPH – Influenza and pneumonia • CDPH – Unintentional injury	• Factors related to preventing disease or injury • Unintentional injury • Smoking and alcohol/drug abuse

Health Need	Quantitative Indicators	Qualitative Indicators
	• CDPH – Diabetes • CDPH – Heart disease • CDPH – Hypertension • CDPH – Stroke • CDHP – Nephritis, nephrotic syndrome and nephrosis • CDPH – Teen birth rate • OSHPD – HIV (ED/H) • OSHPD – STI (ED/H) • OSHPD – TB (ED/H) • OSHPD – Unintentional injuries (ED/H) • OSHPD – Diabetes (ED/H) • OSHPD – Heart disease (ED/H) • OSHPD – Hypertension (ED/H • OSHPD – Stroke (ED/H) • OSHPD – Nephritis, nephrotic syndrome and nephrosis (ED/H)	• Teen pregnancy • HIV/STD • TB • Influenza and pneumonia • Health classes • Health promotion teams and interventions • Need for health literacy

Next, values for the secondary health factor and health outcome indicators identified above in each Community of Concern were compared to the worst relevant state or county benchmarks to determine if a secondary indicator was problematic in the given Community of Concern. While some indicators were available at the ZCTA level, others were not, and so their geography was compared to the Community of Concern ZCTAs to identify surrogate values for each ZCTA. Additionally, some indicators were considered problematic if they exceeded the relevant benchmark, while others were problematic if they were below the benchmark. Table B4 lists the ZCTA measures or surrogate values used for each secondary indicator, and describes the comparison made to the benchmark to determine if it was problematic.

Table B4: ZCTA measure for PHN identification and benchmark comparisons

Indicator	ZCTA Measure for PHN Identification	Benchmark Comparison
Life Expectancy at Birth	ZCTA Rate	Less than
Age-Adjusted All-Cause Mortality	ZCTA Rate	Greater than
Infant Mortality Rate	ZCTA Rate	Greater than
Malignant Neoplasms (Cancer) (Mortality)	ZCTA Rate	Greater than
Chronic Lower Respiratory Disease (Mortality)	ZCTA Rate	Greater than
Diabetes Mellitus (Mortality)	ZCTA Rate	Greater than
Diseases of the Heart (Mortality)	ZCTA Rate	Greater than
Essential Hypertension & Hypertensive Renal Disease (Mortality)	ZCTA Rate	Greater than
Unintentional Injuries (Mortality)	ZCTA Rate	Greater than

Indicator	ZCTA Measure for PHN Identification	Benchmark Comparison
Chronic Kidney Disease (Mortality)	ZCTA Rate	Greater than
Influenza and Pneumonia (Mortality)	ZCTA Rate	Greater than
Cerebrovascular Disease (Stroke) (Mortality)	ZCTA Rate	Greater than
Intentional Self Harm (Suicide) (Mortality)	ZCTA Rate	Greater than
Traffic Accidents Resulting in Fatalities	Number in ZCTA	Greater than 0
Assault (ED/H)	ZCTA Rate	Greater than
Asthma (ED/H)	ZCTA Rate	Greater than
Breast Cancer (ED/H)	ZCTA Rate	Greater than
Colorectal Cancer (ED/H)	ZCTA Rate	Greater than
COPD (ED/H)	ZCTA Rate	Greater than
Diabetes (ED/H)	ZCTA Rate	Greater than
Oral Cavity/Dental (ED/H)	ZCTA Rate	Greater than
HIV/AIDS (ED/H)	ZCTA Rate	Greater than
Heart Disease (ED/H)	ZCTA Rate	Greater than
Hypertension (ED/H)	ZCTA Rate	Greater than
Lung Cancer (ED/H)	ZCTA Rate	Greater than
Mental Health (ED/H)	ZCTA Rate	Greater than
Mental Health: Substance Abuse (ED/H)	ZCTA Rate	Greater than
Chronic Kidney Disease (ED/H)	ZCTA Rate	Greater than
Prostate Cancer (ED/H)	ZCTA Rate	Greater than
Intentional Self-Injury (ED/H)	ZCTA Rate	Greater than
STIs (ED/H)	ZCTA Rate	Greater than
Stroke (ED/H)	ZCTA Rate	Greater than
Tuberculosis (ED/H)	ZCTA Rate	Greater than
Unintentional Injuries (ED/H)	ZCTA Rate	Greater than
Total ED Discharges	ZCTA Rate	Greater than
Total H Discharges	ZCTA Rate	Greater than
PQI	ZCTA Rate	Greater than
Teen Pregnancy Rate	ZCTA Rate	Greater than
Binge Drinking	County Rate	Greater than state
Current Smokers	County Rate	Greater than state
Food Deserts	Does ZCTA intersect a food desert?	Yes/No
Modified Retail Food Environment Index	ZCTA Rate	Less than
Health Professional Shortage Area: Dental	Does ZCTA intersect shortage area?	Yes/No
Health Professional Shortage Area: Mental Health	Does ZCTA intersect shortage area?	Yes/No
Health Professional Shortage Area: Primary Care	Does ZCTA intersect shortage area?	Yes/No
Major Crime Rate	Crime rate of jurisdiction associated with ZCTA by Amador County	Greater than

Indicator	ZCTA Measure for PHN Identification	Benchmark Comparison
Park Access	ZCTA Rate	Less than
Pollution Burden	Does the ZCTA intersect Census tract with pollution burden score in the top 20% of the state?	Yes/No
Population Living Near a Transit Stop	Does the ZCTA intersect a Census block group for which the population weighted centroid distance to the closest public transit stop was 805 meters (approx. 1/2 mile) or more?	Yes/No
Median Income	ZCTA Rate	Less than
Percent Unemployed	ZCTA Rate	Greater than
Percent Uninsured	ZCTA Rate	Greater than
Percent Vacant Housing Units	ZCTA Rate	Less than
Percent Renter-Occupied Housing Units	ZCTA Rate	Greater than
Percent with Income Less Then Federal Poverty Level	ZCTA Rate	Greater than
Percent 25 or Older Without a High School Diploma	ZCTA Rate	Greater than
Percent Households with No Vehicle	ZCTA Rate	Greater than
Percent with Public Assistance	ZCTA Rate	Greater than
Average Population per Housing Unit	ZCTA Rate	Greater than

Two standards were then developed to determine whether an indicator would be considered as performing poorly across the Communities of Concern as a whole. An indicator could be considered as performing poorly if it had problematic values in any of the Communities of Concern or if the indicator had problematic values in at least 75% of the Communities of Concern.

Once identified using one of these two standards, poorly performing indicators were used to determine which PHNs were considered significant. While all PHNs represent actual health needs within the HSA to a greater or lesser extent, a PHN could be considered a Preliminary Secondary Health Need based on four criteria: any poorly performing associated HF/HO indicator; at least 50% of the associated HF/HO indicators were found to perform poorly; at least 66% of the associated HF/HO indicators were found to perform poorly; or at least 75% of the associated HF/HO indicators were found to perform poorly.

A similar set of standards were used to identify the Preliminary Primary Health Needs: at least 50% of the primary data sources mentioned a given PHN; at least 66% of primary data sources mentioned a given PHN; or at least 75% of primary data sources mentioned a given PHN. Allowances were also made for the possibility of a previously unrecognized health need to emerge through qualitative primary data collection. If a health need that did not fit within the previously identified PHNs was found, it was added to the list, and primary data sources were coded to count the percentage of sources mentioning that emergent health need.

These sets of criteria (any mention, 50%, 66%, 75%) were developed for both the primary and secondary analysis because we could not anticipate which specific standard would be most meaningful within the context of the HSA. Having multiple objective decision criteria allows the process to be more easily described, but still allows for enough flexibility to respond to evolving conditions in the HSA. To this end, a final round of expert review was used to compare the set of primary and secondary SHN selection criteria to find the level at which the criteria converged towards a final set of SHNs. Once the

final criteria used to identify the SHN were selected for both primary and secondary analyses, any health PHN included in either the Preliminary Primary or Secondary PHN list was included as a final Significant Health Need for the HSA.
For this report, any indicator with undesirable rates in any of the Communities of Concern was identified as poor performing. A PHN was selected as a Preliminary Secondary Significant Health need if at least 50% of the associated indicators were identified as performing poorly for that health need. A PHN was identified as a Preliminary Primary Significant Health Needs if it was mentioned by at least 50% or more of the sources as performing poorly.

Significant Health Need Prioritization
Once identified for the HSA, the final set of SHNs could be prioritized. To reflect the voice of the community, SHNs were prioritized using an analysis of the primary qualitative data, based on two approaches to quantifying the primary data: the percent of all primary data sources that referenced the SHN, and the average number of times the SHN was referenced across all data sources. These measures were developed for each SHN using NVIVO 10 Qualitative Analytical Software.

These SHN measures were next rescaled so that the SHN with the maximum value for each measure equaled 1, and all other SHNs had values appropriately proportional to the maximum value. The rescaled values were then summed to create a combined SHN prioritization index. Finally, SHNs were ranked in descending order so that the SHN with the highest prioritization index value was identified as the highest priority health need, the SHN with the second highest prioritization value was identified as the second highest priority health need, and so on.

Resource Identification Process
The following process was followed in identifying resources and cataloging them for inclusion in the final CHNA report:
1. A search was conducted to identify all resources that meet the federal definition of a resource within the hospital service area, as designated by a set of ZCTA/ZIP codes using the following stages:
    a. Include all resources identified in the 2013 CHNA report.
    b. Conduct internet searches for additional resources.
    c. Use existing area resource guides and directories where available.
    d. Review qualitative data from key informant interviews and focus groups for additional resources not identified elsewhere.
2. After compiling the initial list, verify that each organization or program still exists using the following approaches:
    a. Internet searches.
    b. Phone verification if needed.

Appendix C: Informed Consent

Purpose
You have been invited to participate in a community health needs assessment. This assessment helps to inform area hospitals about the needs of the communities they serve. Our Community Health Insights team will focus all questions on two basic topics: 1) the health of the community, and 2) the aspects of the community which help or prevent the community from being healthy. The information gathered will be combined with that of other interviews and focus groups. Our team will summarize these findings and report these to local area hospital representatives of non-profit healthcare systems.

Procedures
The focus group discussion will attempt to capture your understanding and opinions about community health issues. Completion of the discussion will take approximately 90 minutes. Our team is requesting to record the discussion so that we can later transcribe the session. All identifying information will be removed from the interview transcript, and at the completion of the project both the tape and transcript will be destroyed.

Potential Risks or Benefits
Some of the interview questions may be emotionally charged; otherwise there are no other known risks to answering the questions presented. Each participant will receive a gift card valued at $10.00. In addition, your participation helps to inform community benefit efforts for your local non-profit hospital.

Participants' Rights
Participation in this discussion is completely voluntary; you may choose not to participate and terminate your involvement at any time you wish. However, participants who do not complete the entire discussion will not receive the $10.00 gift card.

Confidentiality
If you agree 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. If a direct quote from your interview is used in the final report, a non-identifying coding system will be used.

How to Obtain Additional Information
If you have any questions or comments regarding this document, interview, or final report, please contact: Dale Ainsworth, Project Consultant, at dale@communityhealthinsights.com or Heather Diaz, Project Consultant, at heather@communityhealthinsights.com

_____   _____

Participant Print and   Sign   Date

_____   _____

Interviewer Print and   Sign   Date

<u>Key Informant Interview Guide</u>

1) Please tell me about your current role and the organization you work for?
    a) Probe for:
        i) Public health (division or unit)
        ii) Hospital health system
    b) How would you define the community (ies) you serve?
        i) Probe for:
            (1) Specific geographic areas?
            (2) Specific populations served?
                (a) (Who? Where? Racial/ethnic make-up, physical environment (urban/ rural, large/small)
2) Describe the health of the community you serve.
    a) What are the specific health issues the community struggles with the most?
    b) Probe for:
        i) What specific locations struggle with health issues the most?
        ii) What specific groups in the community experience health issues the most?
    c) Which would you say are the most important or urgent health issues to address?
3) What are the challenges to being healthy for the community?
    a) Probe for:
        i) Health care access
        ii) Built environment
        iii) Food access
        iv) Social stressors
    b) What is contributing to the challenges you described in question 3?
4) What resources exist in the community to help people live healthy lives?
    a) Probe for:
        i) Barriers to accessing these resources.
5) What would you say has been the impact of the Affordable Care Act [may also be known as [Covered California, Obamacare, Medi-Cal, universal healthcare] on the community you serve?
6) What is needed to improve the health of your community?
    a) Probe for:
        i) Policies
        ii) Care coordination
        iii) Access to care
        iv) Environmental change
    b) Of those items you listed in question 7 above, which would you say is the most significant improvement needed? Which is second most significant? Third? and so on?
7) What other people, groups or organizations would you recommend we speak to about the health of the community?
    a) Probe for:
        i) Exact names or people and organizations
        ii) Special populations mentioned
8) Is there anything else you would like to share with our team about the health of your community?

1) Please tell me about the community that you live in?
    i) Probe for:
        (1) Specific geographic areas?
        (2) Specific populations that live there?
            (a) How would you describe the people that live there?
            (b) How would you describe the physical layout of the land?
2) Describe the health of the community that you live in?
    a) What are the specific health issues your community struggles with the most?
    b) Probe for:
        i) What specific locations struggle with health issues the most?
        ii) What specific groups in the community experience health issues the most?
    c) Which would you say are the most important or urgent health issues to address in your community?
3) What are the challenges to being healthy in the community that you live in?
    a) Probe for:
        i) Health care access
        ii) Built environment
        iii) Food access
        iv) Social stressors
    b) What is contributing to the challenges you just described?
4) What resources exist in the community to help people live healthy lives?
    a) Probe for:
        i) Barriers to accessing these resources.
5) What would you say has been the impact of the Affordable Care Act [may also be known as [Covered California, Obamacare, Medi-Cal, universal healthcare] on you or your community?
6) What is needed to improve the health of the community you live in?
    a) Probe for:
        i) Policies
        ii) Care coordination
        iii) Access to care
        iv) Environmental change
    b) Of those items you listed above, which would you say is the most significant improvement needed for your community? Which is second most significant? Third? And so on?
7) What other people, groups or organizations would you recommend we speak to about the health of your community?
    a) Probe for:
        i) Exact names or people and organizations
        ii) Special populations mentioned
8) Is there anything else you would like to share with our team about the health of your community?

Appendix E: Project Summary Sheet

Project Overview

Following both state and federal mandates, nonprofit hospitals conduct community health needs assessments (CHNA) every three years. These assessments identify and prioritize the significant health needs of the communities they serve. Based on the results nonprofit hospitals develop community health improvement or implementation plans to address particular, significant health needs.

Sutter Amador Hospital has contracted with Community Health Insights (www.communityhealthinsights.com) to conduct the CHNAs. Community Health Insights is a Sacramento based research-oriented consulting firm dedicated to improving the health and wellbeing of communities across Northern California.

Project Objective

The objective of the 2016 CHNA is to identify and prioritize community health needs—defined as the basic provisions and conditions needed for the improvement and/or maintenance of health—within each hospital's service area (HSA). In particular health needs within neighborhoods and/or populations in the service area experiencing health disparities will be highlighted.

Project Deliverables

The final deliverable of this project will be a written report detailing the CHNA of each individual hospital service area. The report will be posted on each affiliated hospital's website. Comments by community members on the content of the CHNA are welcomed by each affiliated hospital.

Project Timeline

The CHNA will start in May 2015 and be completed by March 2016.

Project Contact

If you are interested in commenting on or participating in the CHNA in any way, please direct all inquiries to

Heather Diaz, DrPH, MPH
Managing Partner, Community Health Insights
916-799-9554
heather@communityhealthinsights.com

Appendix F: List of Key Informants

Type	Organization (s)	Number of Participants	Area of Expertise	Populations Served	Date
Veteran Service Providers	- Victory Village (2 participants) - Calaveras County Public Health - Retired Veteran Service Provider - Retired physician - County Board of Supervisor - Project Thank You - Amador/Calaveras Counties Service Officer	8	Veteran health issues and services; homelessness	Veterans; homelessness	7.30.15
Public Health	- Amador Public Health Department	1	Public health	All residents of Amador County	8.5.15
Families and Children Providers	- Amador County Public Health Educator (3 participants) - Resource and Referral Supervisor; Grandparent Project Coordinator - CA Tribal TANF Partnership - Nexus Youth and Family Services - Hospice of Amador/Calaveras Counties - First 5 Amador (2 participants) - First 5 Amador – Dad and Me - Amador – Tuolumne Community Partnership - Amador County Sheriff's Department	12	Health and social issues related to families and children.	Families of Amador, Calaveras, and Tuolumne Counties; children; caregivers; low income populations; Latino families	8.5.15
Clinical Health Providers	- Sutter Primary Care physician - Fiddletown/Pioneer health practitioner - Amador Public Health Department - Sutter Rural Health Center - Retired local OB/GYN - Calaveras County Department of Public Health - Sutter Amador Administrator	7	Local area clinical health providers	All residents of Amador and Calaveras Counties	8.5.15
Food Bank	- Interfaith Food Bank	1	Food Access Specialists	Low income families of Amador County	12.3.15
Faith Community	- Interfaith Taskforce	1	Faith Pastor	Faith Community; All members of Amador County	12.4.15

Type	Organization (s)	Number of Participants	Area of Expertise	Populations Served	Date
Uptown/Ione Community Center	- Family Resource Center Managers (2 participants)	2	Low income families with children	Residents of Upcountry/Ione areas; low income, Latino residents, families	12.11.15
Mental Health Providers	- National Alliance for Mental Illness (3 participants)	3	Mental health providers and advocates	All residents of Amador county; Community members with mental health issues	3.8.15

Appendix G: List of Focus Groups

Location	Date	Number of Participants	Demographic Information
Victory Village	12.4.15	8	Homeless Veterans
Upcountry Community Center	3.2.16	15	Parents and community members
Ione Community Center	3.8.16	2	Community members

Appendix H: Resources Potentially Available to Meet Identified Health Needs

Organization Information				Health Need Potentially Met by Organization (x)										
Name (*added 2016 CHNA)	Zip Code	Key Words	Website	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to transportation and mobility	4. Access to basic needs, such as housing and employment	5. Access to specialty care	6. Access to health education	7. Access to affordable, healthy food	8. Access to dental care and prevention	9. Safe and violence free environment	10. Pollution-free living environment
Amador Child Abuse Prevention Council	95642	Mandated Child Abuse & Neglect Reporter Training, Shaken Baby Syndrome Prevention Workshops, Internet Safety Presentations for kids, teens, and adults	http://www.first5amador.com/accapc.html	X								X	
Amador Child Care Council	95642	Support to the local child care provider association, Mini-grants to family and center-based child care providers	http://www.first5amador.com/childcare.html				X		X				

Organization Information				Health Need Potentially Met by Organization (x)									
Name (*added 2016 CHNA)	Zip Code	Key Words	Website	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to transportation and mobility	4. Access to basic needs, such as housing and employment	5. Access to specialty care	6. Access to health education	7. Access to affordable, healthy food	8. Access to dental care and prevention	9. Safe and violence free environment	10. Pollution-free living environment
Amador County Recreation Agency*	95685	Provide recreational opportunities for all Amador County residents	http://www.amadorcountyrecreationagency.org/									x	x
Amador County Smile Keepers Program	95642	Provide essential basic dental care to young children, training of staff in oral health education and data collection	http://www.first5amador.com/pastprojects.html http://www.first5amador.com/Page_7.pdf						x		x		
Amador RIDES*	95642	Transportation to healthcare care services	http://amadortransit.com/amador-rides/			x							

Organization Information				Health Need Potentially Met by Organization (x)									
Name (*added 2016 CHNA)	Zip Code	Key Words	Website	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to transportation and mobility	4. Access to basic needs, such as housing and employment	5. Access to specialty care	6. Access to health education	7. Access to affordable, healthy food	8. Access to dental care and prevention	9. Safe and violence free environment	10. Pollution-free living environment
Amador STARS*	95642	Cancer Support, transportation and resource services	http://www.amadorstars.org/			x		x					
Amador-Tuolumne Community Action Agency (A-TCAA)	95642	Early childhood services. Family learning and support, food bank, housing resources, assistance programs	http://atcaa.org/				x		x				
A-TCAA Early Head Start/Head Start/State Preschool	95642	Early childhood services. Family learning and support, food bank, housing resources, assistance programs	http://atcaa.org/atcaa-programs/early-childhood-services/				x		x				

Organization Information				Health Need Potentially Met by Organization (x)									
Name (*added 2016 CHNA)	Zip Code	Key Words	Website	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to transportation and mobility	4. Access to basic needs, such as housing and employment	5. Access to specialty care	6. Access to health education	7. Access to affordable, healthy food	8. Access to dental care and prevention	9. Safe and violence free environment	10. Pollution-free living environment
Camanche Lake Community Center	95640	Emergency food distribution, tutoring, Info net Neighborhood Information Center, Health Resource Library	http://www.first5amador.com/camanche.html				x			x			
Church of the Nazarene*	95685	Church, Addiction recovery services, family support programs	http://www.scnaz.org/	x			x						
First 5 Amador	95642	Parent and caregiver education and support for years 0-5	http://www.ccfc.ca.gov/				x		x				

Organization Information				Health Need Potentially Met by Organization (x)									
Name (*added 2016 CHNA)	Zip Code	Key Words	Website	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to transportation and mobility	4. Access to basic needs, such as housing and employment	5. Access to specialty care	6. Access to health education	7. Access to affordable, healthy food	8. Access to dental care and prevention	9. Safe and violence free environment	10. Pollution-free living environment
Hospice of Amador and Calaveras Counties -- Grief Busters*	95642	Bereavement support program	http://www.hospiceofamador.org/images/PDFs/GriefbusterBrochure.pdf	x			x						
Interfaith Food Bank	95642	Food insecurity, food distribution, low income	http://www.feedamador.org/site/pages/contactus.cgi				x		x	x			
Ione Community Methodist Church	95640	Ministry with the Poor, Improving Global Health	http://www.umc.org/how-we-serve/four-areas-of-focus-overview	x			x						
Ione Family Learning Center	95642	English language instruction, G.E.D. preparation, citizenship classes, job skills, parenting, early childhood	http://atcaa.org/atcaa-programs/ione-family-learning-center/				x		x				

Name (*added 2016 CHNA)	Zip Code	Key Words	Website	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to transportation and mobility	4. Access to basic needs, such as housing and employment	5. Access to specialty care	6. Access to health education	7. Access to affordable, healthy food	8. Access to dental care and prevention	9. Safe and violence free environment	10. Pollution-free living environment
		education and interactive literacy activities in Ione.											
MACT Clinic	95642	Public health services, primary and prevention services	http://www.macthealth.org/	x	x								
MACT Dental Clinic	95642	Dental care services. Patient education	http://freeclinicdirectory.org/detail/mact_dental_jackson_jackson_ca.html								x		
Nexus Youth and Family Services -- Family Resource Center Upcountry	95665	Parent and caregiver education and support for years 0-5	http://www.first5amador.com/frc.html				x		x				
Nexus Youth and Family Services -- Family Resource Center Ione	95640	Parent and caregiver education and support for years 0-5	http://atcaa.org/atcaa-programs/ione-family-learning-center/				X		X				

Organization Information				Health Need Potentially Met by Organization (x)									
Name (*added 2016 CHNA)	Zip Code	Key Words	Website	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to transportation and mobility	4. Access to basic needs, such as housing and employment	5. Access to specialty care	6. Access to health education	7. Access to affordable, healthy food	8. Access to dental care and prevention	9. Safe and violence free environment	10. Pollution-free living environment
Operation Care	95642	Domestic violence and sexual assault support services, crisis intervention and education	http://operationcare.org/				X		X			X	
Senior Meals/Common Ground	95642	Provide home bound older adults with social connection and health foods.	http://www.commongroundseniorservices.com/							X			
Sierra Hope*	95222	STD, HIV prevention and education.	http://www.sierrahope.org/						X				
Sierra Wellness and Recovery Center	95642	Peer support, companionship support groups,	http://amador.networkofcare.org/mh/services/agency.aspx?pid=SierraWi	X			X		X	X			

Name (*added 2016 CHNA)	Zip Code	Key Words	Website	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to transportation and mobility	4. Access to basic needs, such as housing and employment	5. Access to specialty care	6. Access to health education	7. Access to affordable, healthy food	8. Access to dental care and prevention	9. Safe and violence free environment	10. Pollution-free living environment
		resources, meals and linkage to resources. Services provided by peer staff with lived experience.	ndWellnessRecoveryCenterMentalHealthAmericaOfNorthernCA_166_2_0 http://www.ledger-dispatch.com/directory/sierra-wind-wellness-recovery-center										
Society of St. Vincent de Paul*	95689	Financial assistance	http://www.scnaz.org/				X						
Sutter Amador Hospital	95642	Area hospital	http://www.sutteramador.org/	X	X		X		X				

Organization Information				Health Need Potentially Met by Organization (x)									
Name (*added 2016 CHNA)	Zip Code	Key Words	Website	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to transportation and mobility	4. Access to basic needs, such as housing and employment	5. Access to specialty care	6. Access to health education	7. Access to affordable, healthy food	8. Access to dental care and prevention	9. Safe and violence free environment	10. Pollution-free living environment
UC Cooperative Extension	95616	Community education programs: 4-H, master gardener	http://ucanr.edu/				X						
Victory Village	95642	Promotes veterans' rights, issues, and access to services and benefits	http://victoryvillageamador.org/ssvf http://www.co.amador.ca.us/services/veterans-services	X			X		X				
Women Infants and Children -- The Resource Connection*	95685	Provides nutrition and education programs for low-income pregnant women and mothers of infants and toddlers (birth to 5) throughout Amador and	http://www.trcac.org/programs/wic				X		X	X			

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Organization Information				Health Need Potentially Met by Organization (x)									
Name (*added 2016 CHNA)	Zip Code	Key Words	Website	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to transportation and mobility	4. Access to basic needs, such as housing and employment	5. Access to specialty care	6. Access to health education	7. Access to affordable, healthy food	8. Access to dental care and prevention	9. Safe and violence free environment	10. Pollution-free living environment
		Calaveras counties.											