

Marshall Medical Center

2016 Community Health Needs Assessment

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Acknowledgements

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

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Table of Contents

EXECUTIVE SUMMARY	8
ASSESSMENT PURPOSE AND ORGANIZATIONAL COMMITMENT.....	12
Purpose for the Community Health Needs Assessment (CHNA).....	12
Mission, Values, and Principles.....	12
About Marshall Medical Center.....	13
Organization of the Report.....	13
DEFINITION OF COMMUNITY SERVED	14
Community Definition.....	14
Demographics of the Hospital Service Area (HSA)	14
Community Health Vulnerability Index and Focus Communities.....	17
ASSESSMENT PROCESSES AND METHODS	21
Process Overview.....	21
Secondary Data Collection – Processing and Analyzing.....	23
Primary Data Collection	24
Information Gaps/Limitations.....	26
Consultants Used to Help Conduct the CHNA.....	27
ASSESSMENT DATA AND FINDINGS.....	28
Mortality and Morbidity in the Marshall HSA	28
Overall Health Status – Rates of Age-Adjusted All-Cause Mortality, Infant Mortality and Life Expectancy at Birth.....	28
Chronic Diseases – Diabetes, Heart Disease, Stroke, Hypertension and Kidney Disease.....	30
Cancer – Incidence, ED Visit, Hospitalization, Mortality and Screening Rates by Specific Cause of Cancer	35
Respiratory Health – Chronic Obstructive Pulmonary Disease (COPD), Asthma, and Tuberculosis	39
Mental Health.....	42
Dental Health	46
Injury – Intentional (Suicide and Self- inflicted injury) and Unintentional.....	47
Risk Behaviors and Living Conditions in the Marshall HSA	49
Risk Behaviors – Substance Abuse, Poor Nutrition, Physical Inactivity, and Risky Sexual Behavior	49
Risky Sexual Behavior -- Teen Birth Rate and Sexually Transmitted Infections (Chlamydia, Gonorrhea, and HIV/AIDS).....	60
Living Conditions – Physical Environment, Social Environment, Economic/Work Environment and Service Environment.....	63
PRIORITIZED DESCRIPTION OF SIGNIFICANT COMMUNITY HEALTH NEEDS	88

Process and Methods for Prioritizing Significant Health Needs.....	88
Potential Health Need (PHN) Categories.....	88
Quantitative/Qualitative Analysis on PHN Categories	88
Thresholds for Significant Health Needs (SHNs).....	88
Prioritized Significant Health Need Identification Process.....	89
Prioritized Significant Health Needs for Marshall Medical Center	89
RESOURCES POTENTIALLY AVAILABLE TO MEET SIGNIFICANT HEALTH NEEDS	96
IMPACT OF ACTIONS TAKEN SINCE PREVIOUS CHNA	97
CONCLUSION.....	99
APPENDICES	100
Appendix A: Secondary Data Dictionary and Processing	100
Appendix B: Detailed Analytic Methodology including SHN Categorization.....	126
Appendix C: Informed Consent	138
Appendix D: Key Informant and Focus Group Interview Documents	141
Appendix E: List of Key Informants.....	152
Appendix F: List of Focus Groups.....	153
Appendix G: Resources Potentially Available to Meet Identified Health Needs	154

List of Tables

Table 1: Census Population Counts, Median Age, and Median Income for the Marshall HSA, Compared to El Dorado County and the State.....	15
Table 2: Percent Living Below 100% Federal Poverty Level, Percent Uninsured and Percent Minority for the Marshall HSA, Compared to the County and State	16
Table 3: Indicators Included in the CHVI.....	18
Table 4: Social Inequities Indicators to Determine Focus Communities.....	19
Table 5: Four Identified Focus Communities for the Marshall HSA.....	20
Table 6: Overall Health Status Indicators: Age-Adjusted All-Cause Mortality, Infant Mortality, and Life Expectancy at Birth.....	29
Table 7: Mortality, ED Visit, and Hospitalization Rates for Diabetes Compared to County, State, and Healthy People 2020 Benchmarks (Rates per 10,000 Population)	30
Table 8: Mortality, ED Visit and Hospitalization Rates for Heart Disease Compared to County, State, and Healthy People 2020 Benchmarks (Rates per 10,000 Population)	32
Table 9: Mortality, ED Visit and Hospitalization Rates for Stroke Compared to County, State, and Healthy People 2020 Benchmarks (Rates per 10,000 Population)	33
Table 10: Mortality, ED Visit and Hospitalization Rates for Hypertension Compared to County and State	34
Table 11: Mortality, ED Visit and Hospitalization Rates for Kidney Disease Compared to County and State Benchmarks (Rates per 10,000 Population).....	35
Table 12: Cancer Incidence (New Cases) for Female Breast Cancer, Colorectal Cancer, Lung Cancer and Prostate Cancer (Rates per 10,000 Population)	36
Table 13: Mortality Rates for All-Cause Cancer, and ED Visits and Hospitalization Rates for Lung Cancer Compared to County, State, and Healthy People 2020 Benchmarks (Rates per 10,000 Population)	37
Table 14: Rates of ED Visits and Hospitalizations for Female Breast Cancer, Colorectal Cancer, and Prostate Cancer (Rates per 10,000 Population)	38
Table 15: Mortality Rates due to Chronic Lower Respiratory Disease, ED Visits and Hospitalization Rates due to COPD Compared to County, State, and Healthy People 2020 Benchmarks (Rates per 10,000 Population).....	40
Table 16: ED Visit and Hospitalization Rates due to Asthma Compared to County and State Benchmarks (Rates per 10,000 Population).....	41
Table 17: ED Visit and Hospitalization Rates due to Tuberculosis Compared to County and State Benchmarks (Rates per 10,000 Population).....	42
Table 18: ED Visit and Hospitalization Rates due to Mental Health Issues Compared to County and State Benchmarks (Rates per 10,000 Population).....	43
Table 19: ED Visit and Hospitalization Rates due to Dental Issues Compared to County and State Benchmarks (Rates per 10,000 Population).....	46
Table 20: Mortality Rates due to Suicide and ED Visits and Hospitalization Rates due to Self-Inflicted Injury Compared to County, State, and Healthy People 2020 Benchmarks (Rates per 10,000 Population)	47
Table 21: Mortality, ED Visit and Hospitalization Rates due to Unintentional Injury Compared to County and State Benchmarks (Rates per 10,000 Population).....	48
Table 22: ED Visit and Hospitalization Rates due to Substance Abuse Compared to County and State Benchmarks (Rates per 10,000 Population).....	50
Table 23: Percent Overweight and Obese in Youth Grades 5th, 7th and 9th as Measured by the FitnessGram	52

Table 24: Chlamydia and Gonorrhea (New Cases) Compared to County and State Benchmarks (Rates per 10,000 Population).....	61
Table 25: ED Visit and Hospitalization Rates due to STIs and HIV/AIDS Compared to County and State Benchmarks (Rates per 10,000 Population).....	62
Table 26: Housing Vacancy, People Living per Housing Unit, and Percent of Population Renting by ZIP Code.....	68
Table 27: Major Crime, Violent Crime, Property Crime, Arson and Domestic Violence per 10,000 Population by Police Jurisdiction.....	73
Table 28: Percent Unemployed and Median Income by ZIP Code	77
Table 29: Percent Population Living in Poverty, Percent Families with Children in Poverty, Percent Single FHH in Poverty, and Percent Elderly Households in Poverty	78
Table 30: Percent of Live Births with the Mother Receiving Prenatal Care in the First Trimester and Percent of Births with Low Birth Weight	82
Table 31: Prioritization of Significant Health Needs with Data Scoring and Ranked by Importance.....	89
Table 32: Number of Resources for Each Significant Health Need in Prioritized Order	96
Table 33: Demographic Variables Collected from the US Census Bureau ³⁰	102
Table 34: Census Variables Used for Mortality and Morbidity Rate Calculations ^{3, 30}	107
Table 35: 2011 – 2013 OSHPD Hospitalization and Emergency Department Discharge Data.....	109
Table 36: CDPH Birth and Mortality Data by ZIP Code.....	110
Table 37: Remaining Secondary Variables.....	111
Table 38: Potential Health Needs.....	126
Table 39: Indicators, Health Needs, and Benchmarks	127
Table 40: Qualitative Indicators Associated with Potential Health Needs	134

List of Figures

Figure 1: Marshall Hospital Service Area.....	14
Figure 2: Population Demographics for Marshall HSA for Race/Ethnicity	17
Figure 3: Community Health Vulnerability Index for Marshall HSA	18
Figure 4: Focus Communities for the Marshall HSA	20
Figure 5: CHNA Process Model	22
Figure 6: Bay Area Regional Health Inequities Initiative (BARHII) Model ¹	23
Figure 7: Focus Group Participant Demographics	26
Figure 8: Screening Rates in Adults for Mammograms, Pap Test and Sigmoidoscopy/Colonoscopy	39
Figure 9: Alzheimer's Disease Mortality Rate	45
Figure 10: USDA Defined Food Deserts	54
Figure 11: Percent Food Insecure and Percent Receiving SNAP	55
Figure 12: Modified Retail Food Environment Index (mRFEI)	56
Figure 13: Fast Food Restaurants and Grocery Stores per 100,000 Population	57
Figure 14: Percent of Population by ZIP Code that Live within One-Half Mile of a Park.....	59
Figure 15: Teen Birth Rate for 15-19 Year-Olds per 1,000 Live Births.....	60
Figure 16: Percent Households with No Vehicle.....	64
Figure 17: Percent Workers with Commutes of 1+ Hour	65
Figure 18: Percent of Workers Commuting to Work Alone and Walking or Biking to Work	66
Figure 19: Rate of Fatal Accidents Overall and Involving a Pedestrian.....	67
Figure 20: Percent of Residents by ZIP Code with Housing Costs above 30% of their Household with a Mortgage Payment	70
Figure 21: Percent of Residents by ZIP Code with Housing Rental Costs above 30% of their Household Income	71
Figure 22: Pollution Burden Score by Census Tracts in the Marshall HSA	72
Figure 23: ED Visits Related to Assault	75
Figure 24: Hospitalizations Related to Assault.....	76
Figure 25: Percent Uninsured by ZIP Code in the Marshall HSA	79
Figure 26: Primary Care HPSA in the Marshall HSA	81
Figure 27: Percent over 25 Years Old with No High School Diploma.....	84
Figure 28: Percent of Population on Public Health Insurance	86
Figure 29: Percent of Population Receiving Public Assistance	87

EXECUTIVE SUMMARY

Community Health Needs Assessment (CHNA) Background/Purpose Statement

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

This report documents the processes, methods, and findings of the CHNA conducted in partnership with Marshall Medical Center, located at 1100 Marshall Way, Placerville, CA 95667. Building on federal and state requirements, the objective of the 2016 CHNA was:

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

Community Definition

The Marshall Medical Center hospital service area (HSA) is comprised of 17 ZIP codes in El Dorado, County, California. The community or hospital service area (HSA) is defined as the geographic area (by ZIP code) in which the hospital receives its top 80% of discharges.

Assessment Process and Methods

The CHNA was completed as a collaboration of the four major health systems in the Greater Sacramento region: Dignity Health, Kaiser Permanente, Sutter Health and UC Davis Health System. Together, the CHNA Collaborative represented 16 hospitals in the Sacramento Region, including Marshall Medical Center. The CHNA Collaborative project was conducted over a period of eighteen months, beginning in January 2015 and concluding in June 2016. Marshall Medical Center interacted with the Sacramento CHNA Collaborative through data sharing and methodology.

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

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

To meet the project objectives, a defined set of data collection and analytic stages were developed. Data collected and analyzed included both primary or qualitative data, and secondary or quantitative data. To determine geographic locations affected by social inequities, data were compiled and analyzed at the

census tract and ZIP code levels as well as mapped by GIS systems. From this analysis as well as an initial preview of the primary data, Focus Communities were identified within the HSA. These were defined as geographic areas (ZIP codes) within the HSA that had the greatest concentration of social inequities that may result in poor health outcomes. Focus Communities were important to the overall CHNA methodology because they allowed for a place-based lens with which to consider health disparities in the HSA.

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

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

[Process and Criteria to Identify and Prioritize Significant Health Needs](#)

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

List of Prioritized Significant Health Needs

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

1. Access to Behavioral Health Services

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

2. Safe, Crime and Violence Free Communities

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

3. Active Living and Healthy Eating

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

4. Disease Prevention and Management

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

5. Affordable and Accessible Transportation

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

6. Access to High Quality Health Care and Services

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

7. Basic Needs (Food Security, Housing, Economic Security, Education)

This category encompasses economic security (income, employment and benefits), food security/insecurity, housing (affordable housing, substandard housing), education (reading proficiency, high school graduation rates) and homelessness.

8. Pollution-Free Living and Work Environments

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

Resources Available

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

Through this process, 62 resources were identified pertaining to the significant health needs for Marshall Medical Center, located at 1100 Marshall Way, Placerville, CA 95667. The final list of health resources is available in Appendix G.

Report Adoption, Availability, and Comments

This CHNA was adopted by the Marshall Medical Center Community Board in July, 2016.

This report was widely available to the public on the hospitals web site, and a paper copy is available for inspection upon request at Marshall Medical Center Marketing Department, 3581 Marshall Way, Ste. 101, Cameron Park, CA.

Written comments on this report can be submitted by email to ledralin@marshallmedical.org

ASSESSMENT PURPOSE AND ORGANIZATIONAL COMMITMENT

Purpose for the Community Health Needs Assessment (CHNA)

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

This report documents the processes, methods, and findings of the CHNA conducted in partnership with Marshall Medical Center (Marshall), located at 1100 Marshall Way, Placerville, CA 95667. Building on federal and state requirements, the objective of the 2016 CHNA was:

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

Mission, Values, and Principles

Mission Statement

Marshall Medical Center proudly serves the Western slope of El Dorado County. Our mission is to improve the health of our community and offer health services of superior value and quality, centered on the goals and needs of our patients. We strive to deliver service that exceeds our patients' expectations.

Values and Principles

We at Marshall have dedicated our lives to healing, the prevention of illness and the promotion of wellness, working with chronically ill patients to help them live optimally within the limits of their condition. The Marshall community -- employees, medical staff, volunteers, and leadership -- embrace the following values and principles:

Our patients come first. All other values are overshadowed by the proper care of those who entrust their lives to us. We embrace the diversity of our community and it is our privilege to partner with our patients in their health and to treat them with respect and compassion.

Healing is an art. Medicine flourishes best in a healing environment. Our patients and their families are an essential part of the health care team. We empower them through our support, our example and our teaching. We recognize each patient is an individual and we adapt care to their personal needs. To enrich our healing environment, members of the Marshall community treat each other with the same respect we hold for our patients.

Medicine is a science. Clinical care provided at Marshall is based on the application of nationally recognized best practices. We strive for continued improvement in all aspects of patient care, pursuing growth in our collective expertise. Excellence in prevention, diagnosis and treatment of disease are defined by documented clinical outcomes.

[Our organization is not defined by walls.](#) Our organization is defined by the doors we open. The community is best served by a continuum of care, wherever those services are needed, meeting patients wherever they are in the spectrum of health. We reach out to emphasize primary care, prevention, education, research and collaboration with other organizations when their missions complement our own.

[We bequeath Marshall to future generations.](#) Our community is best served by organizations that are locally owned and managed. To maintain our independence and meet the present and future needs of the community, we manage Marshall's finances carefully. We strive to provide the highest quality of care while maintaining exceptional value and unparalleled service.

About Marshall Medical Center

Marshall's History

In the late 1950s a group of local citizens saw a great need for improved healthcare services in El Dorado County. The citizens formed a committee to petition the state of California for a nonprofit charter under which a hospital could be built and operated. As a result of this, plans were drawn, funds were solicited, Michigan California lumber company donated land for a hospital site, and Marshall Hospital opened its doors in 1959. A group of dedicated employees worked hard to make the original 49 bed hospital a success. Marshall Medical Center derives its name from the pioneer James Marshall, who discovered gold at Sutter's Mill a few miles north of Placerville.

Marshall Facts

Marshall Medical Center is an independent, nonprofit community healthcare provider located in the heart of the Sierra Foothills between Sacramento and South Lake Tahoe. Marshall Medical Center includes Marshall Hospital, a fully accredited acute care facility with 113 beds (14 distinct patient skilled nursing beds) located in Placerville; including several outpatient facilities in Cameron Park, Placerville, El Dorado Hills and Georgetown; a group of primary care physicians known as Marshall Medical Clinic Services, a wide variety of specialists including cardiology, pulmonology, oncology, and rheumatology; and many community health and education programs. Marshall has more than 200 affiliated physicians and allied health providers, and a team of more than 1500 employees providing quality healthcare services to more than 180,000 residents of El Dorado County. Marshall annually provides outstanding healthcare services for 549 newborns, 299,108 outpatient visits and 37,910 emergency department visits, and has received numerous awards from Healthgrades, including Top 10% nationally for critical care and pulmonary care, and 5 Star status for cardiac care (heart attack and heart failure), stroke care, pneumonia and sepsis.

Organization of the Report

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

DEFINITION OF COMMUNITY SERVED

Community Definition

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

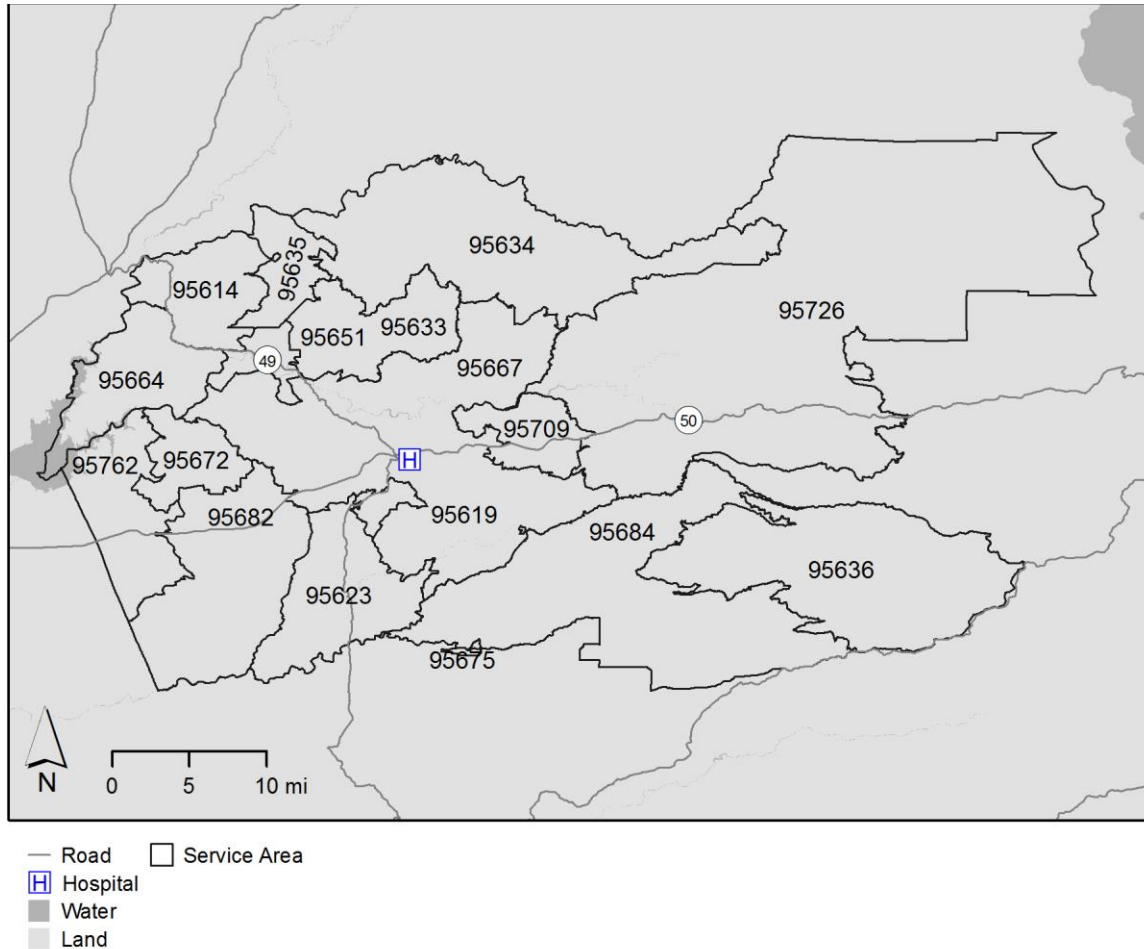


Figure 1: Marshall Hospital Service Area

Demographics of the Hospital Service Area (HSA)

The Marshall Medical Center (Marshall) Hospital Service Area (HSA) is located in Northern California and includes approximately 152,000 residents. As Tables 1 and 2 show, the area is considerably diverse in population, economic stability (income and poverty), and insurance status. Table 1 shows the total population count for each of the 17 ZIP codes within the Marshall HSA, the median age, and the median income compared to county and state benchmarks. Table 2 provides information on the presence of medically underserved, low income, and minority residents in the Marshall HSA.

Population Characteristics

Table 1: Census Population Counts, Median Age, and Median Income for the Marshall HSA, Compared to El Dorado County and the State

ZIP Code	Community/Area	Population	Median Age	Median Income
95614	Cool	4,341	41.1	\$92,721
95619	Diamond Springs	4,893	40.1	\$57,340
95623	Kingsville/Nashville	3,913	47.6	\$62,321
95633	Garden Valley	3,441	46.2	\$65,603
95634	Georgetown	3,080	48.2	\$56,528
95635 [†]	Greenwood	921	52.9	\$43,542
95636 [†]	Grizzly Flats	937	37.3	\$50,000
95651 [†]	Lotus	451	48.0	\$55,446
95664 [†]	Pilot Hill	1,095	47.6	\$89,141
95667	Placerville	35,924	48.9	\$57,468
95672	Rescue	5,273	49.0	\$93,209
95675 [†]	River Pines	405	30.7	\$32,470
95682	Shingle Springs/Cameron Park	29,590	43.7	\$77,718
95684	Somerset	3,069	50.9	\$53,148
95709	Camino/Apple Hill	4,942	50.5	\$68,628
95726	Pollock Pines	8,902	47.4	\$55,526
95762	El Dorado Hills	40,829	40.7	\$119,382
Marshall HSA		152,006	Range: 30.7 to 52.9 years	Range: \$32,470 to \$119,382
<i>El Dorado County</i>		<i>180,982</i>	<i>44.1 years</i>	<i>\$69,297</i>
<i>CA State</i>		<i>37,659,181</i>	<i>35.4 years</i>	<i>\$61,094</i>

[†]Indicates small population size

The population of El Dorado County makes up approximately 0.5% of all residents in the State of California. The population count of the Marshall HSA at the ZIP code level varied from 405 in ZIP code 95675 (River Pines) to 40,829 in ZIP code 95762 (El Dorado Hills). The median age of El Dorado County is higher than that of the state. Within the Marshall HSA, the ZIP code with the youngest median age was 95675 (River Pines) at 30.7 years, and the ZIP code with the eldest median age was 95635 (Greenwood) at 52.9 years. The median income for El Dorado County was above that of the state, at \$69,297. The ZIP code with the lowest median income was 95675 (River Pines) at \$32,470, and the ZIP code with the highest median income was 95762 (El Dorado Hills) at \$119,382, a range of over \$90,000. Please note, data from ZIP codes 95675 (River Pines) and 95635 (Greenwood) may be skewed due to small population size.

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

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

ZIP Code	Percent Below Federal Poverty Level (less than or equal to 100% FPL)	Percent Uninsured	Percent Minority (Hispanic or non-White)
95614	3.6%	5.6%	3.9%
95619	6.7%	11.7%	22.0%
95623	7.3%	12.1%	12.7%
95633	6.5%	16.3%	18.0%
95634	8.9%	14.2%	12.0%
95635 [†]	6.3%	27.0%	4.5%
95636 [†]	5.7%	11.0%	8.1%
95651 [†]	6.0%	0.4%	4.4%
95664 [†]	10.2%	4.8%	15.2%
95667	12.6%	10.0%	17.0%
95672	2.2%	6.4%	19.4%
95675 [†]	9.9%	16.5%	53.6%
95682	7.6%	7.1%	18.0%
95684	9.6%	11.8%	6.3%
95709	6.9%	9.5%	9.3%
95726	13.7%	11.8%	11.3%
95762	3.7%	5.1%	22.9%
Marshall HSA	7.8%	8.4%	17.5%
<i>El Dorado County</i>	9.0%	10.2%	20.3%
<i>CA State</i>	15.9%	17.8%	60.3%

Source: 2013 American Community Survey 5-year Estimates

[†]Indicates small population size

*Values in blue are those that fall above the desired direction in comparison to the county benchmark.

The percent of population living in poverty was substantially lower in El Dorado County in comparison to the state benchmark. The Marshall HSA ZIP code with the highest percent of population in poverty was 95726 (Pollock Pines) at 13.7%, compared to the lowest percent poverty in ZIP code 95672 (Rescue) at 2.2%. The percent of residents uninsured was lower in El Dorado County compared to the state benchmark. The ZIP code with the highest percent uninsured was 95635 (Greenwood) at 27.0%, and the lowest percent was 0.4% in ZIP code 95651 (Lotus). The percentage of minority residents was lower in El Dorado County compared to the state benchmark, with the highest percent seen in ZIP code 95675 (River Pines) at 53.6% and the lowest percent in 95614 (Cool) at 3.9%. Please note, data from ZIP codes 95675 (River Pines) and 95651 (Lotus) may be skewed due to small population size.

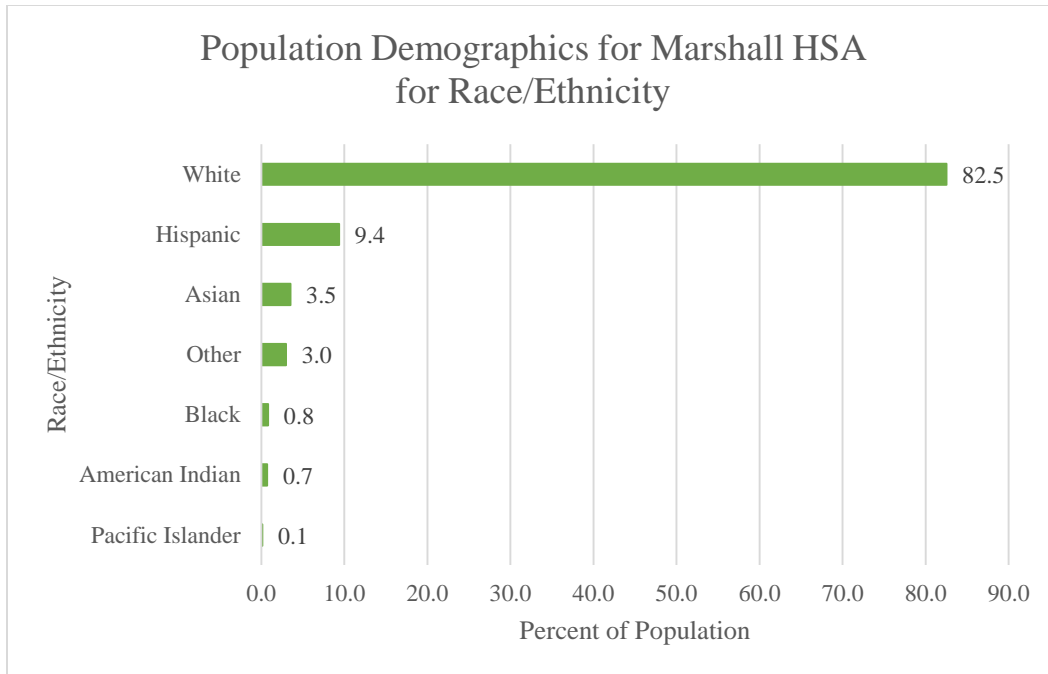


Figure 2: Population Demographics for Marshall HSA for Race/Ethnicity

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

Community Health Vulnerability Index and Focus Communities

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

Community Health Vulnerability Index – Overview

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

Table 3: Indicators Included in the CHVI

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

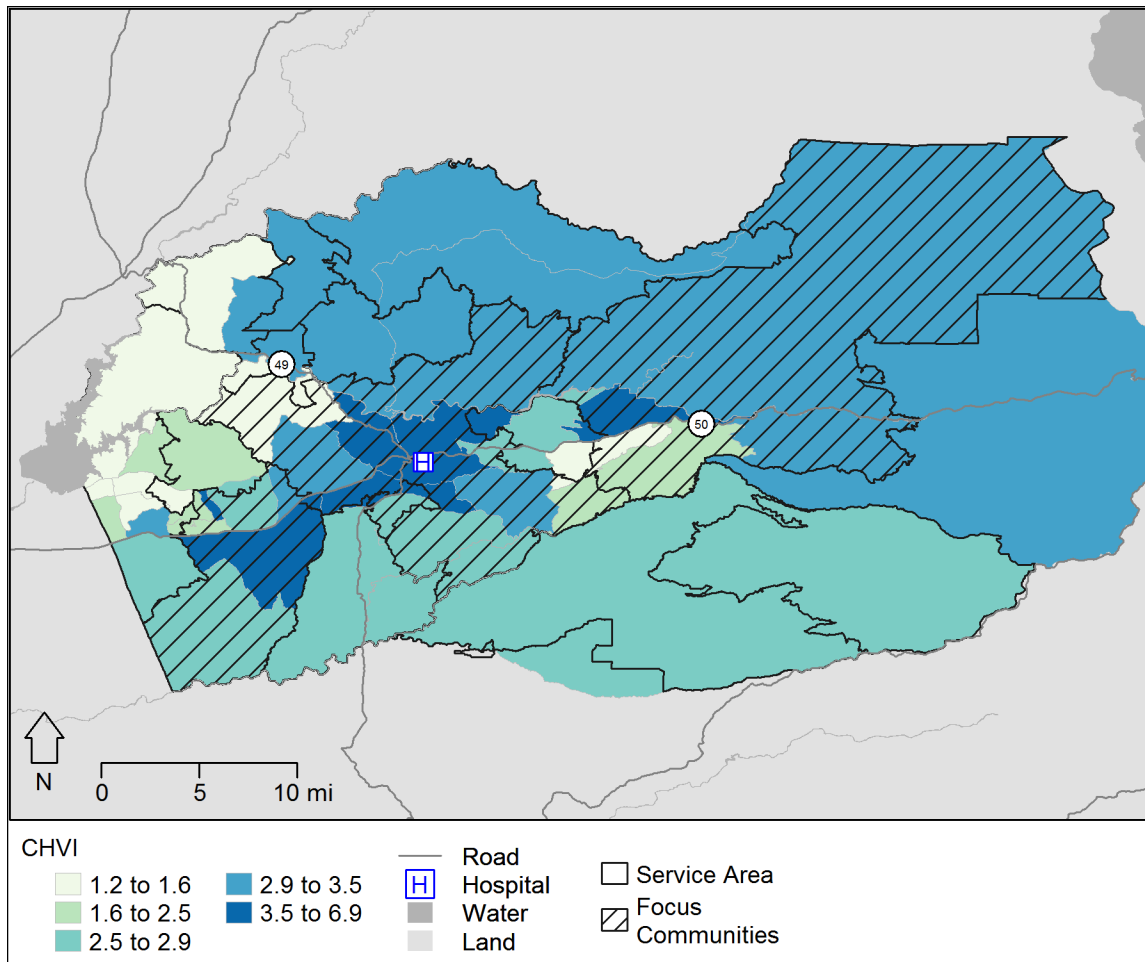


Figure 3: Community Health Vulnerability Index for Marshall HSA

Focus Communities – Overview

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

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

Table 4: Social Inequities Indicators to Determine Focus Communities

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

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

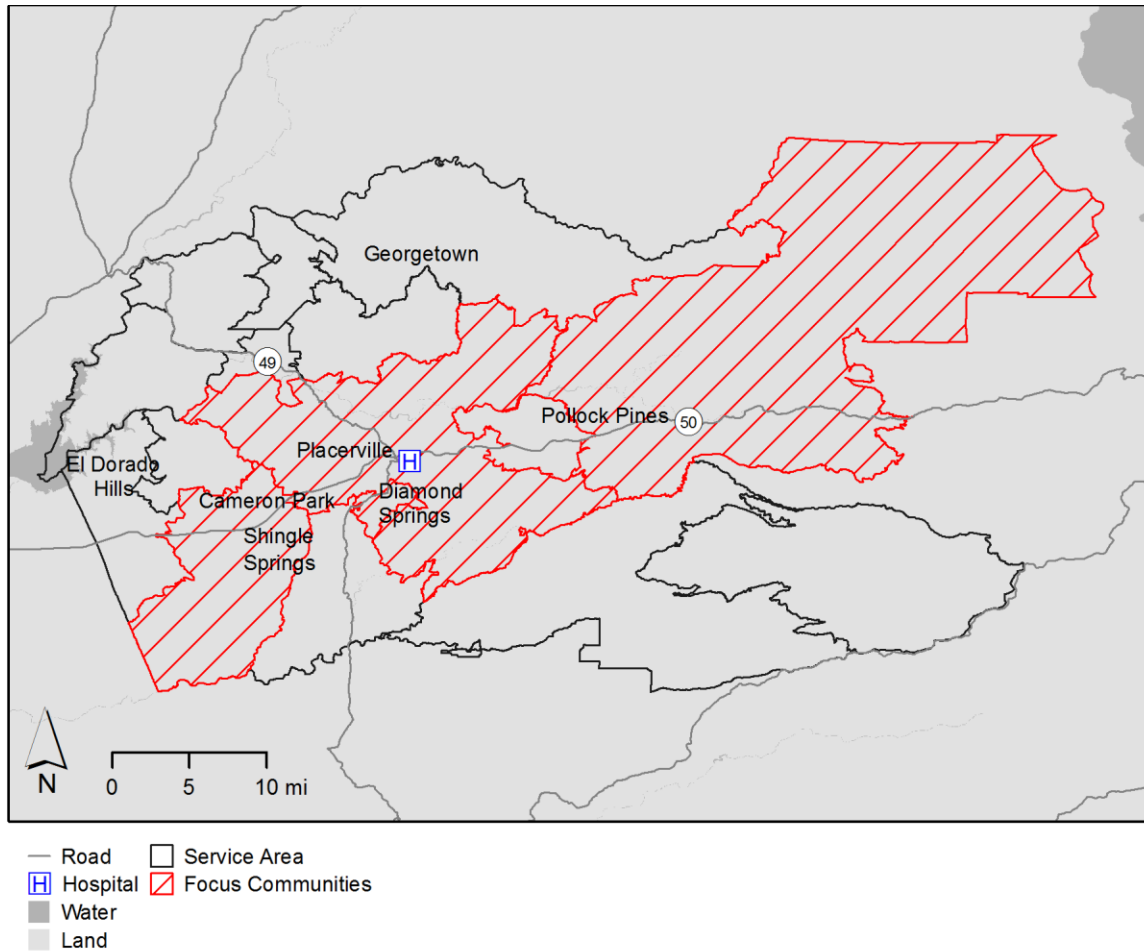


Figure 4: Focus Communities for the Marshall HSA

Table 5: Four Identified Focus Communities for the Marshall HSA

ZIP Code		Community/Area*	Population
Focus Communities	95619	Diamond Springs	4,893
	95667	Placerville	35,924
	95682	Shingle Springs/Cameron Park	29,590
	95726	Pollock Pines	8,902
Total Population in the Focus Communities			79,309
Total Population in the HSA			152,006
Percent of the HSA in the Focus Communities			52.2%

Source: US Census, 2013

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

Primary data collected in this assessment confirmed the location of vulnerable populations in the Marshall HSA that were identified in the previously mentioned Focus Communities. During primary data collection, key informants and community members were asked to identify geographical areas and populations in the HSA that were experiencing health inequities. Their responses indicated that specific geographic areas like Diamond Springs, Placerville, Shingle Springs/Cameron Park, and Pollock Pines were areas of concern. In terms of racial and ethnic groups, data indicated that Hispanic/Latinos were among the most mentioned as populations in need of improved health. Other vulnerable populations mentioned frequently were older adults, children, those experiencing homelessness, and those with chronic mental illness and/or substance abuse. A major determination for the above mentioned groups was directly related to the absence or presence of poverty in these populations. Poverty appeared to be the biggest influence in determining vulnerability to poor health, a finding detailed later in this report.

ASSESSMENT PROCESSES AND METHODS

Process Overview

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

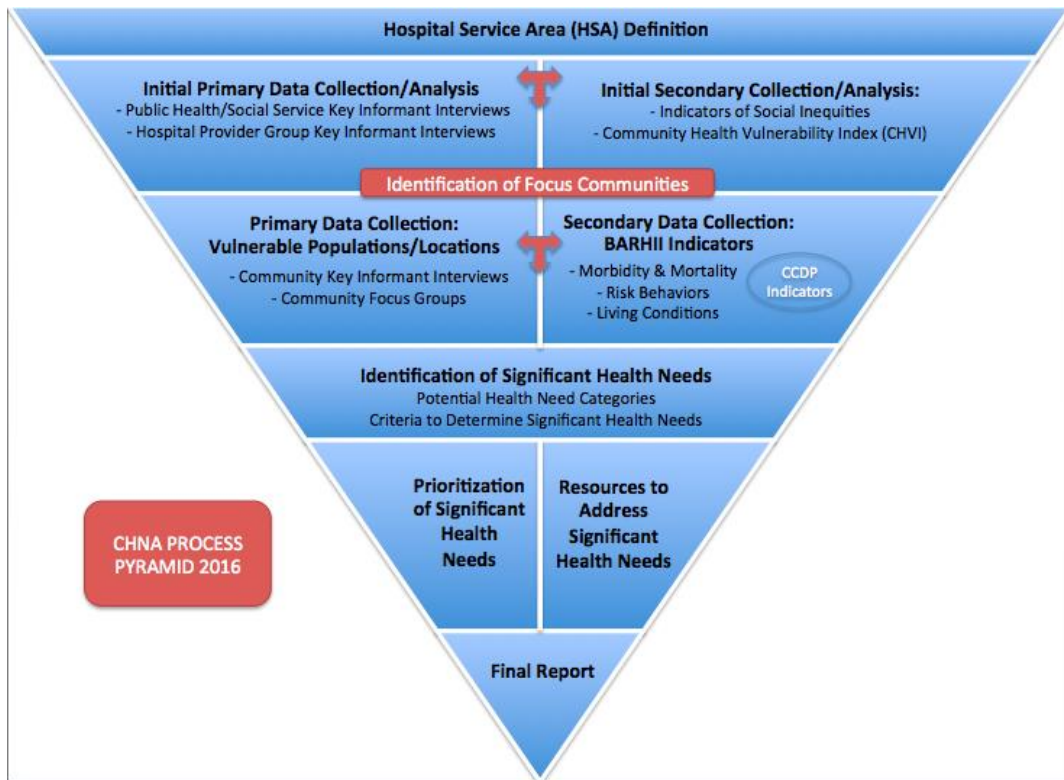


Figure 5: CHNA Process Model

BARHII Model

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

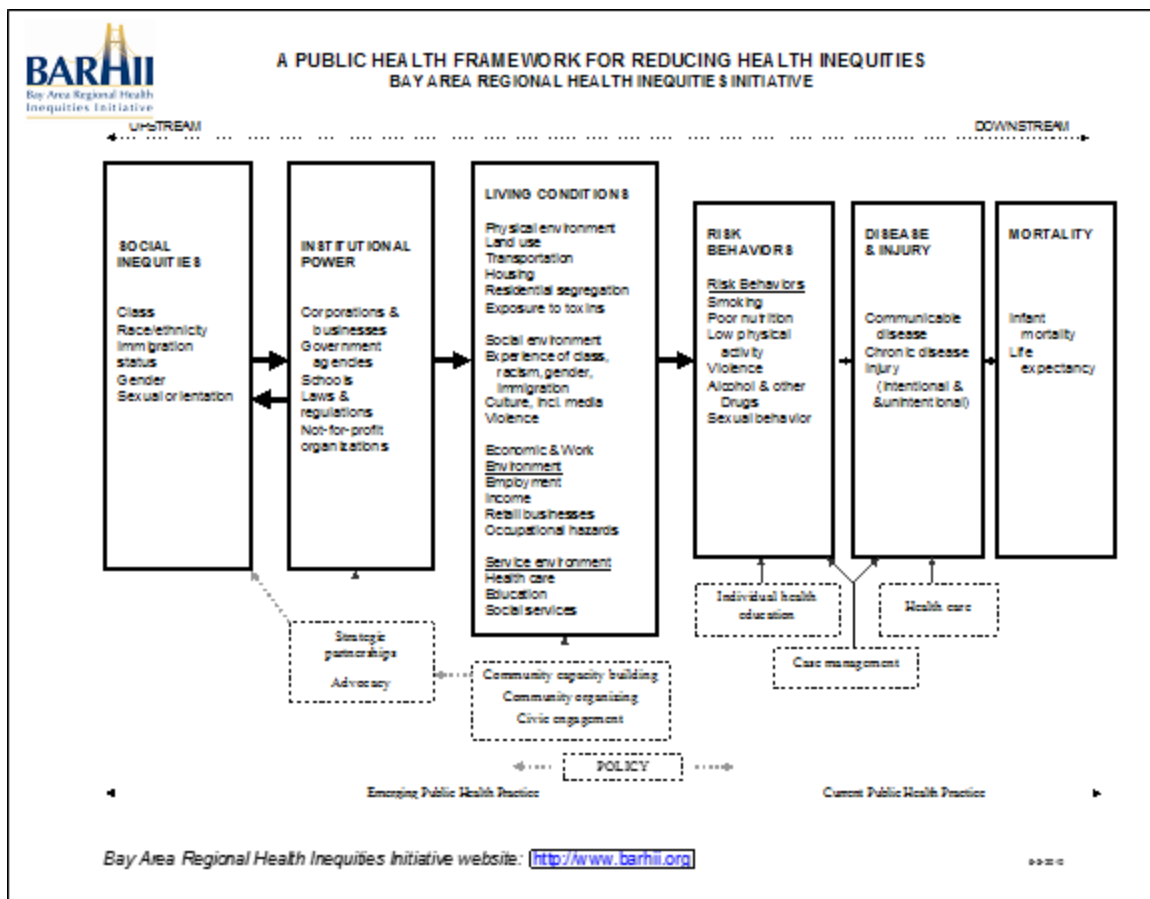


Figure 6: Bay Area Regional Health Inequities Initiative (BARHII) Model¹

Secondary Data Collection – Processing and Analyzing

Data Collection: Overview

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

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

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

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

Primary Data Collection

Overview of Primary Data Collection

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

Methodology for Collection and Interpretation

Primary data were collected from May 2015 - May 2016. Instruments used in primary data collection included a participant informed consent form, a demographic questionnaire, the interview question guide and a project summary sheet. All participants were given an informed consent form prior to their participation that provided information about the project, asked for permission to record the interview, and listed the potential benefits and risks for involvement in the interview (Appendix C). Participants were also asked to complete a voluntary questionnaire that was used to compile the demographics on all key informant and focus group participants (Appendix D). The same interview guide was used for key informant interviews and community focus groups with slight modifications for focus groups conducted in Spanish and focus groups with youth or low-literacy populations. In brief, the guide prompted participants to share: (1) the quality of life in their communities; (2) the health issues they see and experience in their communities; (3) the most urgent or priority health needs of their communities; and (4) the resources available to help address health needs (see Appendix D for full interview guide). A project summary sheet (Appendix D) was also given to all participants to provide them with information about the project as well as contact information for the CHNA staff leading the interviews.

Key Informant Interviews

Key informant interviews were conducted with area health experts and service providers familiar with health issues and places and populations experiencing health disparities within the Marshall HSA. Early interviews were conducted with county Public Health Officers and other public health and social service

experts of the corresponding counties within the HSA. Input from the initial set of group key informant and service provider interviews solicited expert opinion on vulnerable locations and populations within the HSA. This information was used to conduct additional key informant interviews with service providers in low-income, medically underserved and minority communities.

A total of five key informant interviews with seven key informants were completed for the Marshall HSA and are listed in Appendix E. Key informant interviewees represented the following sectors: academic/research (10%), community based organizations (50%), health care (10%), and public health (40%) with some interviewees representing multiple sectors. These seven key informants reported working with the following populations: low-income (100%), medically underserved (90%), and racial or ethnic minorities (60%). The racial and ethnic minority groups specified by interviewees included Latino/Hispanic and Asian. In addition, key informants specified working with the following vulnerable sub-populations: undocumented individuals, those with language barriers, individuals experiencing homelessness, individuals diagnosed with a developmental disability, chronic mental illness and/or substance abuse disorders, pregnant women, teen parents, single parents, children and seniors who have experienced abuse and/or neglect, and those utilizing public assistance programs.

Community Focus Groups

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

Within the Marshall HSA, three focus groups were conducted with 16 participants who were medically underserved, impoverished, socially and/or linguistically isolated and/or those who had chronic conditions. Of the approximately 15 people who completed demographic data cards, the median age was 43; 87% identified as female and 13% as male. In addition, 7% indicated that they were not high school graduates; 33% indicated that they were not covered by health insurance, and 40% received some form of public assistance. The self-identified racial composition of focus group participants is presented in Figure 7, with some participants identifying with multiple racial groups.

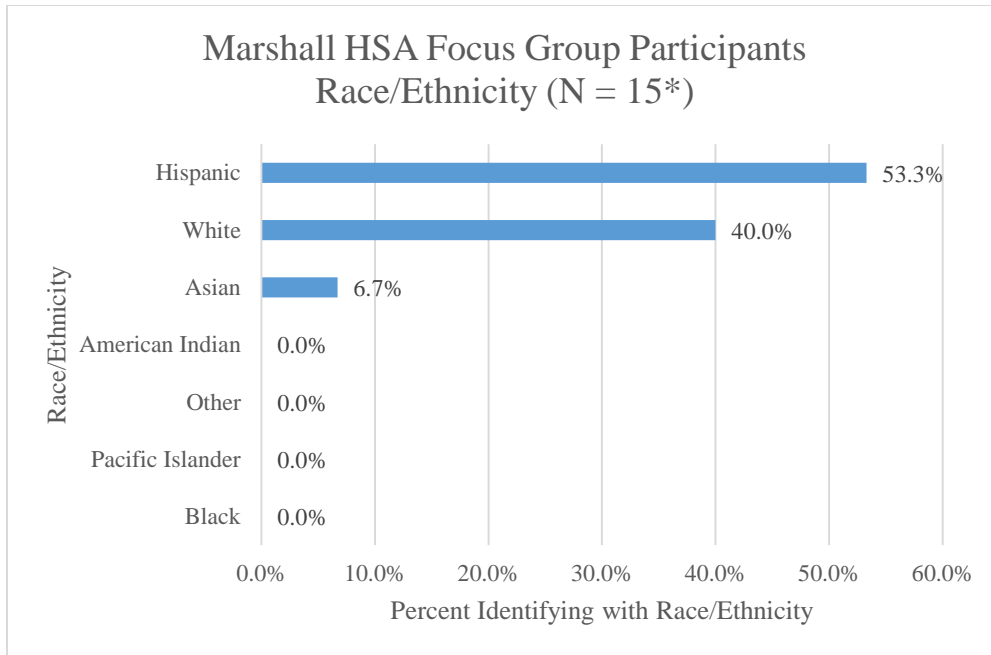


Figure 7: Focus Group Participant Demographics

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

Processing Primary Data

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

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

Information Gaps/Limitations

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

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

For primary data collection, it was a challenge to gain access to participants in communities that disproportionately experience health disparities. Measures were taken to reach out to vulnerable populations and locations through the process of Focus Community identification and following recommendations of early key informants. However, recruitment was variable and several key contacts expressed the issue of research fatigue from repeated needs assessments. Community members also frequently mentioned distrust of the research process or concerns that their input would not lead to changes in their communities. As best as possible, the research team attempted to address these concerns and to be open and transparent about the full CHNA process. All participants were given contact information of the staff that conducted their interviews and were encouraged to reach out with any additional questions; key informants were also assured that they would receive notification once the CHNA reports become available.

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

Consultants Used to Help Conduct the CHNA

The 2016 CHNA was completed by Valley Vision, a regional leadership organization committed to making the Sacramento region a great place to live, work and recreate. Valley Vision was selected to conduct the 2016 CHNA by Marshall Medical Center given its history of completing CHNAs, mixed methods research skills and strong commitment to drawing attention to critical unmet health needs. Valley Vision has been a leading social enterprise and nonprofit consultancy for the Sacramento region since 1994 with the ability to deliver trusted research, design and drive multi-stakeholder initiatives, and access a set of powerful leadership networks across the region. The Valley Vision team consisted of Giovanna Forno, CHES, BS, Alan Lange, MPA, Amelia Lawless, CHES, ASW, MPH, Anna Rosenbaum, MSW, MPH, Katie Strautman, MSW, Sarah Underwood, MPH, and Jenny Wagner, MPH. The CHNA team brought a rich skill-set from years of experience working in public health, health care, social service and other public sectors.

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

ASSESSMENT DATA AND FINDINGS

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

Mortality and Morbidity in the Marshall HSA

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

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

These overall health status indicators provide information about what it is like to live in the Marshall Hospital community on an everyday basis. Though specific measures of mortality show how communities suffer from specific conditions, overall health status indicators communicate length of life, quality of life, socioeconomic factors and the intersection of the environment and personal behaviors. Table 6 examines three common overall health status indicators: age-adjusted all-cause mortality, infant mortality, and life expectancy at birth for each of the ZIP codes within the Marshall HSA. Values in blue are those ZIP codes that fall above or below the desired direction in comparison to El Dorado County. Values and cells marked with a dash indicate that data was not provided due to small cell counts (less than 5) or that it was missing or unavailable for that ZIP code. When county rates were unavailable, state and national benchmarks were used as comparisons. In addition, ZIP codes followed by an asterisk denote designation as a Focus Community, and ZIP codes followed by a dagger denote small population size, considered below 1,100 people.

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

Overall Health Status Indicators	ZIP Code	Age-Adjusted All-Cause Mortality (per 10,000 pop)	Infant Mortality Rate (per 1,000 live births)	Life Expectancy at Birth (years)
	95614	53.34	--	86.25
	95619*	61.98	--	80.97
	95623	52.57	--	82.14
	95633	58.71	--	78.61
	95634	50.16	--	80.65
	95635 [†]	42.46	--	--
	95636 [†]	41.95	--	--
	95651 [†]	--	--	89.35
	95664 [†]	57.46	--	--
	95667*	68.40	5.08	79.50
	95672	57.85	--	81.17
	95675 [†]	--	--	--
	95682*	62.87	4.54	81.65
	95684	46.71	--	78.66
	95709	59.25	--	81.20
	95726*	73.51	4.61	79.43
	95762	52.03	4.12	84.48
	Marshall HSA	64.51	4.89	80.79
	<i>El Dorado County</i>	64.97	3.40	80.81
<i>CA State</i>	64.59	4.90	80.53	
<i>National 2013</i>	--	--	78.80 ¹	
<i>Healthy People 2020 Target</i>	--	6.00 ²	--	

Source: CDPH, 2010-2012; *Indicates Focus Community; [†]Indicates small population size

Two of the 17 Marshall HSA ZIP codes had age-adjusted all-cause mortality rates that were above the county benchmark, with the highest rate seen in Focus Community 95726 (Pollock Pines) at 73.51 deaths per 10,000 population. Infant mortality rates exceeded the county benchmark in four Marshall HSA ZIP codes, with the highest rate seen in 95667 (Placerville) at 5.08 infant deaths per 1,000 live births. Five ZIP codes had lower life expectancy than that of El Dorado County, at 80.81 years. The ZIP code with the lowest life expectancy was 95633 (Garden Valley) at 78.61 years, more than two years lower than the county life expectancy.

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

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

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

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

Diabetes

Diabetes was the seventh leading cause of death nationally in 2013.³ Diabetes is listed first in this CHNA as it was a commonly mentioned health issue for community residents, and quantitative findings show clear geographic health disparities across the Marshall HSA. Table 7 displays rates of mortality, ED visits, and hospitalizations due to diabetes for all 17 ZIP codes.

Rates – Mortality, ED Visits and Hospitalizations due to Diabetes

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

	ZIP Code	Mortality	ED Visits	Hospitalizations
Diabetes	95614	--	95.42	110.07
	95619*	2.08	338.44	249.21
	95623	--	194.33	134.57
	95633	--	132.38	127.25
	95634	--	127.29	107.35
	95635 [†]	2.25	204.62	198.68
	95636 [†]	2.26	284.85	242.16
	95651 [†]	--	107.48	100.36
	95664 [†]	--	121.75	121.32
	95667*	2.03	189.97	143.89
	95672	2.08	116.56	102.46
	95675 [†]	--	203.57	64.35
	95682*	1.58	144.14	125.27
	95684	2.17	159.74	130.65
	95709	--	120.64	109.90
	95726*	2.13	176.93	173.72
	95762	1.62	96.80	85.34
	Marshall HSA	2.14	146.10	122.09
El Dorado County	1.05	146.93	116.72	
CA State	2.11	209.15	192.30	
Healthy People 2020 Target	6.60			

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013

*Indicates Focus Community; [†]Indicates small population size

Nine of the Marshall HSA ZIP codes had mortality rates due to diabetes that were clearly above the county benchmark, but below the Healthy People 2020 benchmark set at 6.60 deaths per 10,000 population. The highest mortality rate due to diabetes was found in ZIP code 95636 (Grizzly Flats). Eight

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

ZIP codes had ED visit rates due to diabetes that were above the county benchmark. Of the 17 ZIP codes, Focus Community 95619 (Diamond Springs) had the highest rate for ED visits, at 338.44 ED visits per 10,000 population, more than twice the county rate. ZIP code 95619 (Diamond Springs) also had the highest rate of hospitalizations related to diabetes, at 249.21 hospitalizations per 10,000 population. Please note, data from ZIP code 95636 (Grizzly Flats) may be skewed due to small population size.

Diabetes was frequently discussed in the primary data, especially in relation to youth and pregnant women. As one resident stated, *“To prevent diabetes it is important to educate the parents of the kids that have diabetes or that are overweight. Prevention is very important, how to eat and all of that.”* (FG_3)

Percent – Adults Over 20-Years with Diabetes

Reported by the National Center for Chronic Disease Prevention and Health Promotion, the percent of adults over the age of 20 that have ever been told by a doctor that they have diabetes for 2012 was 6.4% for El Dorado County, lower than the state percent of 8.1%. Please note that El Dorado County rates were used when data were not available at the ZIP code or HSA level.

Percent – Medicare Patients with Diabetes Who Received an hA1c Exam

Preventive screening for diabetes is important. Lack of screening and follow up care for diabetes was mentioned in the primary data as a big concern for area residents. According to the Dartmouth College Institute for Health Policy & Clinical Practice in 2012, the percent of Medicare patients with diabetes who report having had an hA1c exam to monitor their diabetes diagnosis in El Dorado County was 81.9%, slightly above the state percent of 81.5%.

Heart Disease

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

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

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

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

Heart Disease	ZIP Code	Mortality	ED Visits	Hospitalizations
	95614	22.13	127.48	169.05
	95619*	18.93	214.19	342.05
	95623	15.45	142.25	231.37
	95633	20.92	102.78	189.78
	95634	12.55	109.30	210.25
	95635 [†]	16.25	180.56	244.78
	95636 [†]	19.45	194.23	355.29
	95651 [†]	--	92.30	174.30
	95664 [†]	13.86	153.33	221.58
	95667*	28.63	134.13	220.87
	95672	12.89	143.54	177.38
	95675 [†]	--	105.63	101.44
	95682*	17.85	134.17	197.46
	95684	30.60	77.38	150.32
	95709	17.25	56.50	183.15
	95726*	19.16	121.04	287.53
	95762	11.20	116.16	160.47
	Marshall HSA	19.03	124.74	200.63
	<i>El Dorado County</i>	<i>18.84</i>	<i>124.61</i>	<i>193.92</i>
<i>CA State</i>	<i>15.82</i>	<i>112.64</i>	<i>222.00</i>	
<i>Healthy People 2020 Target</i>	<i>10.10</i>	<i>--</i>	<i>--</i>	

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013

*Indicates Focus Community; [†] Indicates small population size

Examination of mortality due to heart disease revealed that seven Marshall HSA ZIP codes had rates higher than both the county rate and the Healthy People 2020 benchmark. The highest rate of all ZIP codes was found in 95684 (Somerset), at a rate of 30.60 deaths per 10,000 population, nearly double the county rate. Nine of the ZIP codes had rates above the county and state benchmarks for ED visits due to heart disease. Most notable was Focus Community 95619 (Diamond Springs) with an ED visit rate of 214.19 per 10,000 population, almost twice the state rate of 112.64 per 10,000 population. The highest rate of hospitalizations due to heart disease was in ZIP code 95636 (Grizzly Flats) at 355.29 hospitalizations per 10,000 population. Please note, data from ZIP code 95636 (Grizzly Flats) may be skewed due to small population size.

Percent – Adults Over 18 Years with Heart Disease

The California Health Interview Survey indicates that for 2011-2012, the percent of adults over the age of 18 that have ever been told by a doctor they have heart disease was 7.3% for the El Dorado County area, higher than the state percent at 6.3%.

Stroke, Hypertension and Kidney Disease

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

Rates – Mortality, ED Visits and Hospitalizations due to Stroke

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

	ZIP Code	Mortality	ED Visits	Hospitalizations
Stroke	95614	--	14.30	32.97
	95619*	4.55	22.01	74.23
	95623	3.37	21.69	47.07
	95633	3.46	17.47	50.45
	95634	--	16.65	41.88
	95635†	3.91	13.21	46.69
	95636†	--	9.78	43.69
	95651†	--	4.83	14.71
	95664†	--	5.10	29.97
	95667*	4.16	20.98	49.16
	95672	--	23.84	42.66
	95675†	--	3.89	10.03
	95682*	3.25	25.14	40.92
	95684	3.55	10.73	29.28
	95709	5.55	13.08	42.82
	95726*	3.12	21.66	52.96
	95762	1.40	23.95	36.67
	Marshall HSA	3.72	22.60	44.06
	El Dorado County	2.77	21.75	41.94
	CA State	3.60	18.55	52.23
Healthy People 2020 Target	3.40	--	--	

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013

*Indicates Focus Community; † Indicates small population size

Mortality rates due to stroke were higher than the county benchmark in nine Marshall HSA ZIP codes, with the highest rate seen in 95709 (Camino/Apple Hill). Rates of ED visits due to stroke were also above the county benchmark in four of the ZIP codes. Rates of hospitalization due to stroke were above the

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

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

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

county benchmark in nine ZIP codes, with the highest rate in Focus Community 95619 (Diamond Springs) at 74.23 hospitalizations per 10,000 population, above both the county and state benchmarks.

Rates – Mortality, ED Visits and Hospitalizations due to Hypertension

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

Hypertension	ZIP Code	Mortality	ED Visits	Hospitalizations
	95614	--	313.99	276.52
	95619*	1.27	802.40	620.94
	95623	--	517.13	394.12
	95633	--	342.17	299.30
	95634	1.31	391.68	321.69
	95635 [†]	--	500.64	477.10
	95636 [†]	--	791.97	606.37
	95651 [†]	--	333.14	227.61
	95664 [†]	--	456.42	379.16
	95667*	1.27	489.14	352.10
	95672	--	373.95	294.34
	95675 [†]	--	491.22	227.08
	95682*	0.88	399.87	317.52
	95684	--	398.25	307.06
	95709	1.27	352.24	296.31
	95726*	1.19	514.98	446.79
	95762	1.00	296.10	251.53
	Marshall HSA	1.20	402.40	319.10
	<i>El Dorado County</i>	--	409.94	308.47
<i>CA State</i>	1.21	408.99	383.74	

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013

*Indicates Focus Community; [†] Indicates small population size

Mortality rates due to hypertension were above the state benchmark in four of the 17 Marshall HSA ZIP codes. Examination of ED visits due to hypertension showed that eight of the ZIP codes had rates higher than the county and state benchmarks. ZIP codes 95619 (Diamond Springs) and 95636 (Grizzly Flats) had the highest rates of ED visits related to hypertension, at 802.40 and 791.97 ED visits per 10,000 population, respectively, both approximately twice the county and state rates. These ZIP codes also had the highest rates of hospitalizations related to hypertension, both approximately twice the county rate. Please note, data from ZIP code 95636 (Grizzly Flats) may be skewed due to small population size.

Percent – Adults with Hypertension Not Taking Medication

The Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System survey results for 2006-2010 indicate that the percentage of adults self-reporting high blood pressure who do not take medication was 29.1% for El Dorado County, slightly below the state percent of 30.3%.

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

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

Kidney Disease	ZIP Code	Mortality	ED Visits**	Hospitalizations**
		95614	0.82	51.01
	95619*	--	89.01	194.79
	95623	--	50.25	113.77
	95633	--	47.73	98.53
	95634	--	45.67	127.39
	95635 [†]	--	80.74	192.73
	95636 [†]	0.86	62.64	178.81
	95651 [†]	--	32.46	79.12
	95664 [†]	--	56.28	164.35
	95667*	0.56	48.24	125.19
	95672	--	55.35	114.22
	95675 [†]	--	14.63	79.07
	95682*	0.60	57.18	112.13
	95684	0.84	20.91	90.55
	95709	--	26.51	95.66
	95726*	0.77	29.99	141.91
	95762	0.54	63.48	92.60
	Marshall HSA	0.63	51.17	112.88
	<i>El Dorado County</i>	--	49.04	112.03
	<i>CA State</i>	0.73	57.09	160.01

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013

**OSHPD data includes data for nephritis, nephrotic syndrome, and nephrosis

*Indicates Focus Community; [†] Indicates small population size

Mortality rates due to kidney disease were elevated in four Marshall HSA ZIP codes, with the highest rate in 95636 (Grizzly Flats). Rates of ED visits due to kidney disease were above the county benchmark in nine ZIP codes, with the highest rate in 95619 (Diamond Springs). Rates of hospitalization due to kidney disease were high in ten ZIP codes, including all four Focus Communities. The highest rate of hospitalization to due kidney disease was seen in ZIP code 95619 (Diamond Springs), at 194.79 hospitalizations per 10,000 population. Please note, data from ZIP code 95636 (Grizzly Flats) may be skewed due to small population size.

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

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

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

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

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

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

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

Cancer Incidence	ZIP Code	Breast Cancer-Female	Colorectal Cancer	Lung Cancer	Prostate Cancer
		95614	13.25	--	--
	95619*	25.92	--	6.80	17.86
	95623	21.75	--	--	12.66
	95633	18.73	--	--	19.04
	95634	22.94	--	--	22.00
	95635 [†]	--	--	--	--
	95636 [†]	--	--	--	16.25
	95651 [†]	--	--	--	23.97
	95664 [†]	--	--	--	16.50
	95667*	27.27	6.24	7.43	17.01
	95672	21.10	--	6.71	13.42
	95675 [†]	--	--	--	--
	95682*	25.97	4.71	6.57	20.28
	95684	19.32	--	--	15.88
	95709	18.98	--	--	23.01
	95726*	14.21	--	5.47	11.13
	95762	21.84	3.87	2.79	16.52
	Marshall HSA	23.14	3.93	5.02	18.09
	CA State	13.16	3.88	4.54	11.61

Source: California Cancer Registry, 2010-2012

*Indicates Focus Community; [†]Indicates small population size

Twelve of the 17 Marshall HSA ZIP codes had breast cancer incidence rates above the state rate, including all four Focus Communities. The ZIP codes with the highest rates of breast cancer incidence were Focus Communities 95667 (Placerville) and 95682 (Shingle Springs/Cameron Park) at 27.27 and 25.97 new cases per 10,000 population, respectively. These same two Focus Communities also had elevated rates of colorectal cancer, with 95667 (Placerville) at over one and a half times the state rate, at 6.24 cases per 10,000 population. Five ZIP codes had rates of lung cancer incidence that were above the state benchmark, with 95667 (Placerville) having the highest rate at 7.43 new cases per 10,000 population. Fourteen ZIP codes had an elevated incidence rate for prostate cancer, with the three highest rates in 95651 (Lotus), 95709 (Camino/Apple Hill), and 95634 (Georgetown) at 23.97, 23.01, and 22.00 new cases per 10,000 population, respectively. Two Focus Communities, 95667 (Placerville) and 95682 (Shingle Springs/Cameron Park) had elevated rates across all four categories of cancer. Please note, data from ZIP code 95651 (Lotus) may be skewed due to small population size.

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

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

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

ZIP Code	Mortality All-Cause Cancer	ED Visits Lung Cancer	Hospitalizations Lung Cancer
95614	14.10	--	9.88
95619*	14.33	1.40	10.93
95623	22.99	3.56	14.35
95633	12.64	1.78	10.82
95634	14.14	1.83	11.24
95635 [†]	14.16	2.77	6.25
95636 [†]	19.70	5.46	8.96
95651 [†]	--	6.95	7.67
95664 [†]	15.61	2.73	7.15
95667*	22.23	3.52	11.67
95672	14.10	2.94	8.90
95675 [†]	--	3.13	--
95682*	21.75	3.55	7.23
95684	18.46	3.05	10.65
95709	20.76	2.29	12.84
95726*	14.99	3.79	8.59
95762	13.11	1.98	6.13
Marshall HSA	18.15	3.14	9.16
<i>El Dorado County</i>	18.01	3.16	9.31
<i>CA State</i>	15.41	2.68	7.95
<i>Healthy People 2020</i>	16.10	--	--

Source: Mortality: CDPH, 2012; ED visits: OSHPD, 2011-2013

*Indicates Focus Community; [†] Indicates small population size

Six of the 17 Marshall HSA ZIP code communities exceeded the county, state and Healthy People 2020 benchmarks for mortality due to all-cause cancer, with the highest rates in ZIP codes 95623 (Kingsville/Nashville) and 95667 (Placerville) at 22.99 and 22.23 deaths per 10,000 population, respectively. Six of the ZIP codes had rates of ED visits due to lung cancer that were higher than the county benchmark of 3.16 ED visits per 10,000 population, with the highest rate in 95651 (Lotus) at 6.95 ED visits per 10,000 population. Eight of the ZIP codes had lung cancer-related hospitalization rates above the county benchmark, with the highest rate in ZIP code 95623 (Kingsville/Nashville), at 14.35 hospitalizations per 10,000 population, more than one and a half times the county rate. Please note, data from ZIP code 95651 (Lotus) may be skewed due to small population size.

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

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

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

ZIP Code	ED visits Female Breast Cancer	Hospitalization Female Breast Cancer	ED visits Colorectal Cancer	Hospitalization Colorectal Cancer	ED visits Prostate Cancer	Hospitalization Prostate Cancer
95614	4.87	9.91	1.41	4.84	7.51	9.82
95619*	7.07	9.24	--	10.89	--	9.27
95623	7.61	20.67	2.88	7.05	5.31	16.35
95633	4.28	11.97	--	3.80	5.84	9.58
95634	10.48	12.45	1.53	6.31	11.96	14.56
95635†	--	10.34	--	--	5.73	13.97
95636†	--	--	--	--	--	14.76
95651†	8.87	11.08	--	6.44	9.97	31.13
95664†	--	10.26	4.14	6.94	7.55	23.52
95667*	8.52	14.22	1.92	7.79	8.46	11.83
95672	13.99	11.22	3.11	5.92	5.98	12.17
95675†	--	11.14	--	7.81	9.05	--
95682*	7.63	17.45	2.89	7.19	10.43	15.03
95684	11.67	8.70	--	6.63	--	10.78
95709	5.27	11.87	2.27	12.06	2.63	20.17
95726*	3.34	11.21	1.16	6.72	3.17	12.36
95762	8.17	10.93	1.18	5.61	5.39	12.05
Marshall HSA	8.15	13.22	2.09	6.77	7.22	13.08
El Dorado County	7.96	13.15	1.77	6.59	6.67	12.31
CA State	6.59	11.07	1.85	6.43	5.79	12.37

Source: OSHPD, 2011-2013

*Indicates Focus Community; † Indicates small population size

Examination of ED visits related to breast cancer in females revealed that six Marshall HSA ZIP codes had rates above the county and state benchmarks. The highest rate of breast cancer-related ED visits was found in ZIP code 95672 (Rescue) at 13.99 ED visits per 10,000 population, and the highest rate of hospitalizations was found in 95623 (Kingsville/Nashville) at 20.67 hospitalizations per 10,000 population. Rates for ED visits related to colorectal cancer showed that six ZIP codes had rates above the county and state benchmarks, with ZIP code 95664 (Pilot Hill) at 4.14 per 10,000 population, over double the county rate. Hospitalization data for colorectal cancer showed nine ZIP codes had higher rates than the county benchmark rate, with the ZIP code of 95709 (Camino/Apple Hill) substantially higher at 12.06 hospitalizations per 10,000 population. ED visit rates for prostate cancer were higher than the county rate in seven of the ZIP codes, with the highest rate found in 95634 (Georgetown). Nine ZIP codes were

higher than the county benchmark for prostate cancer hospitalization, with the two highest rates in 95651 (Lotus) and 95664 (Pilot Hill) at 31.13 and 23.52 visits per 10,000 population, respectively. Please note, data from ZIP code 95651 (Lotus) may be skewed due to small population size.

Screening rates – Breast (Mammogram), Cervical (Pap) and Colorectal (Sigmoid/colonoscopy) Cancer
 Data on the percent of Medicare enrollees ages 67-69 or older shown in Figure 8 reports that the percent receiving a mammogram within the last two years was higher in El Dorado County than the state benchmark. The percent of female adults over the age of 18 that reported having had a pap test in the last three years for El Dorado County was equal to the state rate of 78.3%. The percentage of 50-year-olds in El Dorado County that reported having had a sigmoidoscopy or colonoscopy at least once was substantially higher in El Dorado County at 67.9% compared to the state at 57.9%.

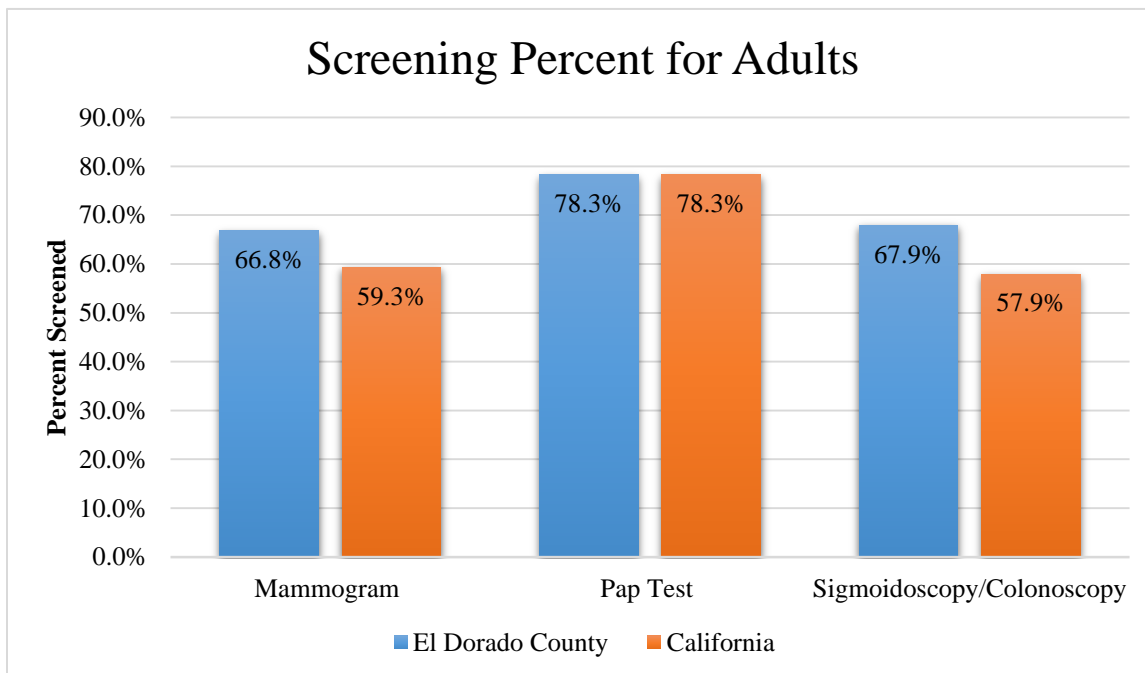


Figure 8:

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

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

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

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

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

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

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

	ZIP Code	Mortality CLRD	ED Visits COPD	Hospitalizations COPD
Chronic Lower Respiratory Disease (CLRD) & Chronic Obstructive Pulmonary Disease (COPD)	95614	3.92	224.01	163.42
	95619*	7.79	475.73	333.73
	95623	3.16	377.18	318.65
	95633	4.09	246.63	221.75
	95634	4.97	273.09	256.20
	95635 [†]	5.03	364.58	200.25
	95636 [†]	4.14	412.81	244.14
	95651 [†]	--	367.04	248.94
	95664 [†]	5.00	316.11	243.32
	95667*	6.22	360.13	254.60
	95672	4.23	186.99	133.96
	95675 [†]	--	463.30	181.71
	95682*	6.29	254.03	180.87
	95684	5.11	322.19	239.19
	95709	--	295.01	230.86
	95726*	5.68	330.21	282.49
	95762	1.45	125.13	84.54
	Marshall HSA	4.85	264.80	193.03
	<i>El Dorado County</i>	<i>5.10</i>	<i>258.48</i>	<i>180.41</i>
	<i>CA State</i>	<i>3.46</i>	<i>218.30</i>	<i>154.44</i>
<i>Healthy People 2020</i>	--	<i>56.80</i>	<i>50.10</i>	

Source: Mortality: CDPH, 2012; ED visits: OSHPD, 2011-2013

*Indicates Focus Community; [†] Indicates small population size

Five ZIP codes, including all four Focus Communities, had mortality rates due to CLRD above the county and state benchmarks, with the highest rate seen in 95619 (Diamond Springs) at 7.79 deaths per 10,000 population. Twelve ZIP codes had rates above both the county and state benchmarks for ED visits due to COPD, while 14 ZIP codes had elevated rates of hospitalizations due to COPD. The highest rate for ED visits was found in 95619 (Diamond Springs) at 475.73 ED visits per 10,000 population, more than one and a half times the county benchmark rate. This same ZIP code 95619 (Diamond Springs) had the highest rate of hospitalizations due to COPD at 333.73, compared to the county rate of 180.41 per 10,000 population and the Healthy People benchmark of 50.10 per 10,000 population. Three Focus Communities, 95619 (Diamond Springs), 95666 (Placerville) and 95726 (Pollock Pines) had elevated rates across all three categories of respiratory health.

Rates – ED Visits and Hospitalizations due to Asthma

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

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

	ZIP Code	ED Visits	Hospitalizations
Asthma	95614	135.29	76.77
	95619*	265.15	103.61
	95623	226.92	124.17
	95633	150.09	83.23
	95634	149.22	85.19
	95635 [†]	190.46	105.49
	95636 [†]	273.72	86.18
	95651 [†]	209.26	96.71
	95664 [†]	186.56	98.81
	95667*	209.36	90.06
	95672	116.57	66.38
	95675 [†]	325.92	84.30
	95682*	169.20	80.76
	95684	173.97	85.76
	95709	188.51	102.19
	95726*	194.74	87.28
	95762	95.84	50.04
	Marshall HSA	165.21	78.86
	<i>El Dorado County</i>	<i>161.90</i>	<i>71.69</i>
	<i>CA State</i>	<i>148.86</i>	<i>70.55</i>

Source: OSHPD, 2011-2013

*Indicates Focus Community; [†] Indicates small population size

Twelve of the Marshall HSA ZIP codes had ED visit rates due to asthma that fell above the county and state benchmarks, while 15 ZIP codes fell above the county and state benchmarks for asthma-related hospitalizations. The highest rates of ED visits were found in ZIP codes 95675 (River Pines) at 325.92 ED visits per 10,000 population and 95636 (Grizzly Flats) at 273.72 ED visits per 10,000 population. The highest rate of hospitalizations due to asthma was seen in 95623 (Kingsville/Nashville) at 124.17 per 10,000 population, clearly above both the county and state benchmarks. Please note, data from ZIP codes 95675 (River Pines) and 95636 (Grizzly Flats) may be skewed due to small population size.

Percent – Adults Over 18 Years with Asthma

As reported by the Centers for Disease Control and Prevention from the Behavioral Risk Factor Surveillance System survey, the percent of adults over the age of 18 that have ever been told by a doctor that they have asthma was 16.9% for El Dorado County, above the state percent of 14.2% in 2011-2012.

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

Rates – ED Visits and Hospitalizations due to Tuberculosis

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

Tuberculosis	ZIP Code	ED Visits	Hospitalizations
	95614	--	--
	95619*	--	--
	95623	--	--
	95633	--	--
	95634	--	--
	95635†	--	--
	95636†	--	--
	95651†	--	--
	95664†	--	--
	95667*	--	0.17
	95672	--	--
	95675†	--	--
	95682*	--	--
	95684	--	--
	95709	0.22	--
	95726*	--	--
	95762	--	--
	Marshall HSA	0.08	0.10
	<i>El Dorado County</i>	0.04	0.07
<i>CA State</i>	0.15	0.82	

Source: OSHPD, 2011-2013

*Indicates Focus Community; † Indicates small population size

One Marshall HSA ZIP code, 95709 (Camino/Apple Hill) had an elevated rate of ED visits due to tuberculosis at 0.22 cases per 10,000 population, over five times the county benchmark. Focus Community 95667 (Placerville) had an elevated hospitalization rate due to tuberculosis at 0.17 hospitalizations per 10,000 population, over two times the county benchmark.

Mental Health

Mental illness is defined as “health conditions that are characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distress and/or impaired functioning.”¹²

Depression is the most common type of mental illness in the United States and by 2020 is expected to be the second leading cause of disability worldwide. Mental illness is strongly correlated with many risks for chronic diseases such as physical inactivity, smoking, excessive drinking, and insufficient sleep.¹³ Mental health data at the sub-county level is difficult to obtain. ED visits and hospitalizations due to mental health conditions are provided in Table 18 for the Marshall HSA.

¹²Centers for Disease Control and Prevention. (2013). Mental Health Basics. Retrieved from:

<http://www.cdc.gov/mentalhealth/basics.htm>

¹³ Ibid.

Rates – ED Visits and Hospitalizations due to Mental Health

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

	ZIP Code	ED Visits	Hospitalizations
Mental Health	95614	150.22	157.55
	95619*	278.84	283.25
	95623	199.53	237.03
	95633	168.32	215.27
	95634	126.83	150.17
	95635†	237.73	166.83
	95636†	188.32	258.87
	95651†	290.59	149.62
	95664†	176.02	129.57
	95667*	252.38	258.67
	95672	151.50	159.97
	95675†	179.15	162.72
	95682*	203.34	187.34
	95684	142.37	192.60
	95709	173.80	206.26
	95726*	196.72	249.15
	95762	124.39	121.65
	Marshall HSA	189.65	193.95
	El Dorado County	196.33	184.40
	CA State	149.93	186.92

Source: OSHPD, 2011-2013 *Indicates Focus Community; † Indicates small population size

Seven ZIP codes in the Marshall HSA, including all four Focus Communities, had rates of ED visits for mental health conditions that exceeded both the county and state benchmarks. The highest rates of ED visits due to mental health issues were found in 95651 (Lotus) and Focus Community 95619 (Diamond Springs), at 290.59 and 278.84 visits per 10,000 population, respectively. Nine of the ZIP codes exceeded the county and state rates for mental health hospitalizations, with the highest rate seen in Focus Community 95619 (Diamond Springs) at 283.25 hospitalizations per 10,000 population. Please note, data from ZIP code 95651 (Lotus) may be skewed due to small population size.

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

We need more mental health services generally in the county. I'm hearing from schools that kids have no one to be seen by, and there's an overall lack of insurance coverage for mental health services. (KI_5)

I think we need more psychiatrists, because again big issues, mental illness, who can work collaboratively with the primary care physicians to help them better understand the needs

especially of those folks who are stable, but need ongoing support so that the mental health system isn't exasperated. Also, mental health services, the people who receive those services also have a lot of chronic medical issues. Being able to have guidance in a primary home that can provide for their needs is really critical. (KI_3)

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

Oh yeah, today there was a lady. She must have been about 30. She had her suitcases and a garbage bag and was walking up to the park...I don't think the homeless in and of itself is a dangerous population. I think a lot of that comes down to mental health. (FG_1)

Several participants also spoke about the isolation, loneliness and depression that older adults can experience. As one provider described,

I think another thing, then people are on their own or alone they get depressed and stuff and I think that causes all kinds of health issues and again, it's all back to what we were saying. People need people to talk to. They need people to know they care. They need people to be in their lives and stuff....so there's not as much socialization up here in El Dorado County as if it was – it was in the city. (FG_2)

In addition, many participants pointed out the overlap between mental health and substance abuse. One service provider summed it up by saying, “So I would say that it's mental health and substance abuse that are probably the greatest overarching needs for the county”. (KI_4) Another service provider stated:

We have a lot of folks showing up in emergency room who are presenting as being mentally ill, but really meth, heroin is on the rise. Dealing with that and trying to help emergency rooms and recognizing we can admit them to a psych facility for alcohol and drug problem and you need to be able to address and deal with those issues that you don't want to deal with, but that's what ER's do, supposed to be able to do...it doesn't sit in mental health, it doesn't sit in public health. It's a community problem and the community needs to work together. (KI_3)

Rate – Alzheimer’s Disease Mortality

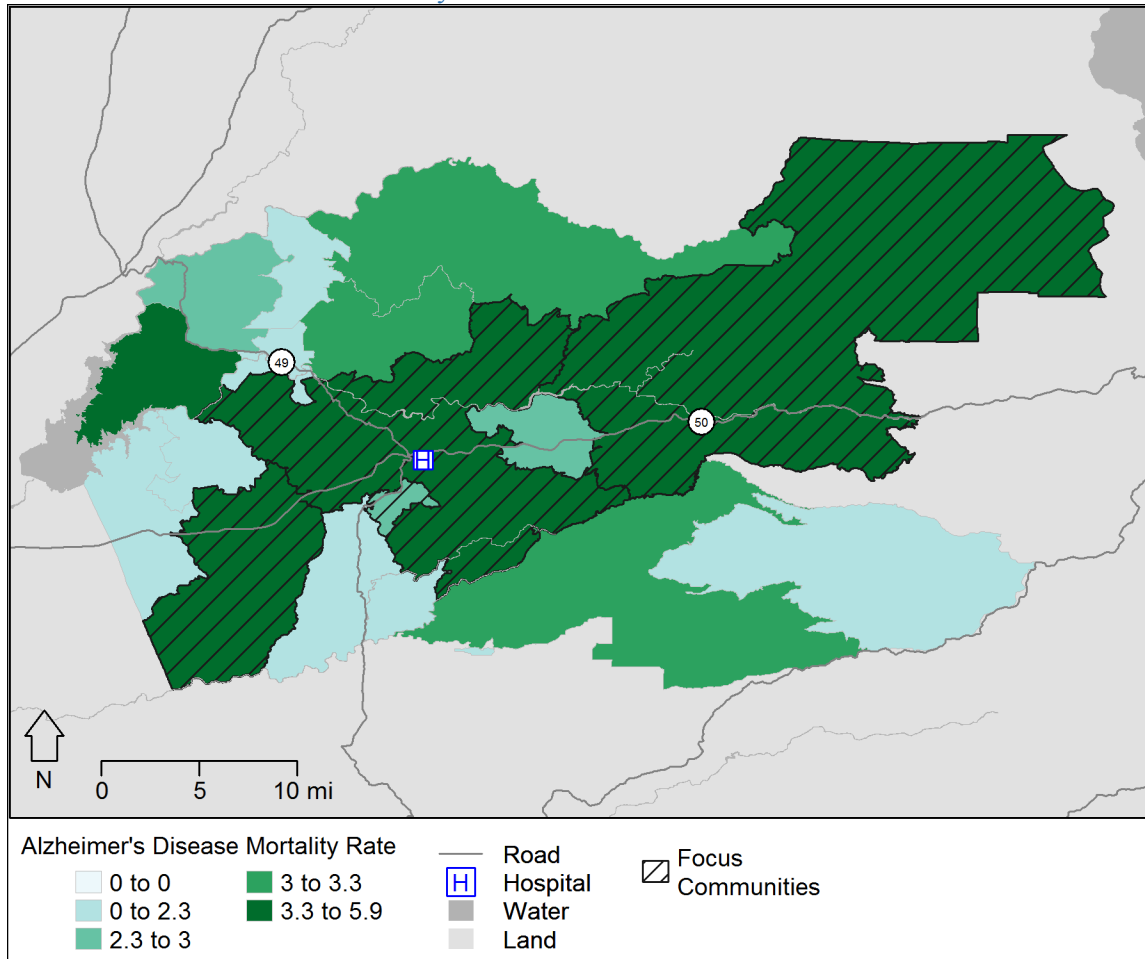


Figure 9: Alzheimer's Disease Mortality Rate

Figure 9 displays areas in the Marshall HSA that have elevated rates of mortality due to Alzheimer’s disease. Four ZIP codes fell in the highest quintile for deaths due to Alzheimer’s disease, with the highest rate in 95664 (Pilot Hill) at 5.87 deaths per 10,000 population. The Focus Communities of 95682 (Shingle Springs/Cameron Park), 95667 (Placerville), and 95726 (Pollock Pines) also have rates that are above the county rate of 3.10 deaths per 10,000 and the state rate of 3.12 deaths per 10,000 population. Please note, data from ZIP code 95664 (Pilot Hill) may be skewed due to small population size.

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

Aggregated data from the Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System survey for 2006-2012 showed that 16.2% of respondents in El Dorado County, over the age of 18, indicated that they receive insufficient social and emotional support most of the time. This percent was lower than the state percent at 24.6% of respondents. Participants also spoke about the importance of residents feeling a sense of social and community connectedness with one another.

Dental Health

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

Rates – ED Visits and Hospitalizations due to Dental Health

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

Dental Health	ZIP Code	ED Visits	Hospitalizations
	95614	36.25	8.14
	95619*	86.41	9.75
	95623	71.90	12.04
	95633	46.30	11.93
	95634	55.05	11.78
	95635 [†]	69.03	8.14
	95636 [†]	101.56	8.63
	95651 [†]	44.81	8.58
	95664 [†]	27.17	8.02
	95667*	66.90	8.60
	95672	27.53	6.76
	95675 [†]	86.69	8.30
	95682*	37.71	8.47
	95684	72.12	10.19
	95709	69.29	8.87
	95726*	74.79	8.51
	95762	16.85	4.68
	Marshall HSA	46.97	8.39
	El Dorado County	60.46	7.65
CA State	41.34	7.81	

Source: OSHPD, 2011-2013; *Indicates Focus Community; [†] Indicates small population size

Rates of ED visits due to dental health issues were elevated in nine of the 17 Marshall HSA ZIP codes. ZIP codes 95636 (Grizzly Flats) had the highest rate for ED visits at 101.56 visits per 10,000 population, more than one and a half times the county rate and more than double the state rate. The rate for hospitalizations was high in fifteen ZIP codes, with 95623 (Kingsville/Nashville) experiencing the highest rate at 12.04 hospitalizations per 10,000 population, followed closely by 95633 (Garden Valley) and 95634 (Georgetown) at 11.93 and 11.78 per 10,000 people, respectively. Please note, data from ZIP code 95636 (Grizzly Flats) may be skewed due to small population size.

Key informants and focus group participants brought up dental health as a major concern within the Marshall HSA. Participants discussed the lack of dentists that accept Denti-Cal, the lack of comprehensive care and the high cost of paying out of pocket for dental care. One key informant explained, “Dental care is greatly needed especially for the Medi-Cal population, there are very few dentists in the area that will take them.” (KI_4). Another service provider explained, “I can tell you that we had significant bottle mouth disease...so on the pediatric side we had a lot of dentition issues.” (KI_1)

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

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

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

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

Suicide/Self-Inflicted Injury	ZIP Code	Mortality	ED Visits	Hospitalizations
	95614	--	8.35	3.76
	95619*	1.71	20.46	5.31
	95623	1.19	11.07	5.85
	95633	--	7.85	3.54
	95634	--	4.36	5.98
	95635 [†]	1.61	8.60	4.89
	95636 [†]	--	6.21	--
	95651 [†]	--	7.64	--
	95664 [†]	1.30	5.40	3.91
	95667*	1.66	12.05	5.11
	95672	1.70	9.09	2.67
	95675 [†]	--	7.12	--
	95682*	1.69	11.27	4.12
	95684	--	5.56	3.27
	95709	2.00	11.50	3.29
	95726*	1.05	14.44	3.05
	95762	1.30	7.73	2.63
	Marshall HSA	1.71	10.77	3.97
	<i>El Dorado County</i>	<i>2.11</i>	<i>10.35</i>	<i>3.97</i>
<i>CA State</i>	<i>1.04</i>	<i>8.18</i>	<i>4.40</i>	
<i>Healthy People 2020</i>	<i>1.00</i>	<i>--</i>	<i>--</i>	

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013

*Indicates Focus Community; [†] Indicates small population size

The ZIP code of 95709 (Camino/Apple Hill) had the highest rate of mortality due to suicide at 2.00 per 10,000 population, which was below the county rate (2.11) but above the state rate of 1.04 deaths per 10,000 population. Six ZIP codes, including all four Focus Communities, had elevated rates of ED visits due to self-inflicted injury, with the highest rate in Focus Community 95619 (Diamond Springs) at 20.46 visits per 10,000 people, nearly double the county rate. Six ZIP codes had elevated rates for hospitalizations due to self-inflicted injury with the highest rate in 95634 (Georgetown) at 5.98 hospitalizations per 10,000 population.

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

Suicide and self-inflicted injury was discussed in the primary data. The following quotes point out the nuances around this issue:

The highest rate of suicide is with young white males and that's something, yet the focus is on children and youth. There's a lot of denial around what the real issues are. Also, in the more rural communities there's a distrust of government and services and so people tend to not seek services as much. (KI_3)

I mean policies are consistent with the values of the community and so one of them is when we look at the suicide rates, the main cause of deaths is firearms for both men and women and they are very much loved in this county. (KI_2)

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

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

Unintentional Injury	ZIP Code	Mortality	ED Visits	Hospitalizations
	95614	3.91	620.62	171.28
	95619*	3.65	1,137.02	280.42
	95623	2.77	1,032.68	261.13
	95633	2.85	724.70	212.89
	95634	3.49	830.61	246.95
	95635 [†]	3.31	940.30	181.90
	95636 [†]	3.36	1,242.79	230.97
	95651 [†]	--	1,047.63	257.09
	95664 [†]	3.98	736.22	203.43
	95667*	5.40	951.64	228.70
	95672	2.56	595.43	136.07
	95675 [†]	--	1,060.37	150.19
	95682*	3.24	713.55	188.84
	95684	4.78	957.70	256.40
	95709	3.71	828.49	207.36
	95726*	5.32	919.56	232.17
	95762	1.47	485.05	120.91
	Marshall HSA	3.84	758.17	190.74
	El Dorado County	4.49	806.32	179.30
CA State	2.88	666.38	154.85	
Healthy People 2020	3.40	--	--	

Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013

*Indicates Focus Community; [†] Indicates small population size

Three ZIP codes in the Marshall HSA had elevated mortality rates for unintentional injury that exceeded the county, state, and Healthy People 2020 benchmarks, with the highest rate seen in Focus Community 95667 (Placerville). ED visits for unintentional injury were high in 11 ZIP codes, with 95636 (Grizzly Flats) at 1242.79 ED visits per 10,000 population, substantially higher than the county and state benchmarks. Thirteen ZIP codes had elevated rates for hospitalizations due to unintentional injuries, with the highest rate in Focus Community 95619 (Diamond Springs) at 280.42 hospitalizations per 10,000

population. Please note, data from ZIP code 95636 (Grizzly Flats) may be skewed due to small population size.

Risk Behaviors and Living Conditions in the Marshall HSA

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

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

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

Substance Abuse

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

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

¹⁶ Ibid.

¹⁷ Ibid.

Rates – ED Visits and Hospitalizations due to Substance Abuse

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

Substance Abuse**	ZIP Code	ED Visits	Hospitalizations
	95614	240.06	124.51
	95619*	722.32	287.00
	95623	534.56	249.22
	95633	412.91	210.94
	95634	479.68	254.23
	95635 [†]	466.36	238.41
	95636 [†]	691.98	282.91
	95651 [†]	635.93	272.10
	95664 [†]	265.06	150.82
	95667*	588.22	221.76
	95672	233.20	109.85
	95675 [†]	817.49	206.74
	95682*	332.85	146.80
	95684	565.42	253.64
	95709	484.60	185.04
	95726*	654.36	276.22
	95762	123.65	63.86
	Marshall HSA	390.65	165.80
	<i>El Dorado County</i>	473.71	165.17
<i>CA State</i>	253.8	145.00	

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

*Indicates Focus Community; [†] Indicates small population size

The rate of substance abuse-related ED visits in El Dorado County was substantially higher than the state rate. Ten of the Marshall HSA ZIP codes exceeded the county benchmark for ED visits, while 12 ZIP codes were above the county rate for substance abuse-related hospitalizations. ZIP code 95675 (River Pines) had the highest rate of ED visits related to substance abuse, at 817.49 visits per 10,000 population, followed by Focus Community 95619 (Diamond Springs) at 722.32 visits per 10,000, substantially higher than both the county and state benchmarks. Twelve ZIP codes had elevated rates for substance-abuse related hospitalizations, with the highest rates in Focus Community 95619 (Diamond Springs) and 95636 (Grizzly Flats). Please note, data from ZIP codes 95675 (River Pines) and 95636 (Grizzly Flats) may be skewed due to small population size.

A study completed by the Marshall Medical Center Obstetrics Department in 2014 identified that 15.0% of mothers that delivered at Marshall in 2014 had a history of drug use. In addition, 10.2% of total deliveries in 2014 were to toxicology positive mothers and 5.9% of the babies also tested positive. Tetrahydrocannabinol (THC) was the number one identified substance, followed by methamphetamines and opiates. One key informant said, “*It’s quite shocking but we have some high rates of women presenting to deliver who have not received any prenatal care and are frequently substance abusers or users so that’s a very specific area that we would like to address better.*” (KI_4)

Seven out of eight primary data sources mentioned that the community struggles with substance abuse, particularly with alcohol, methamphetamines, marijuana, heroin, and opioid prescription drugs, especially among youth. One service provider explained, *“I know at least for the youth and teenagers, they have very easy access to drugs. And that’s kind of not talked about it a lot, but that’s a really big problem in the high schools.”* (KI_2) Many residents also expressed the need for more inpatient substance abuse treatment facilities in the Marshall HSA. One service provider stated, *“There are very few resources that are available [for substance abuse] and absolutely do not come close to meeting the needs.”* (KI_4).

Many residents seek episodic care in the emergency departments and community clinics. However, such lack of consistent intensive care results in a revolving door for many residents struggling with substance abuse. One key informant spoke about the need for improving provider sensitivity to the issue of substance use, *“With drug use...it’s an issue that providers aren’t stopping to ask how a client is doing and why they are using. We need to be more mindful about doing this.”* (KI_5)

A number of participants spoke about how substance abuse affects community cohesion and a perception of safety, as demonstrated in the quote below:

Drugs in the community are a big problem. Immigrant men and youth and adolescents tend to struggle with substance abuse more than the women. The drug use among youth and homeless make us feel unsafe and there is no social support for youth. (FG_3)

My grandson used to go to that skate park and he really liked it, but he said he wouldn’t go there without his dad going there because there was so many drugs. So he quit skating altogether. (FG_1)

In addition, participants spoke about the relationship between substance abuse, mental health and lack of access to care, as explained in the following quote:

I see a lot of self-medicating because they don't have insurance. I also see a lot of them on prescription cocktails that would blow your mind. That's what I think a lot of people do is, they're bipolar, the tribe is really sensitive to that and they self-medicate themselves because it's so hard to get to a doctor and they just start self-medicating themselves with illicit drugs and whatever they can...but waiting 30-40 days for a doctor's appointment versus drinking, they are self-medicating because nothing is available. (FG_2)

[Percent – Adults Reporting Excessive Alcohol Consumption](#)

Results of the national Center for Disease Control and Prevention Behavioral Risk Factor Surveillance System survey indicate that approximately 21.0% of respondents in El Dorado County report engaging in excessive alcohol consumption (more than 2 drinks per day for males and more than 1 per day for females), higher than the state rate at 17.2%.

[Rate – Liquor Store Access per 100,000 Population](#)

Data on liquor stores from the US Census Bureau for 2012 reveal that El Dorado County has 9.94 liquor stores per 100,000, slightly lower than the state rate of 10.02 per 100,000 population.

Percent – Home Expenditures Spent on Alcohol

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

Percent – Prevalence of Tobacco Usage

Data taken from the California Health Interview Survey for 2014 shows that the percent of smoking for adults and teens was 15.1% in El Dorado County, higher than the state at 10.8%.

Percent – Home Expenditures Spent on Tobacco

Tobacco expenditure data from Nielsen indicates the percent of at-home expenditures on tobacco at the census tract level. This indicator aggregated to the HSA level shows that the percent of expenditures for the Marshall HSA is 1.2% compared to the state percent at 1.0% for 2014.

Poor Nutrition and Physical Inactivity

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

Percent – Overweight and Obesity in Youth

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

Indicator	Percent Overweight	Percent Obese
El Dorado County	20.3%	15.6%
Marshall HSA	11.1%	17.0%
CA State	19.3%	19.0%

California Department of Education, 2013-2014

As the data presented in Table 23 indicates, the percent of overweight youth is slightly higher in El Dorado County in comparison to the state benchmark, but substantially lower in the Marshall HSA. The percent of youth experiencing obesity is higher in the Marshall HSA compared to the El Dorado County benchmark. Additionally, data by race and ethnicity indicated that in El Dorado County, 19.0% of White students are overweight, compared to 24.1% for Hispanic students. Unfortunately, overweight and obesity data are seldom available at the sub-county level in order to examine how rates compare within the Marshall HSA.

Active Living and Healthy Eating was the third prioritized health need for the Marshall HSA, mentioned in six out of the eight interviews. Primary data participants spoke specifically about youth obesity and the many factors that play into this health outcome. One resident said, *“There is a lot of greasy food served in the schools: pizza, fried chicken, donuts, so it’s very important for them to educate the kids on how to eat healthy. Nutrition education.”* (FG_3). The link between obesity and mental health was also made, as demonstrated in the following quote, *“Diet and exercise, lack of it, affects mental health as well. We see a lot of obesity and gestational diabetes.”* (KI_5)

Percent – Mothers Reporting Breastfeeding

Research indicates that when a child is breastfed, the risk for negative health conditions decreases; specifically, there is a reduction in the risk for infant mortality. According to data from the California Department of Public Health for 2012, the percent of mothers' breastfeeding their infants at birth was higher for El Dorado County at 96.9% compared to the state percent of 93.0%. Data by race and ethnicity in El Dorado County revealed that 100% of Blacks, 96.8% of Whites, 97.6% of Hispanic/Latinos, and 95.4% of Asians report breastfeeding.

Area – USDA Defined Food Desert

The USDA defines a food desert as: “urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food. Instead of supermarkets and grocery stores, these communities may have no food access or are served only by fast food restaurants and convenience stores that offer few healthy, affordable food options.”¹⁸ The lack of access to healthy food results in a poor diet and can lead to higher levels of obesity and other diet-related diseases, such as diabetes and heart disease. The USDA further describes a food desert as “a census tract with a substantial share of residents who live in low-income areas that have low levels of access to a grocery store or healthy, affordable food retail outlet.”¹⁹ Figure 10 identifies the food deserts in the Marshall HSA.

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

¹⁹ Ibid.

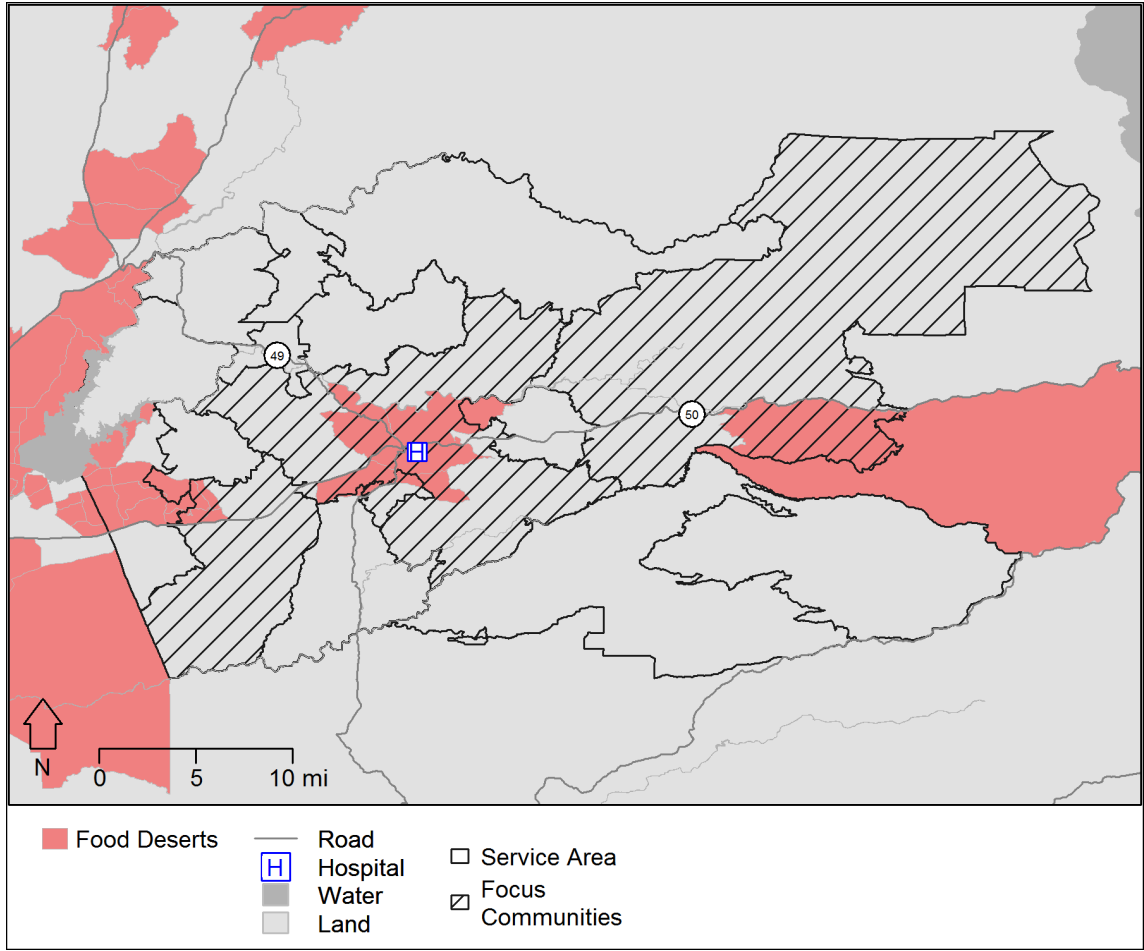


Figure 10: USDA Defined Food Deserts

As shown in Figure 10, portions of four Marshall HSA ZIP codes are designated as USDA food deserts. These ZIP codes include 95623 (Kingsville/Nashville) and the three focus communities of 95619 (Diamond Springs), 95667 (Placerville) and 95682 (Shingle Springs/Cameron Park).

Percent – Population with Food Insecurity and Receiving Supplementary Nutrition Assistance Program
 According to Feeding America, the percentage of population with food insecurity in 2013 for El Dorado County was lower than the state percent. Moreover, the percentage of population receiving SNAP (Supplementary Nutrition Assistance Program) benefits in 2011 was substantially lower for El Dorado County compared to the state percent.

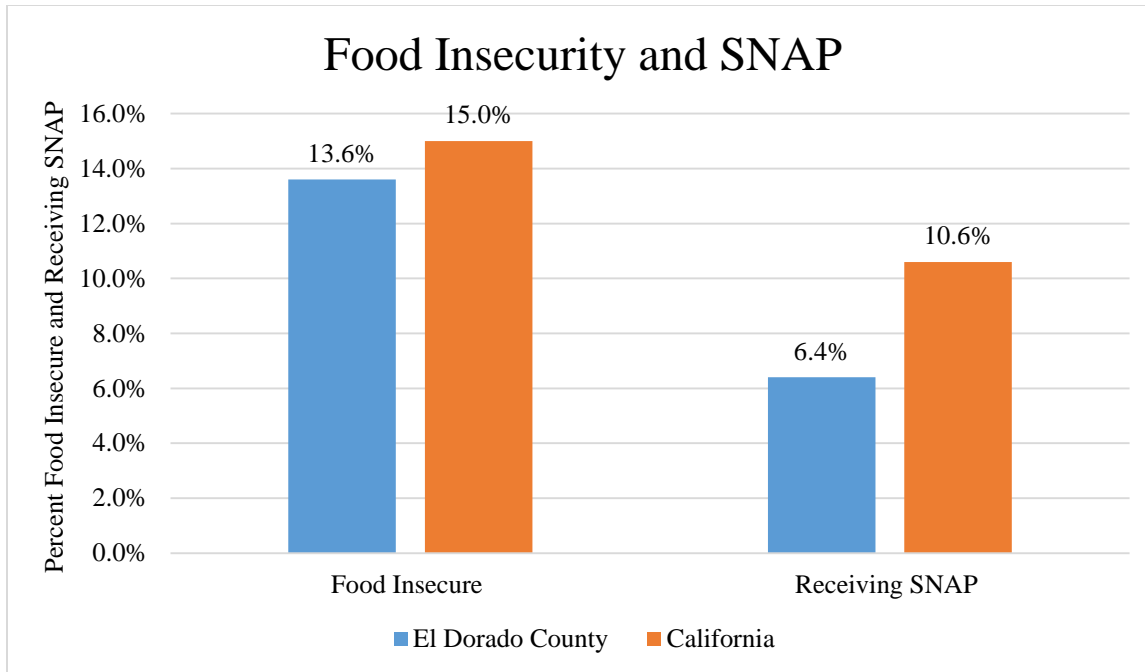


Figure 11: Percent Food Insecure and Percent Receiving SNAP

Index – Modified Retail Food Environment Index (mRFEI)

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

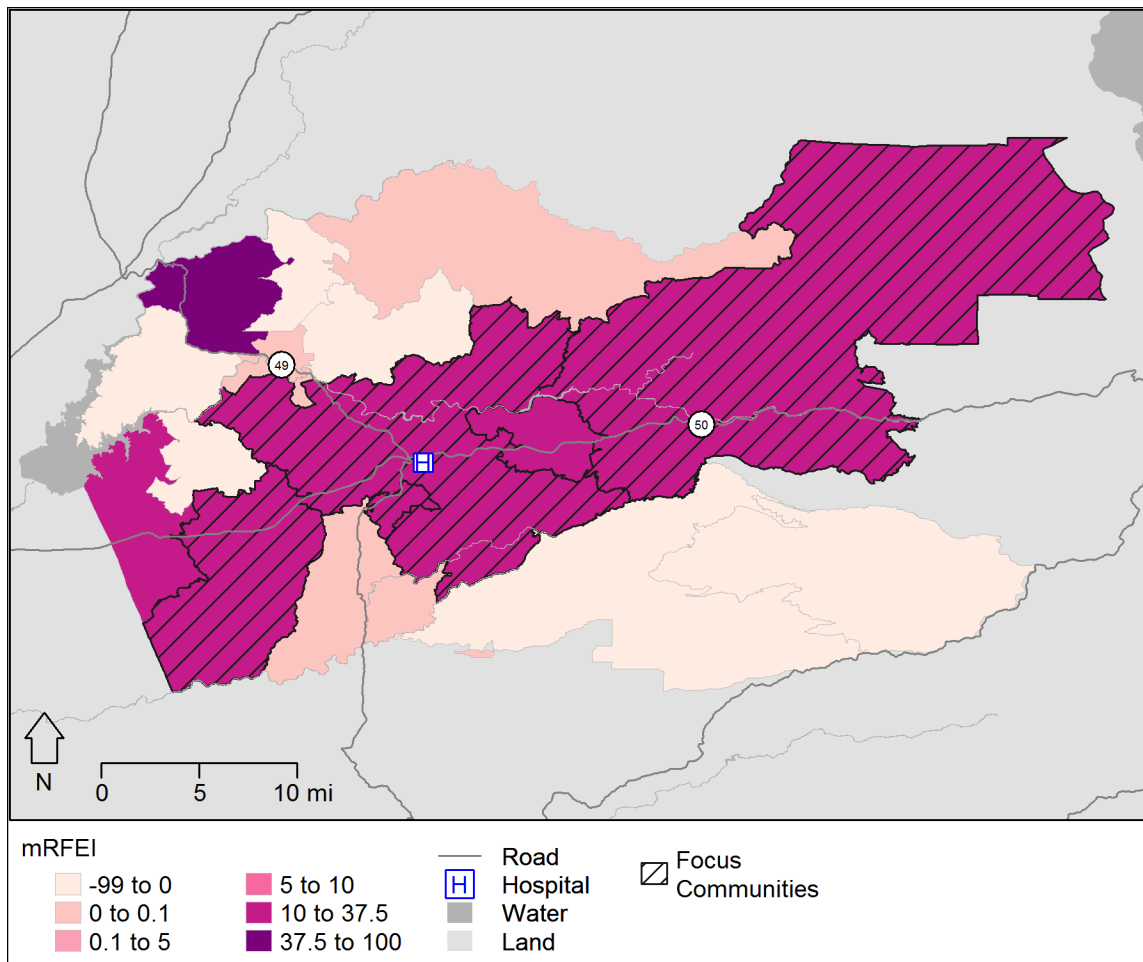


Figure 12: Modified Retail Food Environment Index (mRFEI)

As shown in Figure 12, many ZIP codes in the Marshall HSA have lower mRFEI scores, indicating poor or no access to healthy foods. Most notable to mention are the rural ZIP codes of 95633 (Garden Valley), 95635 (Greenwood), 95636 (Grizzly Flats), 95664 (Pilot Hill), 95672 (Rescue), and 95684 (Somerset). Please note, data from ZIP codes 95635 (Greenwood) and 95664 (Pilot Hill) may be skewed due to small population size.

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

According to business data reported by the US Census Bureau, the rate of fast food restaurants for the Marshall HSA was 48.58 per 100,000 population, substantially lower than the state rate of 74.51 per 100,000 population. Additionally, the rate of grocery stores for the Marshall HSA was 15.31 stores per 100,000, lower than the state rate of 21.51 stores per 100,000.

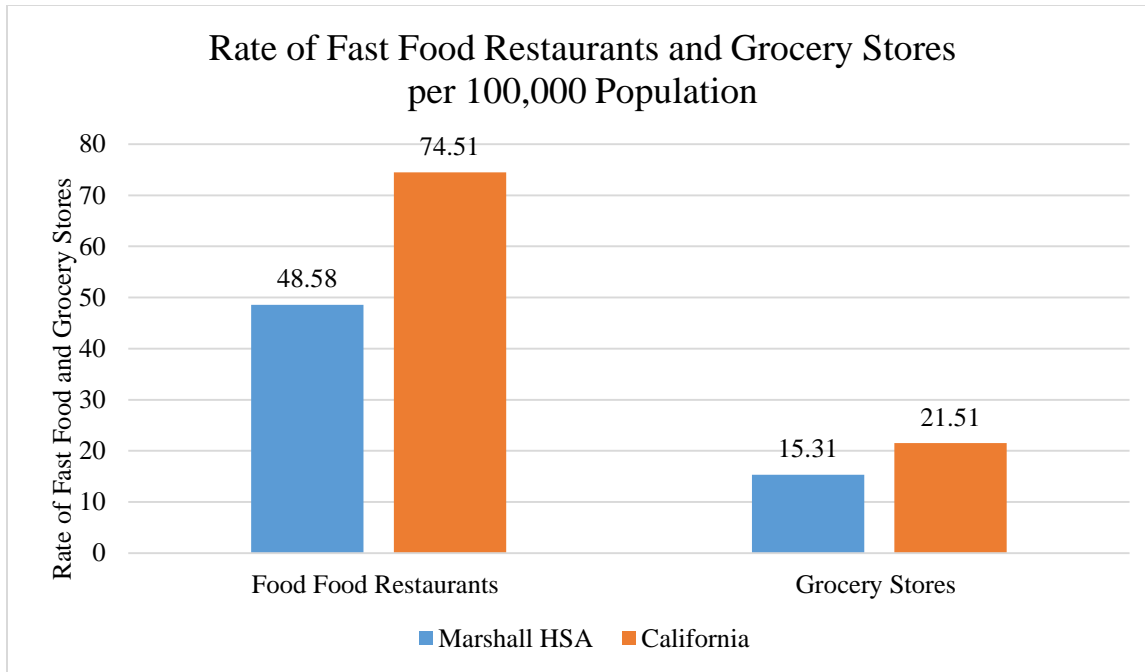


Figure 13: Fast Food Restaurants and Grocery Stores per 100,000 Population

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

Data from the 2011-2012 California Health Interview Survey indicated that 51.3% of youth in El Dorado County report eating less than five servings of fruits and vegetables daily, above the state rate at 47.4%. Examination by race and ethnicity showed that in El Dorado County, 58.3% of youth who are White report eating less than five servings a day, compared to Hispanic/Latino youth at 18.2%.

Percent – Home Expenditures Spent on Fruits and Vegetables and Soda

Data from Nielsen for 2014 show the percent spent for fruits and vegetables for the Marshall HSA was 13.2%, lower than the state percent at 14.1%. However, the inverse is true for soda expenditures. The soda expenditure percent is 3.9%, higher than the state percent of 3.6%.

Percent – Physical Inactivity for Adults and Youth

Indicators that examine physical activity in the Marshall HSA are very hard to find. In 2012, the Centers for Disease Control (CDC) reported that the percent of adults over the age of 20 indicating they perform no regular physical activity for the Marshall HSA was 13.6%, lower than the state rate of 16.6%. Physical inactivity for youth in the Marshall HSA, as reported using the FitnessGram Physical Fitness Test, was also lower than the state. There were 21.7% of youth in grades 5, 7, and 9 classified as physically inactive, compared to the state percent of 35.9%. Examination of youth physical inactivity by race and ethnicity in El Dorado County revealed that while 22.0% of Whites were classified as physically inactive, 31.6% of Blacks, 16.0% of Asians, 39.2% of Hispanic/Latinos and 22.4% of non-Hispanic multiple race were classified as physically inactive.

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

communities to allow more people to walk and bike safely. One resident described how recreational opportunities for youth can be cost prohibitive:

It's kind of elitist. It seems like there's nothing for kids to do. Just to go out and play baseball, basketball and stuff like that and all the recreational sports are all organized and we have to pay for it. It costs quite a bit of money. And it's almost like in some places you can't use this, the fields and stuff. I think that they should make it more of a community recreation instead of so elitist where you have to pay an arm and a leg to join a team. (FG_1)

Other residents articulated how perceived safety can prevent them from getting needed physical activity.

There is a lot of drug activity in the parks, it's common to find needles. This is where kids and families go to play and exercise, and when we don't feel safe I think it impacts our health. It also happens on our local walking trails. There are often homeless people and a lot of safety concerns about that, with people who have mental health problems...but we rely on these places for physical activity. (KI_5)

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

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

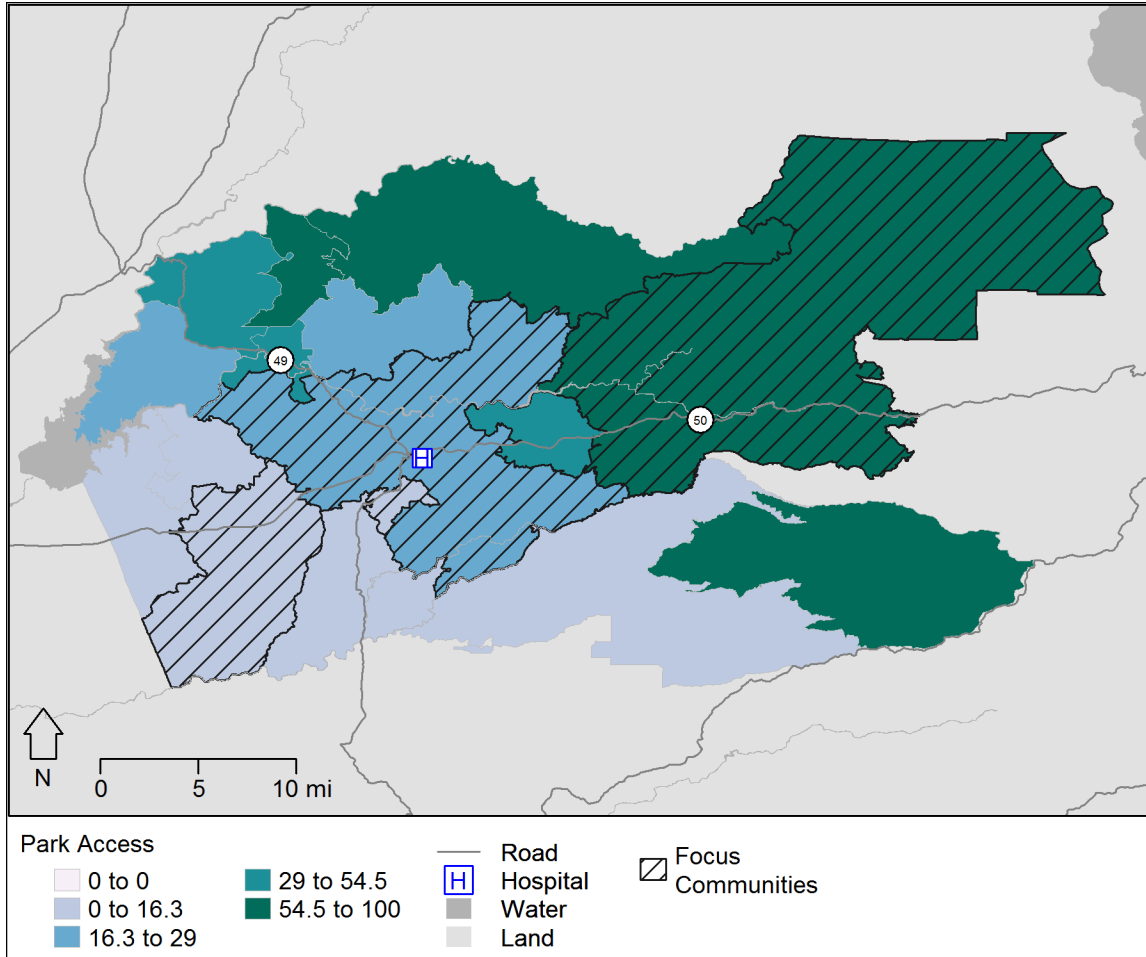


Figure 14: Percent of Population by ZIP Code that Live within One-Half Mile of a Park

As displayed in Figure 14, access to a park varies among the ZIP codes. ZIP codes 95619 (Diamond Springs), 95623 (Kingsville/Nashville), 95672 (Rescue), 95675 (River Pines) and 95682 (Shingle Springs/Cameron Park) have the lowest percent of population with access to a park in their community. Having access to a park or physical space where people of all ages can engage in play and be physically active is important for overall health and wellbeing. Please note, data from ZIP code 95675 (River Pines) may be skewed due to small population size.

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

Rate – Teen Births to Women Under the Age of 20

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

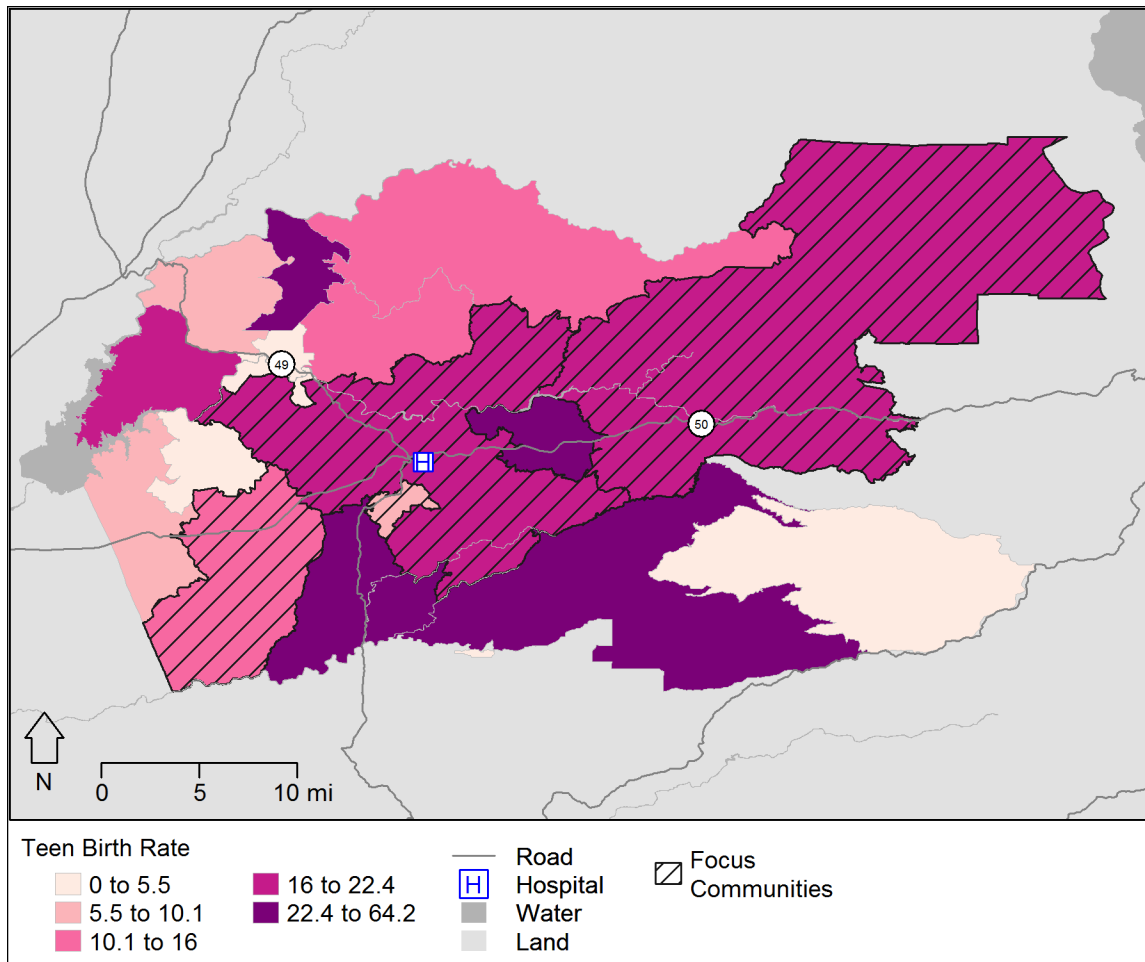


Figure 15: Teen Birth Rate for 15-19 Year-Olds per 1,000 Live Births

Two of the 17 Marshall HSA ZIP codes had teen birth rates over the national rate of 26.5 per 1,000 live births, while eight ZIP codes had rates over the county rate of 12.80 teen births per 1,000 live births. The ZIP codes with the highest rates included 95684 (Somerset) at 64.12 per 1,000, 95623 (Kingsville/Nashville) at 27.04 per 1,000, and 95709 (Camino/Apple Hill) at 24.19 per 1,000 live births.

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

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

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

Rates – Chlamydia and Gonorrhea Incidence

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

STI Incidence	ZIP Code	Chlamydia Incidence	Gonorrhea Incidence
		95614	--
	95619*	14.31	--
	95623	12.78	--
	95633	17.44	--
	95634	--	--
	95635†	--	--
	95636†	--	--
	95651†	--	--
	95664†	--	--
	95667*	15.31	3.62
	95672	--	--
	95675†	--	--
	95682*	20.62	2.03
	95684	--	--
	95709	--	--
	95726*	13.48	--
	95762	13.47	1.71
	<i>El Dorado County</i>	17.02	2.65
	<i>CA State</i>	45.34	11.68

Source: El Dorado County Public Health, 2014

*Indicates Focus Community; † Indicates small population size

Incidence rates for chlamydia were higher than the county benchmark in two Marshall HSA ZIP codes, with the highest rate in Focus Community 95682 (Shingle Springs/Cameron Park), where 20.62 new cases occur per 10,000 population. Incidence rates for gonorrhea are higher than the county benchmark in Focus Community 95667 (Placerville), where 3.62 new cases occur per 10,000 population, exceeding both the county rate.

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

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

	ZIP Code	ED visits STIs	Hospitalizations STIs	ED visits HIV/AIDS**	Hospitalizations HIV/AIDS**
	Sexually- Transmitted Infections	95614	1.04	--	--
95619*		2.00	1.47	1.32	--
95623		2.60	1.13	1.72	--
95633		6.44	5.70	5.45	2.94
95634		2.17	--	1.12	--
95635 [†]		--	--	--	--
95636 [†]		3.62	6.78	3.27	6.60
95651 [†]		--	13.73	--	13.97
95664 [†]		--	5.46	--	--
95667*		1.22	1.32	0.66	0.21
95672		--	--	--	--
95675 [†]		4.54	--	--	--
95682*		1.39	0.73	0.81	0.14
95684		1.38	1.49	1.23	--
95709		0.85	3.47	--	2.11
95726*		1.59	2.00	0.81	0.47
95762		0.28	0.37	--	0.11
Marshall HSA		1.26	1.27	0.73	0.46
<i>El Dorado County</i>		1.31	1.31	0.81	0.65
<i>CA State</i>		3.20	4.58	1.95	3.36

Source: OSHPD, 2011-2013

**HIV/AIDS is considered a subcategory of STIs in the ICD 9 diagnostic codes.

*Indicates Focus Community; [†] Indicates small population size

As indicated in Table 25, nine Marshall HSA ZIP codes had STI-related ED visit and hospitalization rates that exceeded the county benchmark. ZIP code 95633 (Garden Valley) had the highest rate of ED visits for STIs, while 95651 (Lotus) had the highest rate for STI-related hospitalizations. Rates of HIV-related ED visits exceeded county benchmarks in six ZIP codes, while HIV-related hospitalizations were elevated in four ZIP codes. The highest rate of HIV-related ED visits was in 95633 (Garden Valley), where 5.45 visits occurred per 10,000 population, substantially higher than the county rate of 0.81 visits per 10,000 people. The highest rate of hospitalizations for HIV was in 95651 (Lotus), where 13.97 hospitalizations occurred per 10,000 population, nearly 20 times the county benchmark. Two ZIP codes, 95633 (Garden Valley) and 95636 (Grizzly Flats) had elevated in all four categories presented in Table 25. Please note, data from ZIP codes 95636 (Grizzly Flats) and 95651 (Lotus) may be skewed due to small population size.

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

The CDC reported that for 2010, the prevalence of HIV/AIDS in the Marshall HSA was 89.7 cases per 100,000 population, substantially lower than the state at 363.0 cases per 100,000 population. Data by race and ethnicity for HIV/AIDS prevalence in El Dorado County showed that Whites had 90.38 cases per 100,000, compared to Hispanics/Latinos at 122.96 cases per 100,000 population.

Percent – Adults Never Screened for HIV

Data from the national Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System survey for 2011-2012 indicates that as many as 59.2% of respondents between 18-70 years of age in El Dorado County report never being screened for HIV, lower than the state percent of 60.8%.

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

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

Physical Environment

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

Percent – Households with No Vehicle

Having access to a vehicle is an important factor in the determination of a person's ability to access the things they need to stay healthy. A working vehicle means the ability to get to work, to the grocery store, to school, and to access health care. Figure 17 shows the percent of households with no vehicle in the Marshall HSA, which is particularly an issue for low-income families. Having no access to a vehicle, especially if there aren't reliable public transportation options, may significantly affect access to other resources, as explained in the following quote:

The individuals that are struggling to maintain a job and struggling to meet the essentials of their family, they're going to have transportation issues and they're going to have time issues. The time issues are going to be related to the fact that maybe if they are a two parent family, that the two parents have multiple jobs, which is not unusual in the Hispanic community. Specifically for the Hispanic community, it's not unusual for one vehicle to be available and the husband has sole primary use of that vehicle. So, Mom often is left with the kids without any effective means of transportation, as we see happen kind of over and over again. If we move outside of the Hispanic community, we have the same issue with the other ethnicities. So, there's a philosophical undercurrent in El Dorado County that basically says, if you can't pull your boots on by your bootstraps, you don't belong here. (KI_2)

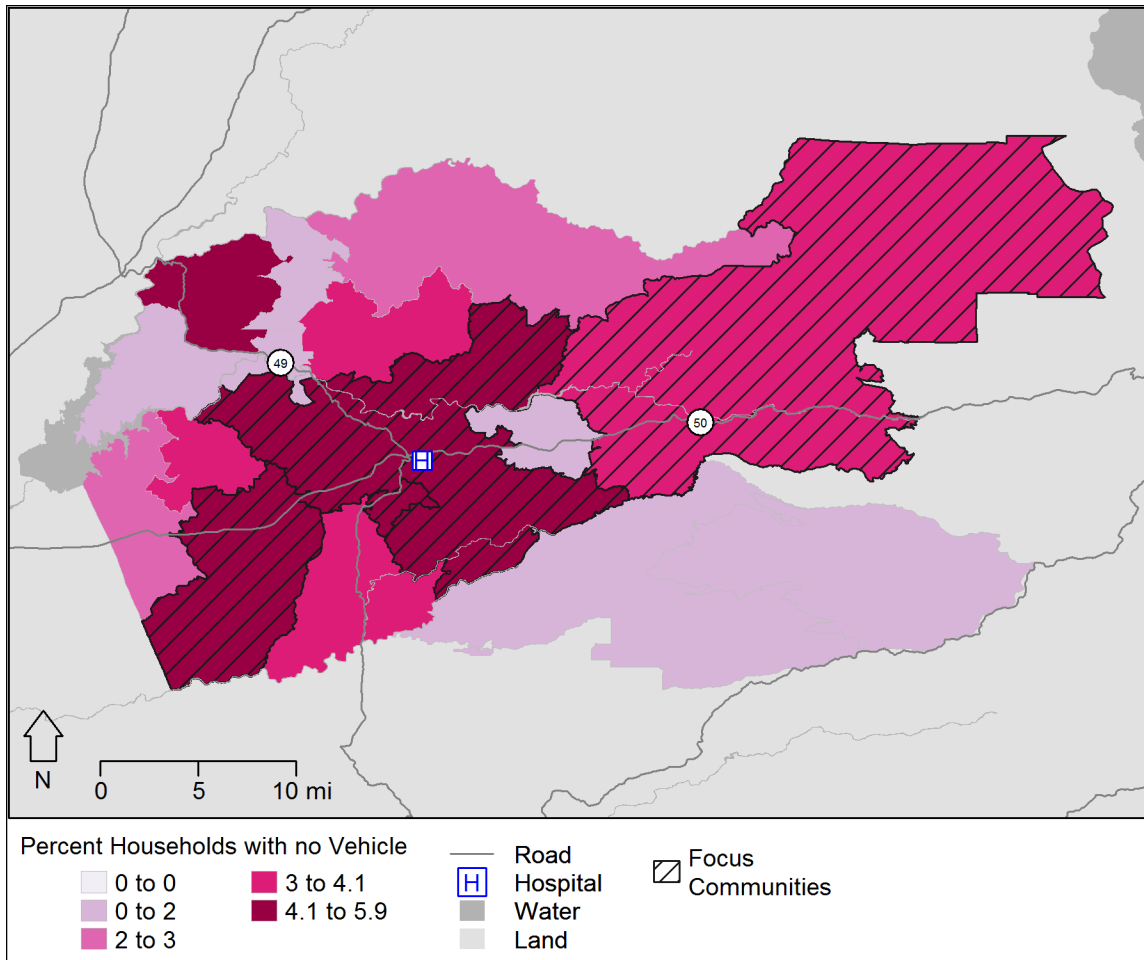


Figure 16: Percent Households with No Vehicle

The percent of households with no vehicle for El Dorado County is 4.5%, below the state percentage of 7.8%. As Figure 17 shows, the Focus Communities of 95619 (Diamond Springs) and 95667 (Placerville) had the highest percentages of households with no vehicles, at 5.8% and 5.9%, respectively, followed by 95682 (Shingle Springs/Cameron Park) at 4.4%.

Lack of safe and affordable transportation was mentioned as a barrier for Marshall HSA residents, and was the fifth prioritized health need. Transportation was mentioned as a barrier to accessing health care, healthy foods, employment, and education. Participants, especially those in the rural parts of the county, stated that the current public transportation system within the Marshall HSA can be inaccessible, expensive, and sometimes very slow. One resident said, “*The transportation system isn’t good here, the bus only runs once or twice a day, making it a whole day’s worth of time to bus anywhere for anything.*” (FG_3)

Other participants spoke about transportation as a major barrier to accessing health care services, especially for low-income individuals. As one community member stated:

It’s really rural out in some places and there’s a lot of poor people and it might be that they could provide some sort of transportation like take a bus to them, just so that they can get to the hospital and back home or whatever just for checkups or whatever. (FG_1)

Percent – Workers that Commute More than 60 minutes to Work

Long commute times are associated with increased likelihood of being overweight, higher blood pressure, increased stress and neck pain, exposure to more pollution, and other negative health effects.²¹ Figure 18 displays the percent of workers in each Marshall HSA ZIP code which commute more than 60 minutes to work.

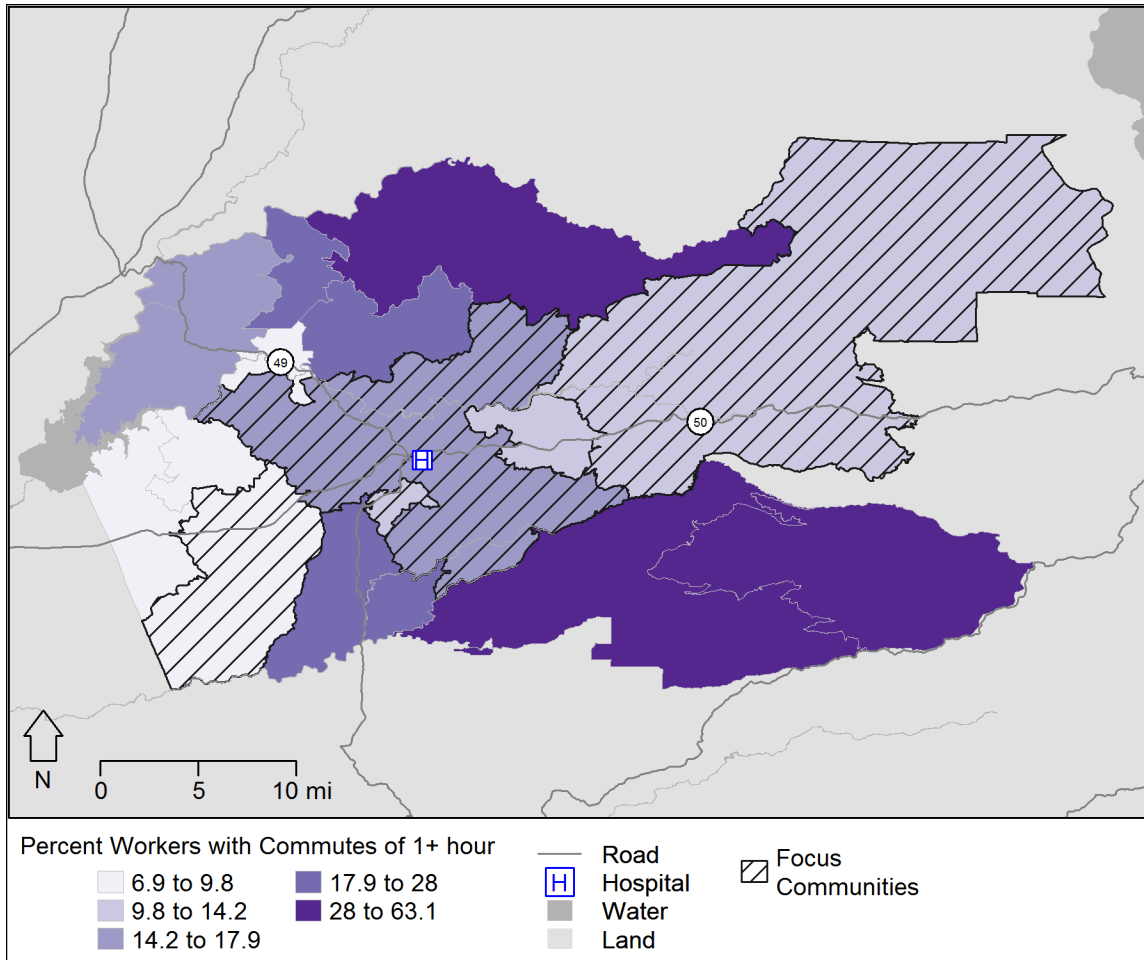


Figure 17: Percent Workers with Commutes of 1+ Hour

The three Marshall HSA ZIP codes with the highest percentage of residents commuting more than 60 minutes to work include: 95675 (River Pines) at 63.1%, 95684 (Somerset) at 55.9%, 95634 (Georgetown) and at 37.6%, in comparison to the county at 13.5% and the state at 10.1%. Please note, data from ZIP code 95675 (River Pines) may be skewed due to small population size.

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

Data from the US Census Bureau indicated that 78.8% of respondents in the Marshall HSA over the age of 16 years old reported commuting to work alone, higher than the state percent of 73.2%. The Census data also indicated that 1.2% of Marshall HSA respondents stated that they walk or bike to work, lower than the state percent of 3.8%.

²¹ MacMillan, A. (2015). Five ways your commute is hurting your health. Retrieved from: <http://news.health.com/2015/03/31/5-ways-your-commute-is-hurting-your-health/>

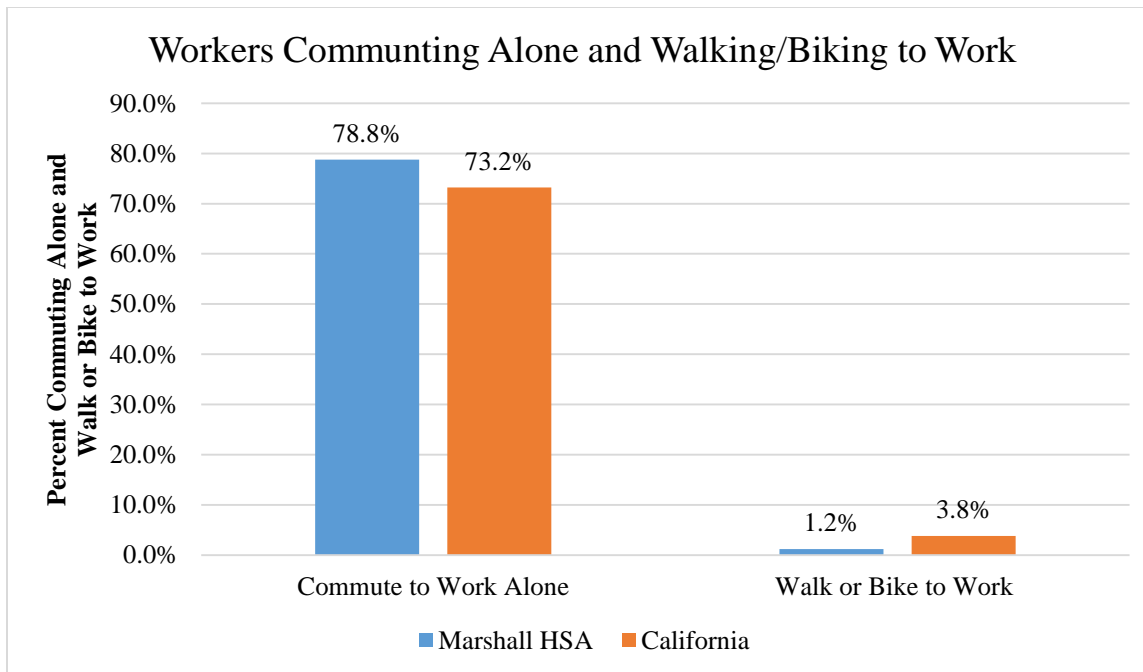


Figure 18: Percent of Workers Commuting to Work Alone and Walking or Biking to Work

Rate – Road Density Network per Square Mile

Examination of road network density revealed that El Dorado County has more roads per square mile than the state. The number of roads per square mile for El Dorado County is 3.36, compared to the state rate of 2.02 roads per square mile. Increased road density is related to increased exposure to vehicle emissions and other environmental pollutants which negatively impact health.

Area – Fatal Traffic Accidents

Data from the National Highway Traffic Safety Administration showed that the Marshall HSA ZIP codes with elevated numbers of fatal traffic accidents included: 95667 (Placerville), 95672 (Rescue), 95726 (Pollock Pines) and 95762 (El Dorado Hills). The ZIP code of 95667 (Placerville) had the most with six accidents in 2013, followed by 95726 (Pollock Pines) and 95762 (El Dorado Hills) both with four. Though it can be expected that fatal traffic accidents are more likely to occur on major highways, fatal traffic accidents in residential communities help to illuminate safety issues in the area. ZIP code 95667 (Placerville) is a heavily residential area, yet had the highest number of fatal traffic accidents.

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

The rate of fatal motor vehicle accidents, as reported by the California Department of Public Health for 2010-2012, showed that the Marshall HSA rate of fatal accidents was 2.80, below the state rate of 5.18 per 100,000 population. Fatal accidents involving a pedestrian (motor vehicle killed a pedestrian) was 0.92, below the state rate of 1.97 per 100,000 population.

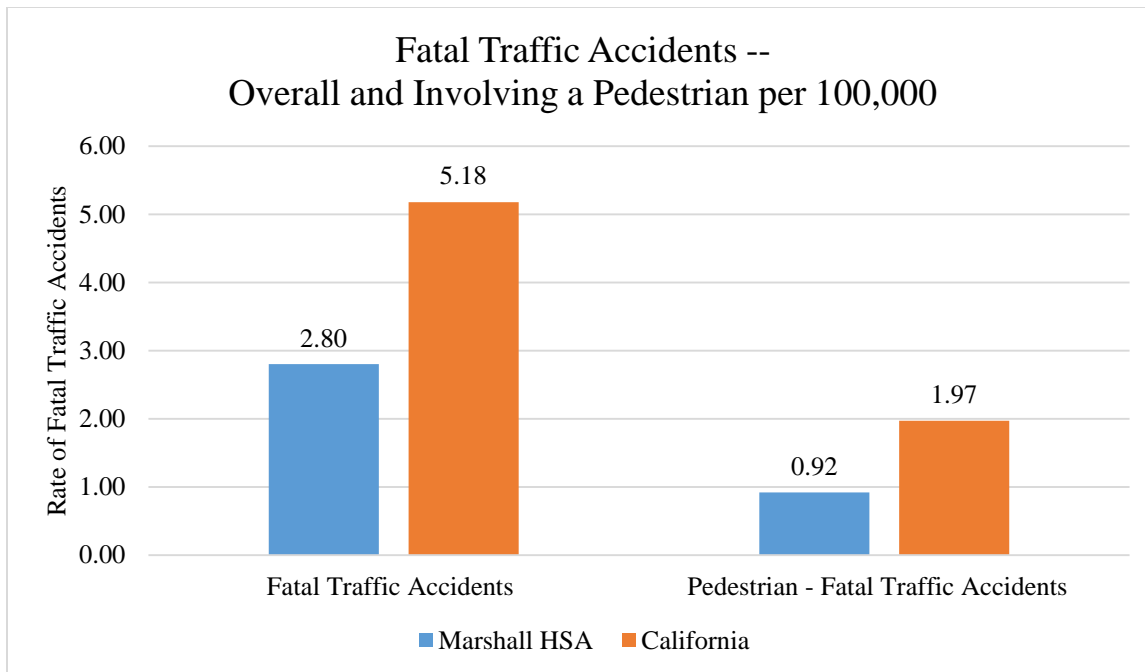


Figure 19: Rate of Fatal Accidents Overall and Involving a Pedestrian

Key informants spoke about a concern about traffic accidents and the built environment in many areas within the Marshall HSA. One big issue of concern was the lack of sidewalks and proper lighting for pedestrians, especially in the more rural areas, or in places where a lot of older adults live. The following quotes demonstrate some of the safety concerns:

We have very limited sidewalks, the roads are narrow and windy, walking on a side of a road can be a hazard including biking on the side of the road so that infrastructure is more difficult to do...even if somebody wanted to walk and bike in the evening there's virtually no outside lighting so I would not recommend it. (KI_4)

In addition, some residents talked about the connection between substance abuse and traffic safety. For example, “Not to mention all the crazy drivers. You can really tell who’s on meth. You do have to be careful driving up here. You really got to be alert.” (FG_1)

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

Stable, clean and affordable housing is an essential public health need. The lack of a stable place to live can have negative health effects on individuals and families, making it hard to manage daily life responsibilities.²² Table 26 shows rates for various housing indicators by ZIP code as an indicator of housing stability.

²² John Hopkins University. (2016). Stable Housing. Retrieved from: http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-to-eliminate-cardiovascular-health-disparities/about/influences_on_health/stable_housing.html

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

ZIP Code	Percent Housing Vacancy	People per Housing Unit	Percent Renting
95614	12.1	2.75	14.6
95619*	8.8	2.65	23.6
95623	7.1	2.52	28.9
95633	19.2	2.54	22.4
95634	20.1	2.66	21.6
95635†	27.5	2.28	17.4
95636†	32.7	3.21	0.0
95651†	31.6	2.47	26.9
95664†	4.4	2.77	7.3
95667*	10.4	2.46	26.2
95672	10.2	2.91	7.9
95675†	34.6	2.52	34.2
95682*	7.8	2.73	25.7
95684	24.9	2.08	13.9
95709	8.6	2.51	22.5
95726*	22.9	2.58	17.1
95762	3.8	3.01	14.2
<i>El Dorado County</i>	23.1	2.64	25.2
<i>CA State</i>	8.6	2.94	44.7

Source: Census, 2013

*Indicates Focus Community; † Indicates small population size

Percentages of housing vacancy exceeded the county benchmark in five of the Marshall HSA ZIP codes, which was substantially higher than the state benchmark of 8.6%. High vacancy rates are indicators of housing market conditions²³, specifically the affordability of housing in the area. The number of people per housing unit is an indicator of multiple people living together, which can be an indicator of poverty. People-per-housing-unit rates exceeded the county benchmark in eight of the ZIP codes, with the highest rate in 95636 (Grizzly Flats) at 3.21 people per housing unit. A large number of renters in a given geographical area can be an indicator of the area’s economic stability as well as housing costs. Five of the ZIP codes exceeded the county and state benchmarks for the percentage of renters, with the highest percent in 95675 (River Pines), where 34.2% of residents were renting their homes. Please note, data from ZIP codes 95675 (River Pines) and 95636 (Grizzly Flats) may be skewed due to small population size.

Key informant and focus group participants spoke about housing insecurity and the high cost of housing in areas throughout the Marshall HSA, especially in lower income communities where job related skills and employment are also lacking. As one key informant explained, “*Yeah, low-rent housing is impossible. It doesn’t exist or there’s a waiting list for it. Affordable housing is a huge issue.*” (FG_1)

Though many community members spoke about housing challenges, a common theme was the need to address the availability of safe, permanent housing for vulnerable individuals, particularly in the Focus

²³ Belsky, E.S. (n.d.) *Vacancy rates: A policy primer*. Housing Policy Debate, vol 3(13), 793-814. Retrieved from: <http://content.knowledgeplex.org/kp2/img/cache/kp/2627.pdf>

Community of Placerville, where many individuals experiencing homelessness live. The following quotes demonstrate some of the concerns around this topic:

We've been trying to build a homeless center over a decade and they don't want it...because no one wants it in their backyard. We talked them into doing a camp in downtown Placerville, and that didn't work. Got it all done, they decided that wasn't good. They went and stripped them all out and threw them all back out on the streets. So that's a big issue going on right now is the homeless population because there is no place for them to go. The housing in the churches, different churches will pick them up and take them there ... (FG_2)

...it's just six churches. You go to a different church every night and then no church on day 7, whatever day that is. And its freezing cold all day so they're out in it. Seven days of shelter would be nice. They only have six. (FG_1)

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

The United States Department of Housing and Urban Development (HUD) reported in 2013 that the total number of HUD-funded housing units in El Dorado County was 99.14 units per 10,000 housing units, substantially below the state rate of 368.32 units per 10,000. This is an important indicator as access to affordable housing impacts a person's economic stability and ability to access other basic needs such as health care, affordable healthy foods, and places to be physically active.

Percent – Households with at Least One Substandard Housing Condition

HUD also reports that in 2013, the percent of households defined as substandard was 41.6% in El Dorado County, lower than the state percent at 48.4% of households.

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

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

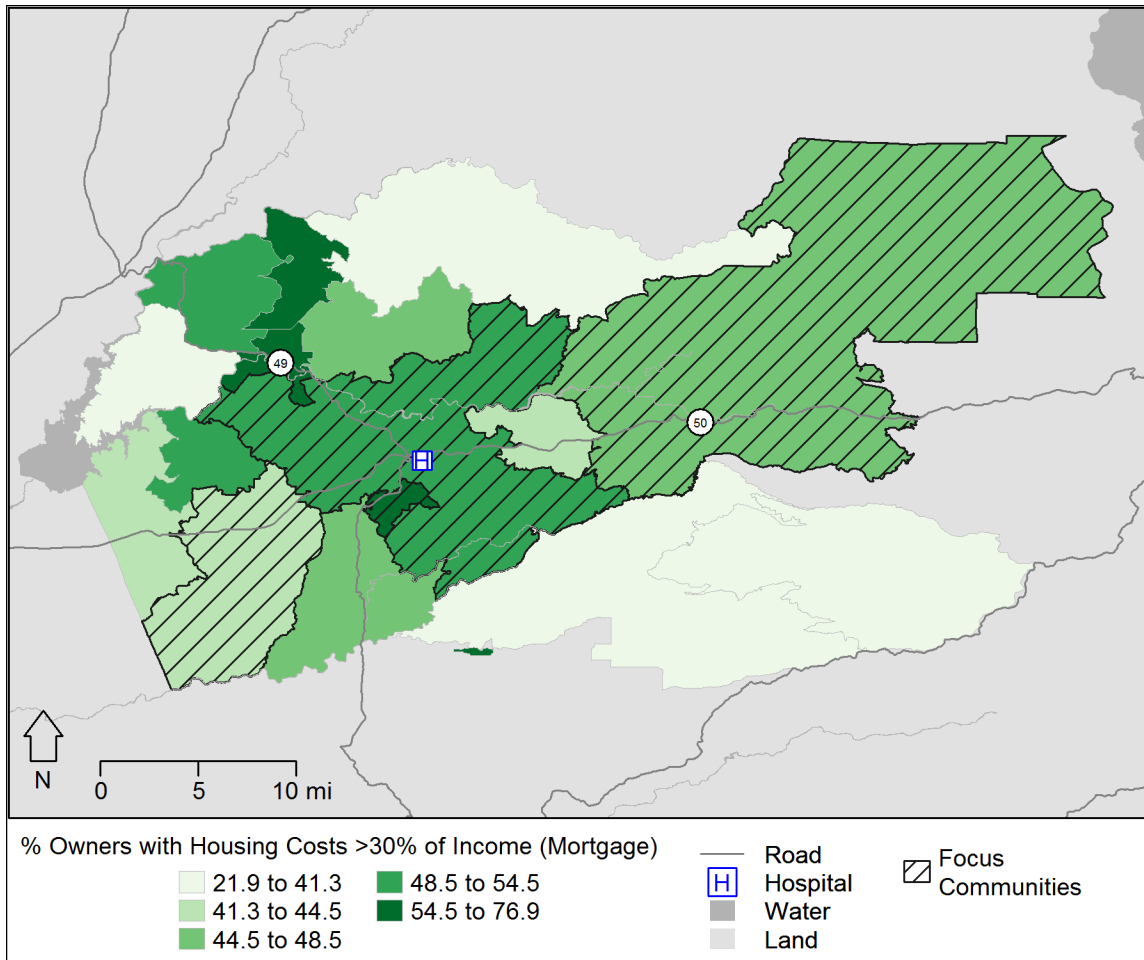


Figure 20: Percent of Residents by ZIP Code with Housing Costs above 30% of their Household Income with a Mortgage Payment

Four of the Marshall HSA ZIP codes fell into the highest category of residents with a housing mortgage cost of greater than 30% of household income. These ZIP codes include 95619 (Diamond Springs) at 63.7%, 95635 (Greenwood) at 76.9%, 95651 (Lotus) at 57.0% and 95679 (River Pines) at 54.9%, in comparison to the county at 47.4% and the state at 48.1%. Please note, data from ZIP codes 95675 (River Pines) and 95635 (Greenwood) and 95651 (Lotus) may be skewed due to small population size.

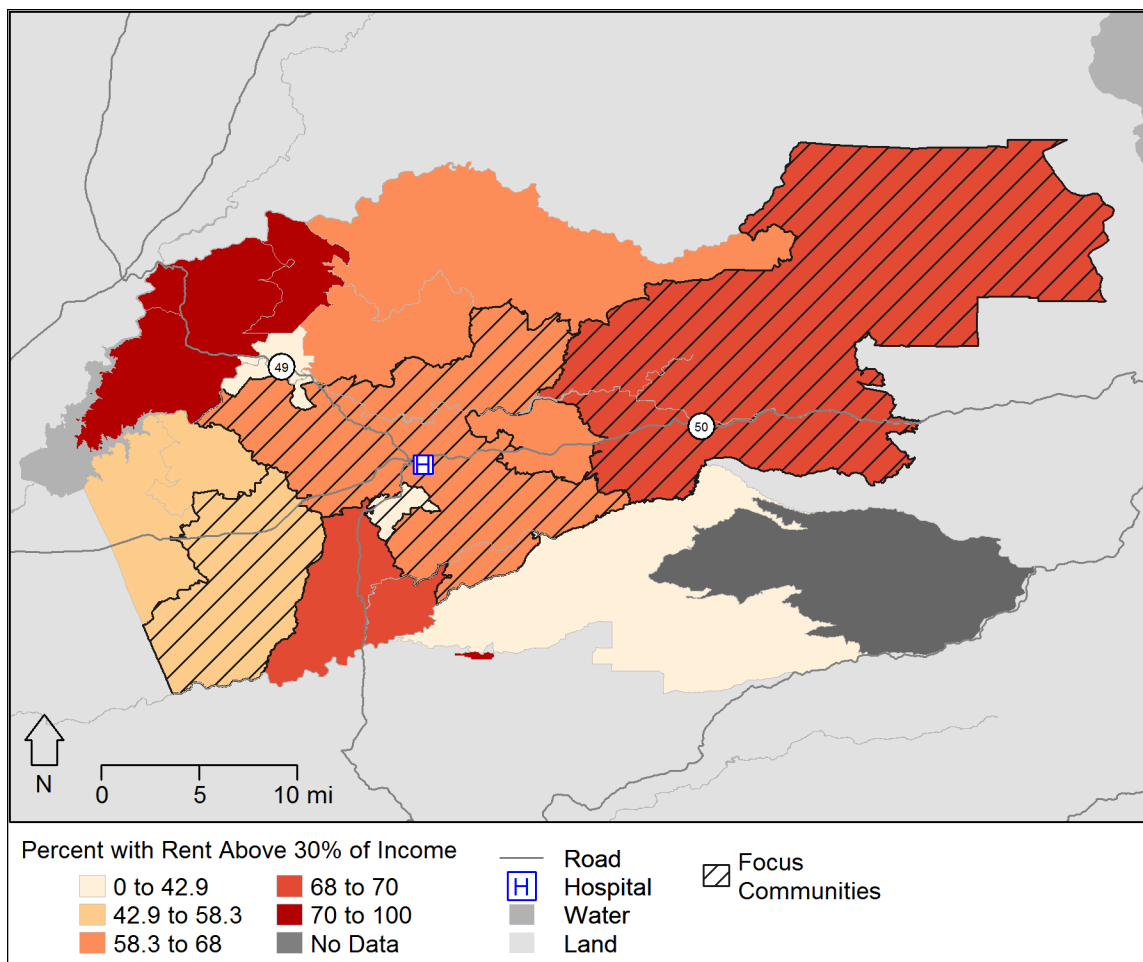


Figure 21: Percent of Residents by ZIP Code with Housing Rental Costs above 30% of their Household Income

All but five of the Marshall HSA ZIP codes had a high percent of residents with rent above 30% of their income. This was especially true for the ZIP codes of 95635 (Greenwood) and 95675 (River Pines), which showed that 100% of residents spend above 30% of their income on housing rental costs. The ZIP codes of 95664 (Pilot Hill) and 95614 (Cool) also had a high percent of residents with high rental costs, at 75.9% and 70.0% respectively. Please note, data from ZIP code 95664 (Pilot Hill) may be skewed due to small population size.

Index – Pollution Burden Score

The California Environmental Protection Agency and the Office of Environmental Health Hazard Assessment developed the *California Communities Environmental Health Screening Tool, Version 2.0*.²⁴ This tool was designed to identify California communities that are disproportionately burdened by multiple sources of pollution. The tool combines 13 types of pollution, environmental factors to produce a “pollution burden” score for each census tract in the state ranging between a minimum of 0 and a maximum of 100, with higher scores indicating a greater pollution burden. The pollution factors included ozone and PM_{2.5} concentrations, diesel PM emissions, pesticide use, toxic releases from facilities, traffic

²⁴ *California Communities Environmental Health Screening Tool, Version 2.0 (CalEnviroScreen 2.0). Guidance and Screen Tool*. October 2014. Retrieved from: <http://oehha.ca.gov/ej/pdf/CES20FinalReportUpdateOct2014.pdf>

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

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

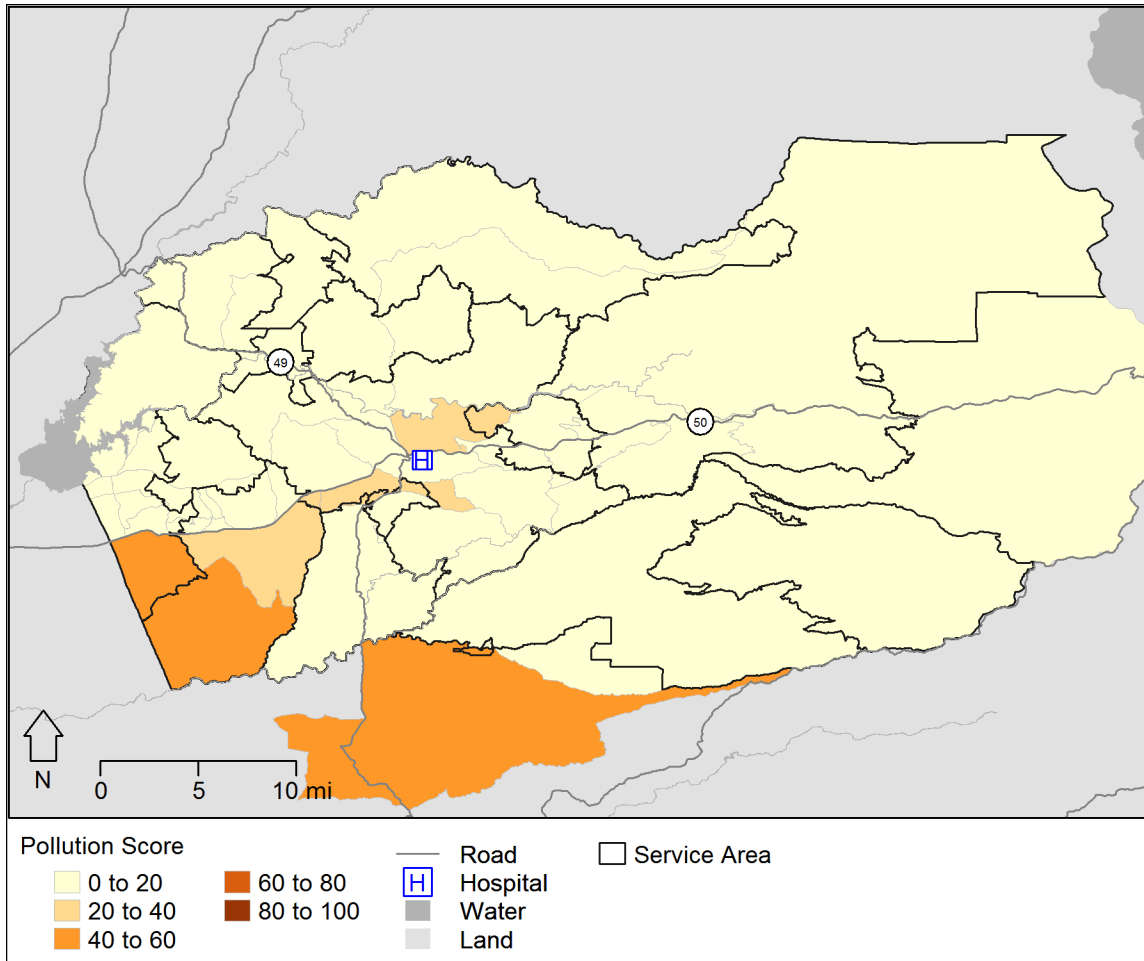


Figure 22: Pollution Burden Score by Census Tracts in the Marshall HSA

Figure 23 shows that portions of ZIP codes 95762 (El Dorado Hills) and 95682 (Shingle Springs/Cameron Park) and most of 95675 (River Pines) had a pollution burden score in the third highest quintile, from 40-60. Portions of ZIP codes 95619 (Diamond Springs), 95667 (Placerville) and 95709 (Camino/Apple Hill) had census tracts with scores in the fourth highest quintile, from 20-40. Exposure to pollution contributes to the high rates of respiratory illness mentioned previously in this report.

Primary data participants spoke about issues of pollution from vehicles and smoke from wildfires. One focus group participant said, “*There’s a lot of air pollution at certain times of the year. It backs up against the hills.*” (FG_1)

Social Environment

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

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

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

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

Police Municipality	Major Crimes*	Violent Crime	Property Crime	Arson	Domestic Violence
Placerville	343.83	60.68	283.16	--	50.08
South Lake Tahoe	327.77	54.08	272.75	0.93	84.39
El Dorado County Sherriff	174.86	14.15	160.44	0.27	62.42
El Dorado County	202.67	21.55	180.79	0.33	64.32

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

Table 27 indicates that major crime rates reported for Placerville and South Lake Tahoe jurisdictions are noticeably higher than the El Dorado County estimated major crime rate. The highest rates of violent crime occurred in Placerville, where the rate was nearly three times the county benchmark. Rates of property crime were also highest in the Placerville jurisdiction at 283.16 incidents per 10,000 population. Rates for arson and domestic violence were lower in the Placerville jurisdiction than the county benchmark.

Lack of safe and violence-free communities was mentioned as a significant barrier for Marshall HSA residents, and is the second prioritized health need. Seven of the eight sources mentioned that community safety is compromised with the use and abuse of alcohol and other drugs.

In addition, many comments were made about the connection between perceived safety, drug use, mental health, and active living, for example, “My grandson used to go to that skate park and he really liked it, but he said he wouldn’t go there without his dad going there because there was so many drugs. So he quit skating altogether. (FG_1). Another community member said:

There is a lot of drug activity in the parks, it’s common to find needles. This is where kids and families go to play and exercise, and when we don’t feel safe I think it impacts our health. It also happens on our local walking trails. There are often homeless people and a lot of safety concerns about that, with people who have mental health problems...but we rely on these places for physical activity. We have a bike trail, it’s about 3 to 4 miles and goes up to Camino, but there are people camping in the bushes along the trail. I don’t like taking my daughter on the bike path without my husband because I don’t feel safe. (KI_5)

Other participants commented on the connection between crime and mental health. For example, one community member said, “*The problem is that some people have to commit a crime in order to get services and when they commit a crime, then they’re institutionalized rather than getting the mental health help that they need.*” (FG_1)

Domestic violence and the resulting trauma was also a recurring theme, discussed in three of the eight primary data sources. One service provider stated, “*And domestic violence...CPS calls are another area where we do worse than the rest of California.*” (KI_2). Participants discussed the connection between mental health and domestic violence, as well as the need for appropriate services for families, as demonstrated by the following quotes:

No, there’s definitely a stigma. I just, I feel like mental health and domestic violence a lot of times go hand in hand at least that’s my experience and domestic violence is brushed under the rug here in El Dorado County. This center has saved my life and the center is the only place that anyone in El Dorado County who is in a domestic violence situation can turn to. (FG_1)

...the men who have hurt us go out in the community after they have served their time and where do they go? They don’t have a family anymore and maybe they don’t have a place to live. They’re court mandated to do these certain things and I know it’s really difficult because of what we do here. We support women. But these men, they need help too and I think that having someone help them with aftercare and get them on their feet will lead them to live a healthier life and not abuse again in the future. (FG_1)

When law enforcement came out to deal with my situation, I feel like they didn’t have a clue and I feel like if they knew mentally what I was going through and I don’t know if you want to call it sensitivity training. I don’t know if there’s a word for it, but law enforcement needs to be more skilled and knowledgeable about what women go through and what these men are doing because they’re so manipulative and by the time law enforcement gets on the scene, they’re just perfect and charming and lovely and the woman’s a wreck and that’s all that the law enforcement sees. (FG_1)

Rates – ED Visits and Hospitalizations due to Assault

Understanding safety in the Marshall HSA requires the examination of both crime rates as shown above, as well as incidents of intentional harm, such as rates of assault. Rates of ED visits and hospitalizations related to assault (intentionally harming another person) are included in this assessment to gain an understanding of violence in the Marshall HSA. Figure 23 and 24 show ED visits and hospitalizations related to assault in the area.

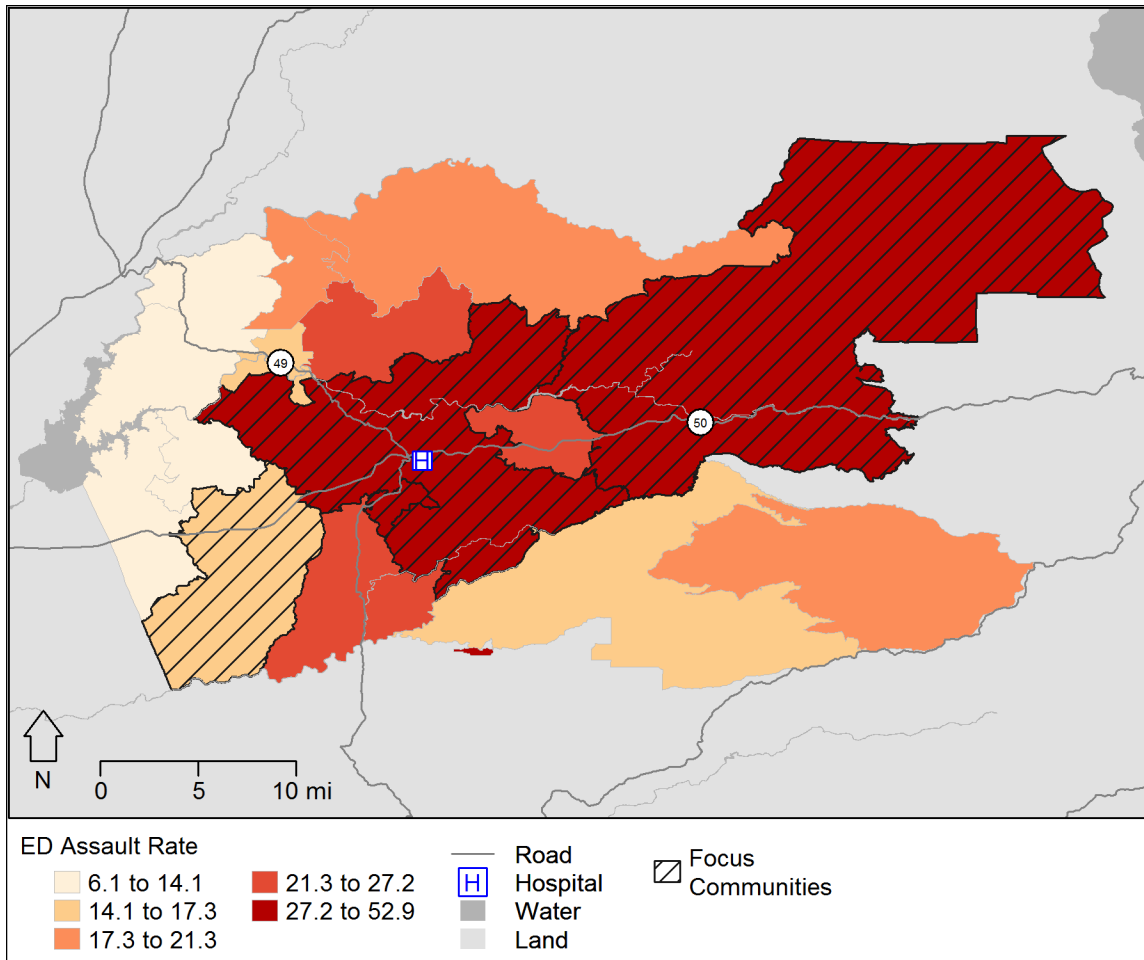


Figure 23: ED Visits Related to Assault

The highest rates of ED visits due to assault in the Marshall HSA were seen in Focus Communities 95675 (River Pines) at 52.87 visits per 10,000 and 95619 (Diamond Springs) at 38.70 visits per 10,000 population. These rates were considerably higher than the county benchmark of 23.24 and the state benchmark of 30.36 ED visits per 10,000 population. Please note, data from ZIP code 95675 (River Pines) may be skewed due to small population size.

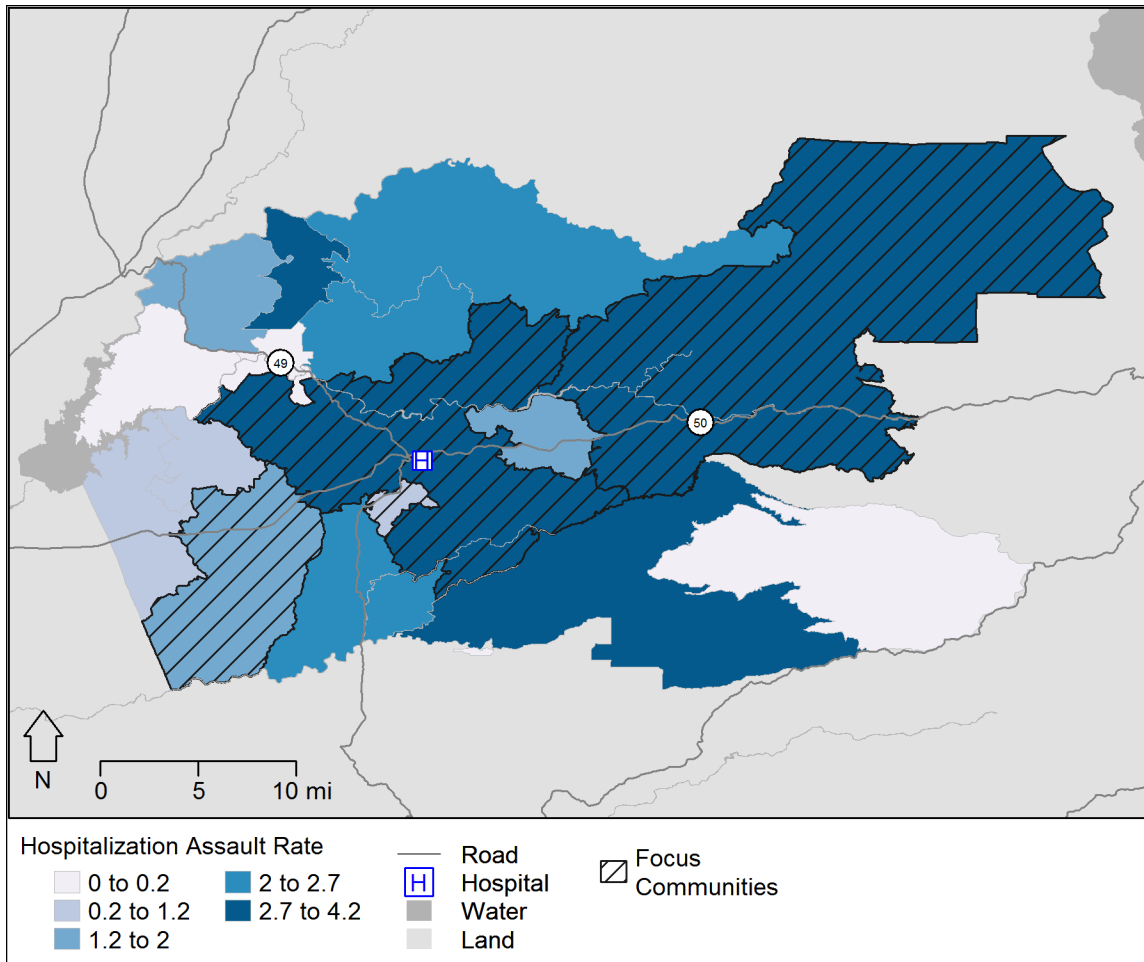


Figure 24: Hospitalizations Related to Assault

The highest rates of hospitalizations due to assault in the Marshall HSA were seen in Focus Community 95726 (Pollock Pines) at 4.16 hospitalizations per 10,000, and ZIP codes 95684 (Somerset) and 95635 (Greenwood) at 3.54 and 3.37 hospitalizations per 10,000 population, respectively. These rates were well above the county rate of 1.72 hospitalizations per 10,000.

Rate – Mortality due to Homicide

Data from the California Department of Public Health collected for 2010-2012 revealed that the Marshall HSA had a lower rate of mortality due to homicide than the state benchmark. The rate of mortality due to homicide was 2.94 deaths per 100,000 population, lower than the state rate of 5.15 deaths per 100,000.

Economic and Work Environment

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

Percent – Unemployed and Median Income by ZIP Code

Table 28: Percent Unemployed and Median Income by ZIP Code

Economic Stability	ZIP Code	Percent Unemployed	Median Income
	95614	5.2	\$92,721
	95619*	14.9	\$57,340
	95623	12.0	\$62,321
	95633	16.0	\$65,603
	95634	16.2	\$56,528
	95635 [†]	5.9	\$43,542
	95636 [†]	0.0	\$50,000
	95651 [†]	3.0	\$55,446
	95664 [†]	6.7	\$89,141
	95667*	15.3	\$57,468
	95672	10.1	\$93,209
	95675 [†]	44.3	\$32,470
	95682*	11.5	\$77,718
	95684	14.4	\$53,148
	95709	12.2	\$68,628
	95726*	13.4	\$55,526
95762	8.3	\$119,382	
El Dorado County	12.0	\$69,297	
CA State	11.5	\$61,094	

Source: Census, 2013

*Indicates Focus Community; [†] Indicates small population size

As Table 28 shows, eight of the Marshall HSA ZIP codes exceeded the county benchmark for the percent of residents unemployed, with the highest rate in ZIP codes 95675 (River Pines) at 44.3%. Median annual incomes were below the county benchmark in twelve of the ZIP codes, and nine ZIP codes fell below the state benchmark. The lowest median incomes were observed in 95675 (River Pines) at \$32,470 and 95635 (Greenwood) at \$43,542, substantially lower than both the county and state levels. Please note, data from ZIP code 95675 (River Pines) may be skewed due to small population size.

Many key informants and community members spoke about economic stability and the influence it has on many areas of healthy living, including its effect on access to quality health care, healthy foods, transportation, stable housing, etc. One participant summarized, “*Do the math. Try to make \$10, \$12, \$14 an hour and pay rent and have a car and take care of your kids and feed them.*” (FG_2) The following quotes from residents further articulate the challenges that low-wage earners individuals face:

...it would be better if you didn't have an income so it's kind of conducive to not work in El Dorado County and I'm not saying like that's a good thing because people need resources when they don't work, but if you don't work, you can get access to Medi-Cal. You can get access to like safety net resources and that is better than having a job at McDonald's and making minimum wage and not being able to afford to get anything on your own because it's just not affordable. (FG_1)

Many within the Latino population work in agriculture or field work. It is very hard work, both men and women work in the sun and heat, and the bosses treat us very poorly and they abuse us and take advantage of us. (FG_3)

There was also discussion in the primary data about the connection between unemployment and substance use. For example,

It's unfortunate because when I needed to go to work when I was young, they wanted you. And now it's like there's 1000 people standing in line for that job and so I feel really bad for the kids now...and that's probably part of the reason there's so much drug abuse because the kids can't get jobs, they don't have money. It's like somehow or another, people have got to be able to get jobs a little easier so they aren't just loitering around. (FG_1)

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

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

	ZIP Code	Percent Below 100% Federal Poverty Level	Percent Families with Children in Poverty	Percent Single Female Headed Households (FHH) in Poverty	Percent Elderly Households in Poverty
Poverty	95614	3.6	5.4	31.1	--
	95619*	6.7	5.3	--	2.1
	95623	7.3	6.6	--	0.6
	95633	6.5		--	1.1
	95634	8.9	9.6	18.4	0.8
	95635 [†]	6.3		--	--
	95636 [†]	5.7	9.4	--	--
	95651 [†]	6.0		--	--
	95664 [†]	10.2	19.3	--	--
	95667*	12.6	15.5	30.6	2.3
	95672	2.2	--	--	0.8
	95675 [†]	9.9	--	--	--
	95682*	7.6	7.4	24.1	0.9
	95684	9.6	30.9	25.5	2.6
	95709	6.9	1.6	--	2.0
	95726*	13.7	23.0	72.2	0.8
	95762	3.7	2.9	4.4	1.4
Marshall HSA	7.8	--	--	--	
El Dorado County	9.0	9.5	24.6	1.3	
CA State	15.9	17.8	36.8	2.3	

Source: Census, 2013; *Indicates Focus Community; [†] Indicates small population size

Five of the 17 Marshall HSA ZIP codes had a higher percentage of households living below the Federal Poverty Level (FPL), relative to the county rate. Focus Communities 95667 (Placerville) and 95726

(Pollock Pines) had the highest rates, with 12.6% and 13.7% of households below the FPL, respectively. ZIP codes 95684 (Somerset) and 95726 (Pollock Pines) had the highest percentages of children in poverty at 30.9% and 23.0%, substantially higher than the county benchmark of 9.5%. Among single female-headed households (FHH), the highest rates of poverty were in 95726 (Pollock Pines) where 72.2% and of FHHs are living in poverty, nearly three times the county benchmark of 24.6%. ZIP code 95684 (Somerset) had a substantially higher rate of elderly households in poverty, at double the county rate. Focus Community 95667 (Placerville) and ZIP code 95684 (Somerset) had high poverty rates compared to county benchmarks in all four categories.

Many key informants and community members spoke about poverty and the influence it has on many areas of healthy living, including its effect on access to quality health care, healthy foods, transportation, stable housing, etc. For example, one service provider said,

We're serving thousands of senior citizens that live on social security, widows who don't have husbands or anyone to take care of them and they're trying to live off \$1,000 a month...basically it's either food, rent or medicine and sometimes they choose food and rent over medicine. (FG_2)

Percent – Population Uninsured

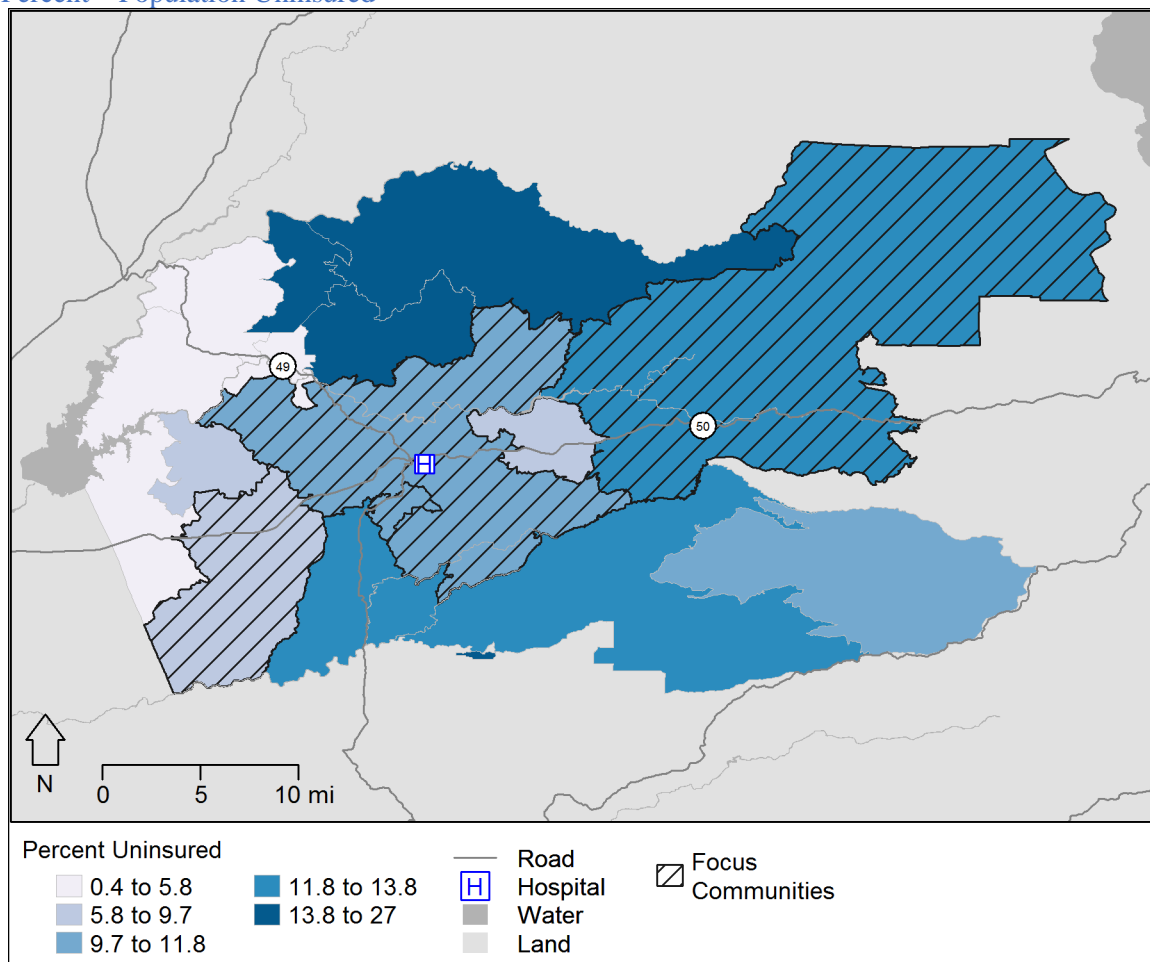


Figure 25: Percent Uninsured by ZIP Code in the Marshall HSA

The percent of population without health insurance for El Dorado County was 10.2%, below the state level of 17.8%. Four ZIP codes were in the highest bracket of percent uninsured, including 95635 (Greenwood) at 27.0%, 95675 (River Pines) at 16.5%, 95633 (Garden Valley) at 16.3% and 95634 (Georgetown) at 14.2%. Please note, data from ZIP codes 95635 (Greenwood) and 95675 (River Pines) may be skewed due to small population size. Primary data findings related to health insurance are discussed in the “Access to care” section of this report.

Service Environment

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

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

Rate – Primary Care Physicians per 100,000 Population

Data from the US Department of Health and Human Services reveals that the rate of primary care physicians per 100,000 population was 69.2 for El Dorado County in 2012, below the state rate of 77.2 physicians per 100,000 population.

Area – Health Professional Shortage Area – Primary Care

Health Professional Shortage Areas (HPSAs) are designated by the U.S. Government Health Resources and Services Administration (HRSA) as having shortages of primary medical, dental, or mental health providers; these shortages may be geographic (e.g., a county or service area), demographic (e.g., a low income population) or institutional (e.g., comprehensive health center, federally qualified health center, or other public facility).²⁵

²⁵ Health Resources and Services Administration. (n.d.). *Primary Medical Care HPSA: Designation Overview*. Retrieved from: <http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/primarycarehpsaoverview.html>

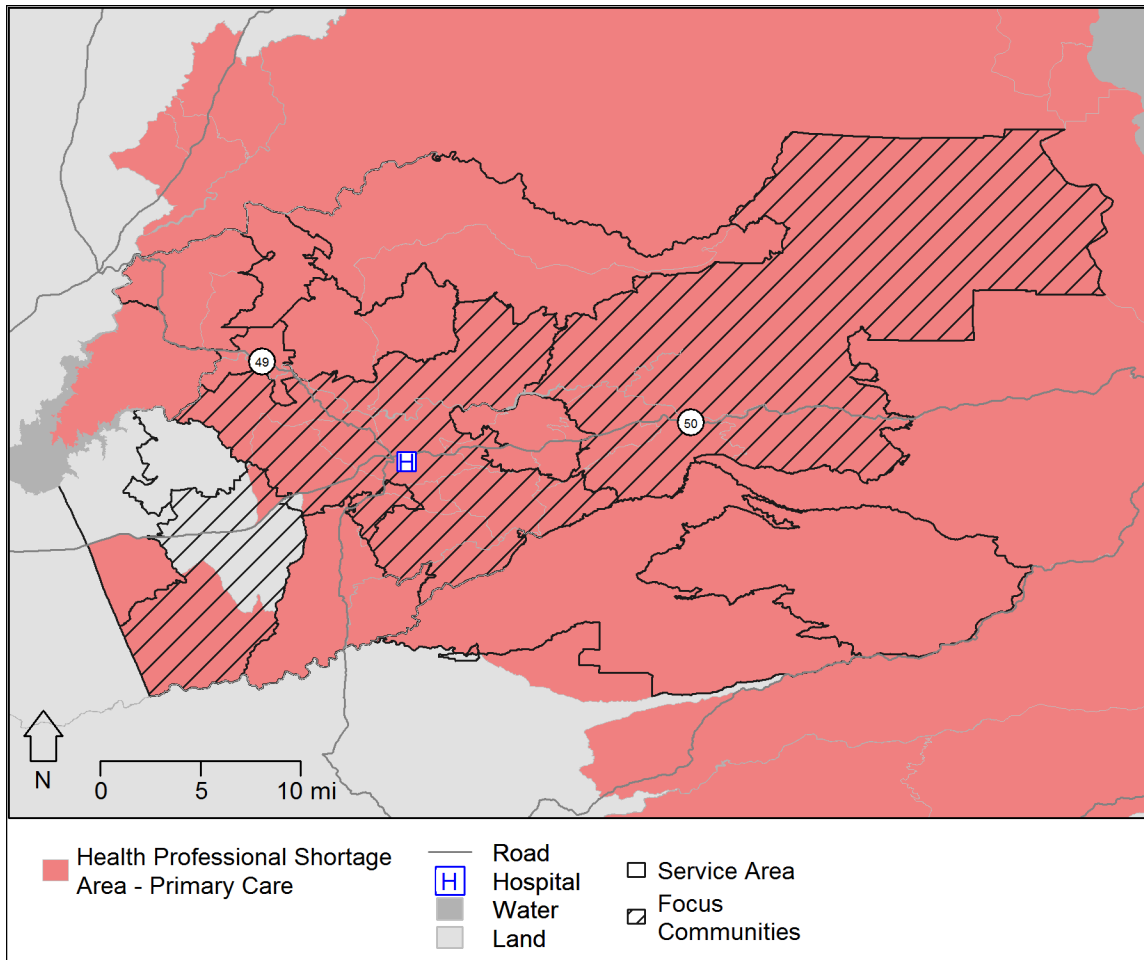


Figure 26: Primary Care HPSA in the Marshall HSA

Fifteen ZIP codes were designated as HPSAs for Primary Care. The only ZIP codes that were excluded from HPSA designation were 95672 (Rescue) and 95675 (River Pines).

One of the significant findings of the primary data was the need for increased access to primary care for residents of the Marshall HSA. One key informant stated:

I can already see the significant demand for primary care and for us to recruit physicians in particular right now is very difficult, very difficult. We live in a beautiful county with some very nice communities to live in, access to a more urban area, an airport you would not think it would be that difficult but we are all collectively having challenges around physician recruitment.
(KI_4)

Though insurance coverage for residents in the HSA has increased as a result of the Affordable Care Act, key informant and community members consistently mentioned a lack of providers, especially Medi-Cal providers. According to participants, this often resulted in long wait times to get an appointment with a primary care provider. The following quotes demonstrate the difficulty many low-income residents have in accessing care.

There's not that many providers up here so in turn, they all go to tribal health or one or two places that are available and they have waits of 30 days to get in to see the doctor and stuff like that because they're just full. (FG_2)

A lot of people self-medicate because they have such limited access to care, and they access the ER a lot, the system is more expensive. At the ER they don't resolve the issue, they just give you Tylenol and then let you go. They don't prevent anything, they wait to treat you and that's why it gets so expensive. (FG_3)

In addition, many residents struggle to receive adequate care from specialists, particularly those who are on Medi-Cal, undocumented, or don't have health insurance. For example, one resident explained:

My child had to get an eye operation and we had to travel all the way to Redding, which is 4 hours away, for the operation. I have 5 kids and so it's very far. Medi-Cal doesn't have very many doctors here. (FG_3)

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

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

Prenatal Health	ZIP Code	Percent of Live Births with Prenatal Care in First Trimester	Percent of Births with Low Birth Weight
		95614	84.1
	95619*	74.6	6.4
	95623	80.5	7.0
	95633	76.0	6.8
	95634	78.7	6.4
	95635 [†]	81.3	6.7
	95636 [†]	76.2	6.7
	95651 [†]	80.7	6.7
	95664 [†]	81.5	6.8
	95667*	70.3	7.1
	95672	82.2	6.8
	95675 [†]	--	--
	95682*	80.9	5.9
	95684	77.3	6.6
	95709	71.9	6.7
	95726*	72.7	6.4
	95762	88.2	6.2
	Marshall HSA	77.3	6.1
	El Dorado County	78.6	6.3
	CA State	83.6	6.8

Source: CDPH, 2010-2012; *Indicates Focus Community; [†] Indicates small population size

Data revealed that a lower percentage of pregnant mothers received prenatal care in the first trimester in seven of the Marshall HSA ZIP codes, relative to the county and state benchmarks. The ZIP code with the lowest percentage was Focus Community 95667 (Placerville), where only 70.3% of mothers received prenatal care in the first trimester of pregnancy. Fourteen of the ZIP codes reporting data on percentage of

births with low birth weight were above the county benchmark, and five ZIP codes were equivalent to or greater than the state benchmark for low birth weight babies per 1,000 live births. Focus Community 95667 (Placerville) had the highest rate of low birth weight babies, at 7.1 per 1,000 live births.

Participants spoke about the need for better access to prenatal care services, especially for those who are on Medi-Cal or undocumented. One resident also pointed out that culturally competent prenatal care is needed. For example, “*Translation services are highly needed. There are no interpreters to accompany pregnant women to their appointments.*” (FG_3)

Rate – Federally Qualified Health Centers per 100,000 Population

Data from the US Department Health and Human Services for 2015 indicated that the rate of Federally Qualified Health Centers (FQHC) in the Marshall HSA was at 2.00 FQHCs per 100,000 population, slightly higher than the state rate of 1.97 FQHCs per 100,000 population.

FQHCs in El Dorado were discussed frequently in the primary data. Some participants pointed out that even this service can be cost prohibitive for some community members. For example, “*The El Dorado Community Health Center, it’s a clinic, but it is not free. Prices vary depending on income and the fee is \$40 which is a lot, if you work in a restaurant, this is a lot of money.*” (FG_3)

Rate – Preventable Hospital Events per 10,000 Population

The rate of preventable hospitalizations reported by the Office of Statewide Health Planning and Development for 2011 for El Dorado County was 62.69 events per 10,000 population, substantially lower than the state rate of 83.17 per 10,000 population. Preventable hospital events are ambulatory care-sensitive conditions which could have been prevented if adequate access to primary care was available and utilized by the community.

Rate – Mental Health Providers per 100,000 Population

Data from the US Department of Health and Human Services for 2015 reveals that the rate of mental health providers per 100,000 population was 120.7 for El Dorado County, compared to the state rate of 157.0 per 100,000 population.

Rate – Dental Health Providers per 100,000 Population

Data from the US Department of Health and Human Services for 2015 revealed that the rate of dental health providers per 100,000 population was 79.2 for El Dorado County, higher than the state rate of 77.5 per 100,000 population.

Area – Health Professional Shortage Area - Dental Health

There were no federally designated HPSAs for dental care in the Marshall HSA. However, key informants and community members mentioned dental issues as a health concern. Many participants mentioned the need for access to dental care, especially for low-income adults in need of restoration services. One key informant said, “*Dental care is greatly needed especially for the Medi-Cal population, there are very few dentists in the area that will take them.*” (KI_4) Many community members live without a full mouth of teeth, providing a barrier to eating adequate crunchy fruits and vegetables, and effecting employability and overall quality of life.

Education

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

Percent – High School Students Graduating in Four Years

The California Department of Education reports the graduation rate as the percent of high school students receiving their high school diploma in four years. The high school graduation rate in 2013 for El Dorado County was 89.2%, above the state percent at 80.4%. High School graduation rates in El Dorado County by race and ethnicity showed that 91.5% of Whites graduate in four years, compared to 79.7% of Blacks, 79.2% of Hispanic/Latinos, 93.8% of Asians and 77.5% of non-Hispanic others.

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

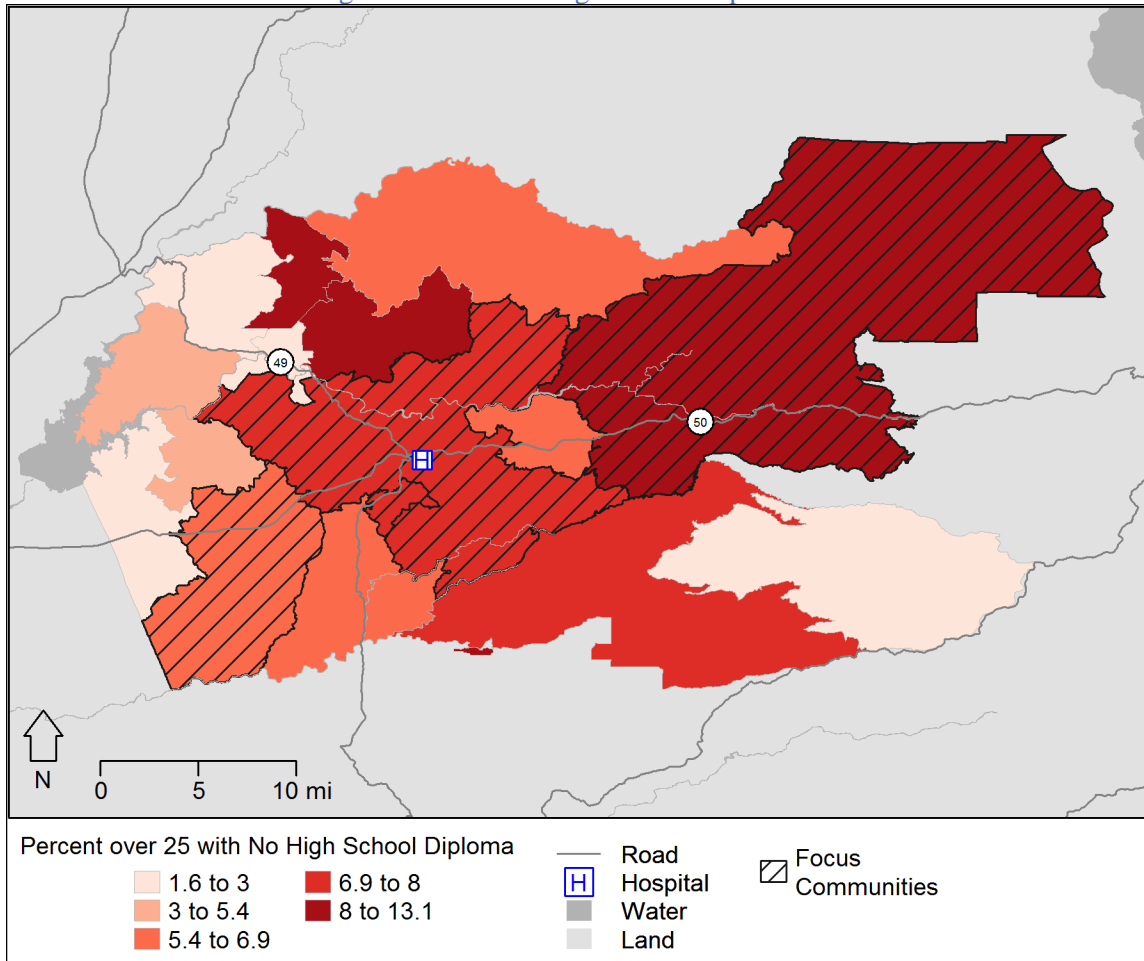


Figure 27: Percent over 25 Years Old with No High School Diploma

The percent of residents without a high school diploma was 6.8% for El Dorado County and 18.8% for the state. Seven of the 17 Marshall HSA ZIP codes had a higher percentage of residents without a diploma than the county benchmark. The most notable were ZIP codes 95675 (River Pines) at 13.1%, 95635 (Greenwood) at 10.1%, and 95633 (Garden Valley) at 8.6%. Please note, data from ZIP codes 95675 (River Pines) and 95635 (Greenwood) may be skewed due to small population size.

Percent – Non-proficient Reading Level in Fourth Grade

Data from the California Department of Education for 2012-2014 indicated that 27.0% of 4th graders in El Dorado County are not proficient in reading at the 4th grade level, slightly below the state benchmark of 36.0%. Reading proficiency in 4th grade is important because it is linked to poverty, unemployment and

barriers to healthcare access. Percent of reading proficiency differs significantly by race and ethnicity. An examination of reading proficiency in El Dorado County by race and ethnicity revealed that 20.0% of White students were not proficient, 18.0% of Black students, 46.0% of Hispanic/Latino students and 11.1% of Asian students were not proficient in reading at the 4th grade level.

Percent – 3 and 4 Year Olds Enrolled in Preschool

Data from the US Census Bureau for 2009-2013 indicated that 54.4% of 3 and 4 year-olds in the Marshall HSA are in preschool, above the state benchmark of 49.1%. This data is important as access to early education is a social determinant of health.

Rate – Suspensions per 100 Students

The rate of suspensions for the Marshall HSA, as reported by the California Department of Education, was 3.96 per 100 students, below the state rate of 4.04 per 100 students. This is an important health indicator because it is related to educational attainment and crime in the community as an adult.

Social Services

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

Percent – Population on Public Health Insurance

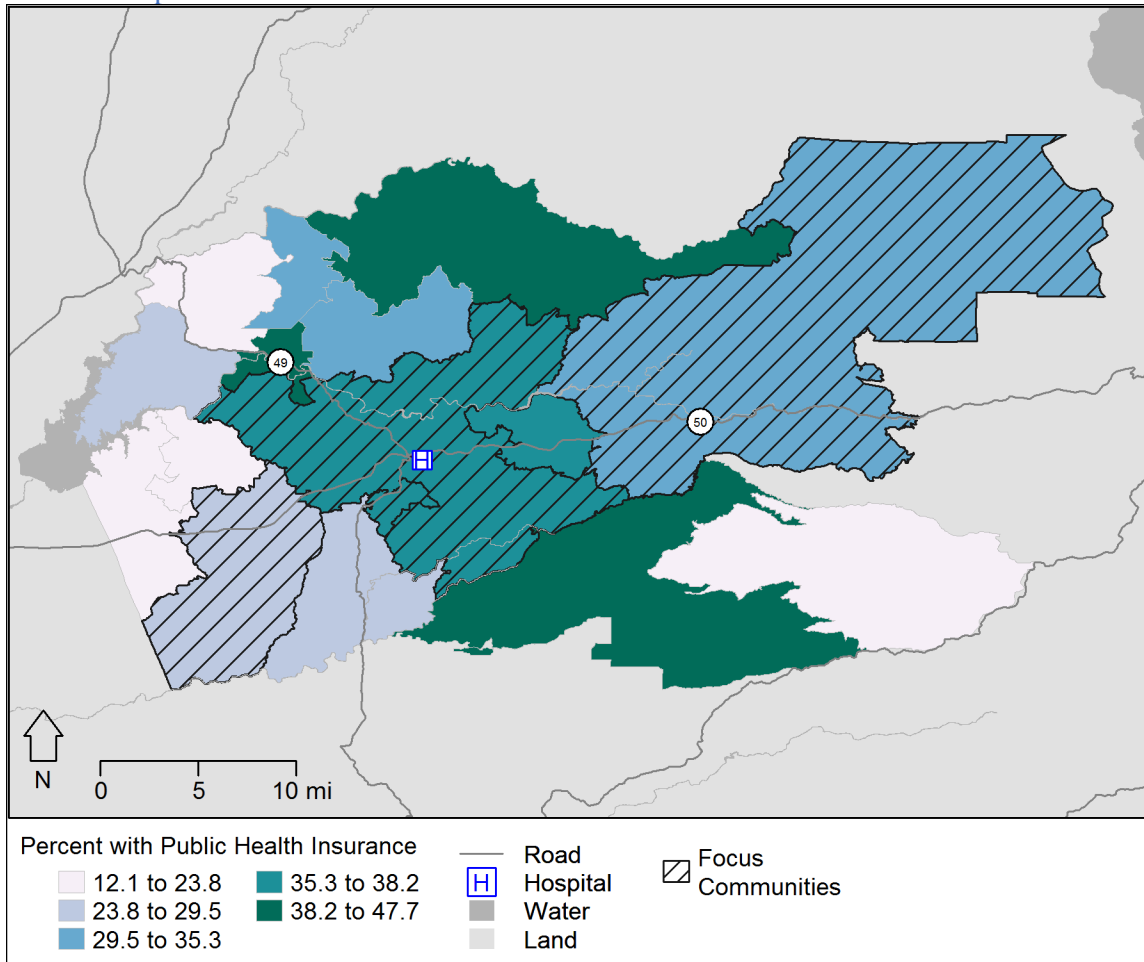


Figure 28: Percent of Population on Public Health Insurance

Data on the percent of residents with public insurance showed clear economic and access disparities. Twelve of the 17 Marshall HSA ZIP codes had percentages of residents with public insurance higher than the county percent at 27.9%. The ZIP codes with the highest rates included: 95651 (Lotus) at 47.7%, 95675 (River Pines) at 40.5%, 95684 (Somerset) at 38.8% and 95634 (Georgetown) at 38.3%. Please note, data from ZIP codes 95651 (Lotus) and 95675 (River Pines) may be skewed due to small population size.

Percent – Population receiving Medicaid (Medi-Cal)

Though the above data provides information on the percent of population on all sources of public health insurance, the US Census Bureau reports the percent of population receiving Medicaid specifically. For the Marshall HSA, 12.6% of residents receive Medicaid, well below the state percent of 23.4%.

Percent – Population Receiving Public Assistance

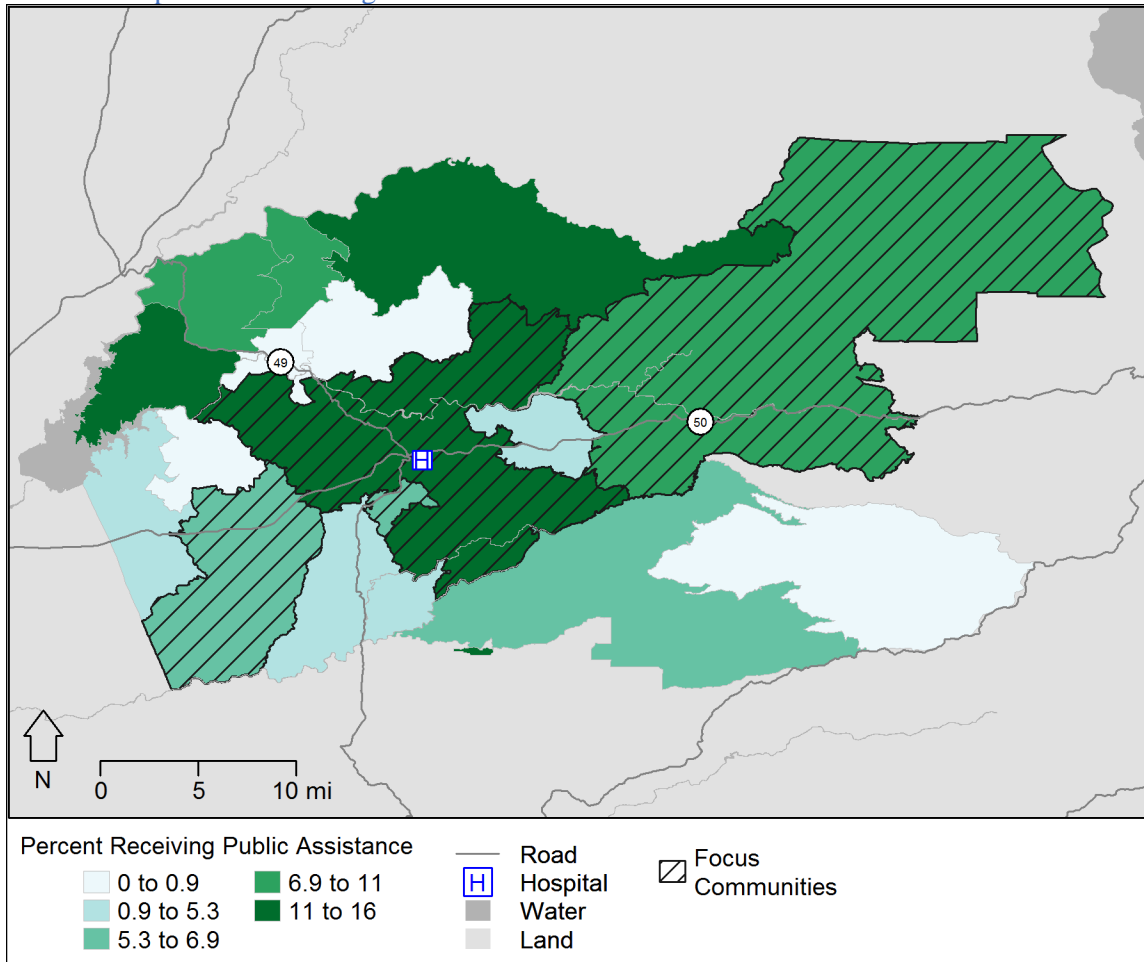


Figure 29: Percent of Population Receiving Public Assistance

The percent of population receiving public assistance varied across the Marshall HSA, with four ZIP codes in the highest bracket of 11% to 16%. These ZIP codes include: 95634 (Georgetown) at 16.0%, 95675 (River Pines) at 14.9%, 95667 (Placerville) at 11.5% and 95664 (Pilot Hill) at 11.2%, compared to the county benchmark of 7.6% and the state benchmark of 12.1%. Please note, data from ZIP codes 95675 (River Pines) and 95664 (Pilot Hill) may be skewed due to small population size.

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

Data from the National Center for Education Statistics for 2013-2014 indicated that 25.6% of school-aged children in the Marshall HSA are eligible for Free and Reduced Priced Lunch, below the state percent of 58.1%. This indicator is important because it identifies service needs associated with poverty, which is a social indicator of health status in a community.

PRIORITIZED DESCRIPTION OF SIGNIFICANT COMMUNITY HEALTH NEEDS

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

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

Process and Methods for Prioritizing Significant Health Needs

Potential Health Need (PHN) Categories

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

Quantitative/Qualitative Analysis on PHN Categories

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

Thresholds for Significant Health Needs (SHNs)

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

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

Prioritized Significant Health Need Identification Process

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

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

Prioritized Significant Health Needs for Marshall Medical Center

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

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

Marshall Hospital (N=8)					
	RANK	Significant Health Needs	QUANT	QUAL	IMPORTANCE
			40%	50%	
Tier 2	1	Behavioral Health	75%	88%	88%
	2	Safe Communities	50%	88%	38%
	3	HEAL	52%	75%	25%
	4	Disease Prevention/Management	50%	50%	25%
	5	Transport	83%	100%	13%
Tier 1	6	Access to Care	29%	100%	75%
	7	Basic Needs	14%	100%	38%
	8	Pollution Free Communities	67%	38%	0%

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

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

1. Access to Behavioral Health Services

This category encompasses the following needs related to behavioral health:

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

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

Quantitative Indicators

- Alcohol consumption
- Alcohol expenditures
- Tobacco expenditures
- Alzheimer's Disease – Mortality
- Chronic Lower Respiratory Disease - Mortality
- Chronic Obstructive Pulmonary Disease – ED visits
- Chronic Obstructive Pulmonary Disease – Hospitalizations
- Suicide – Mortality
- Smoking prevalence
- Lung Cancer -- ED visits
- Lung cancer – Mortality
- Substance abuse -- ED visits
- Substance abuse – hospitalizations
- Mental health -- ED visits
- Mental health – hospitalizations
- Self-Inflicted Injury – ED visits
- Access to mental health providers
- Chronic liver disease and cirrhosis mortality

Qualitative Themes

- Depression, anxiety and daily stress common, especially for older adults and youth
- Barriers in accessing mental health care
 - Lack of providers who accept Medi-Cal
 - Long wait times
 - Lack of transportation, especially for rural residents
- Provider insensitivity towards vulnerable populations
- Mental health care in the Emergency Department is difficult and stigma is an issue
- Need for more social engagement support for youth and adults (including postpartum mothers) to prevent depression and anxiety
- Co-morbidity between mental health and physical health
 - better care coordination is needed
- Adverse childhood experiences have led to an increase in children and young adults needing mental health services
- Alcohol and drug use a major issue
- There is significant concern about substance abuse among pregnant mothers
- Drug/alcohol and tobacco abuse common with people experiencing homelessness
- Need more substance abuse treatment programs
- Need more programs for youth to keep them engaged and less likely to engage in substance abuse

2. *Safe, Crime and Violence Free Communities*

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

Quantitative Indicators	Qualitative Themes
<ul style="list-style-type: none"> ● Alcohol consumption ● Alcohol expenditures ● Substance Abuse – ED visits ● Substance abuse – hospitalizations ● Domestic violence rates ● Major crime rates ● Unintentional injury – ED visits ● Unintentional injury – hospitalizations 	<ul style="list-style-type: none"> ● Alcohol, drugs and mental health conditions contribute to an increase in community violence ● A fear of violence prevents some community members from being physically active in area parks and trails ● Domestic violence is of significant concern in the county <ul style="list-style-type: none"> - Domestic violence stigmatized and often not discussed - There is a need for more sensitivity training for providers, law enforcement and school personnel - There is a need for more after-care for both victims and perpetrators of domestic violence ● Adverse childhood experiences from exposure to violence result in trauma and maladaptive behavior in area youth ● Need more programs for youth to keep them engaged and less likely to engage in substance abuse or crime ● Concern about traffic safety due to the use of drugs and alcohol

3. *Active Living and Healthy Eating*

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

Quantitative Indicators	Qualitative Themes
<ul style="list-style-type: none"> ● Heart disease – ED visits ● Fruit and vegetable expenditures ● Low fruit and vegetable consumption – youth ● Colorectal cancer – ED visits ● Colorectal cancer – Hospitalizations ● Colorectal cancer – Mortality ● Diabetes – Mortality ● USDA defined food desert ● Soda expenditures ● Food Environment – Grocery Stores ● Osteoporosis – ED visits ● Osteoporosis – Hospitalizations 	<ul style="list-style-type: none"> ● Lack of access to safe places to be physically active <ul style="list-style-type: none"> - crime and drug abuse limit physical activity in some cases ● Need more walkable communities <ul style="list-style-type: none"> - areas of the county lack sidewalks and bike lanes - adequate lighting is needed in some areas ● Participation in recreational opportunities can be cost-prohibitive, especially for low-income youth and older adults ● High cost of eating healthy – cheaper food is more shelf-stable and filling ● Concern that school food is unhealthy ● Knowledge on how to make healthier choices and prepare healthier foods is vital, nutrition education best delivered in a culturally sensitive way

- Commute to work – walking/biking
- Commute over 60 minutes
- Living within one-half mile of a park

4. Disease Prevention, Management and Treatment

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

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

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

Quantitative Indicators	Qualitative Themes
<ul style="list-style-type: none"> ● Alcohol consumption ● Alcohol expenditures ● Tobacco expenditures ● Smoking prevalence ● Heart disease – ED visits ● Heart disease – Prevalence ● Heart disease – Mortality ● Asthma prevalence ● Asthma – ED visits ● Asthma – Hospitalizations ● Cancer – Mortality ● Lung cancer – ED visits ● Lung cancer – Hospitalizations ● Lung cancer – Mortality ● USDA defined food desert ● Fruit and Vegetable expenditures ● Breast cancer – ED visits ● Breast cancer – Hospitalizations ● Breast cancer – Mortality ● Colorectal cancer – ED visits ● Colorectal cancer – Hospitalizations ● Colorectal cancer – Mortality ● Living within one-half mile of a park ● Prostate cancer – ED visits ● Prostate cancer – Hospitalizations ● Prostate cancer – Mortality ● Stroke – mortality ● Stroke – ED visits 	<ul style="list-style-type: none"> ● Heart disease, obesity and diabetes (including gestational) were the most commonly mentioned conditions in the community ● Respiratory illnesses were the second most commonly mentioned condition ● Asthma and allergies are of concern to residents and medications are often cost prohibitive for low-income populations

5. Affordable and Accessible Transportation

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

Quantitative Indicators	Qualitative Themes
<ul style="list-style-type: none"> ● Commute to work – walking/biking ● Commute over 60 minutes ● Commute to work alone in car ● Percent of population with a disability ● Population living within one-half mile of a transit stop 	<ul style="list-style-type: none"> ● Many residents lack adequate reliable and affordable transportation ● Lack of transportation effects ability to get to grocery stores, food distribution sites, and other health services ● Residents in rural parts of the county have to travel far to get comprehensive health care services ● Bus routes in rural and low-income communities need to operate more frequently and go beyond current routes ● Older adults, disabled people, and youth without adequate transportation can feel isolated and depressed ● There is a need for on-demand transportation services (i.e. shuttle or van) for rural residents and older adults to get to medical and dental appointments

6. Access to High Quality Health Care and Services

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

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

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

Quantitative Indicators	Qualitative Themes
<ul style="list-style-type: none"> ● Dental/Oral disease – ED visits ● Dental/Oral disease – Hospitalizations ● Health Professional Shortage Area – Primary Care ● Soda expenditures ● Access to primary care providers ● Percent receiving prenatal care 	<ul style="list-style-type: none"> ● Affordable Care Act insured low income individuals but coverage doesn't equal access ● Barriers to accessing health care for those covered by Medi-Cal: <ul style="list-style-type: none"> - Lack of primary care providers - Lack of specialty providers - Lack of dental providers - Long wait times to be seen - Language barriers between providers and patients - Lack of transportation, especially for rural residents ● Medi-Cal providers are hard to find and often aren't accepting new patients <ul style="list-style-type: none"> - reimbursement rates are low leading to few providers ● Care for undocumented individuals is a concern ● Prescription drugs can be cost prohibitive for low-

- income individuals
- Culturally sensitive care is important for vulnerable populations, including having bicultural interpreters
- There is a need for more care coordination and navigation services for those that are new to the health care system

7. Basic Needs (Food Security, Housing, Economic Security, Education)

This category encompasses the following basic needs:

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

Quantitative Indicators

Qualitative Themes

- | | |
|--|--|
| <ul style="list-style-type: none"> ● Commute over 60 minutes ● Percent housing vacancy ● Percent unemployed | <ul style="list-style-type: none"> ● Need more employment opportunities in the region ● Cost of living is high and wages are low ● Many individuals classify as “working poor” who don’t qualify for assistance programs yet can’t afford services ● Need for more job training and language classes for English language learners ● Food insecurity exacerbated by lack of reliable or affordable transportation for rural residents to food distribution sites ● Lack of safe, affordable housing for vulnerable populations, (i.e. transitional youth, those experiencing homelessness or chronic mental illness) |
|--|--|

8. Pollution-Free Living and Work Environments

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

Quantitative Indicators

Qualitative Themes

- | | |
|--|---|
| <ul style="list-style-type: none"> ● Population living within one-half mile of a transit stop ● Tobacco expenditures ● Smoking prevalence ● Heart disease – ED visits ● Asthma – prevalence ● Asthma – ED visits ● Asthma – Hospitalizations ● Cancer – Mortality ● Chronic Lower Respiratory Disease – mortality | <ul style="list-style-type: none"> ● Smoking (tobacco and marijuana) is an issue in the county, especially in the lower-income populations ● There is a concern about the increase of vaping (both tobacco and meth) and the use of e-cigarettes ● Asthma and allergies are an issue for many area residents |
|--|---|

- Chronic Obstructive Pulmonary Disease – ED visits
- Chronic Obstructive Pulmonary Disease – Hospitalizations
- Road network density

RESOURCES POTENTIALLY AVAILABLE TO MEET SIGNIFICANT HEALTH NEEDS

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

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

Significant Health Need (in priority order)	Number of resources
1. Access to Behavioral Health Services	27
2. Safe, Crime and Violence Free Communities	20
3. Active Living and Healthy Eating	12
4. Disease Prevention, Management and Treatment	11
5. Affordable and Accessible Transportation	3
6. Access to High Quality Health Care and Services	24
7. Basic Needs (Food Security, Housing, Economic Security, Education)	35
8. Pollution-Free Living and Work Environments	3

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

IMPACT OF ACTIONS TAKEN SINCE PREVIOUS CHNA

Marshall Medical Center is gaining traction and experiencing some success in the programs and collaborative efforts related to the three prioritized health needs identified in the 2013 Community Health Needs Assessment (CHNA). There is consistency between the 2013 priorities and the current findings in the 2016 CHNA and Marshall will continue to work to improve these health needs into the future. In addition to the prioritized health needs addressed by Marshall's Community Benefit Plan, Marshall provided health care services as a benefit to the community in the amount of \$54.6M in following areas:

	Persons Served	Total Expense	Offsetting Revenue	Net Benefit To Community	% of Organization	
					Expenses	Revenue
Health Care Services Rendered						
Charity Care	558	\$ 1,063,025	\$ 366,936	\$ 696,089	0.51%	0.17%
Financial Assistance	352	1,417,663	741,290	676,372	0.68%	0.35%
Means Tested / County Ind CMSP	7	16,726	13,338	3,388	0.01%	0.01%
Uninsured	2,206	2,001,981	1,859,204	142,777	0.96%	0.87%
Medi-Cal	15,369	44,197,005	28,547,390	15,649,615	21.26%	13.41%
Medicare	22,726	112,789,091	77,244,289	35,544,802	54.26%	36.28%
Total Health Care Services	41,218	\$ 161,485,491	\$ 108,772,447	\$ 52,713,045	77.69%	51.09%
Community Services						
Community Building Activities	33,584	\$ 266,991	\$ 1,800	\$ 265,191	0.13%	0.00%
Community Health Improvement	2,508	1,483,714	78,586	1,405,128	0.71%	0.04%
Community Health Education	450	72,522	9,275	63,247	0.03%	0.00%
Health Professionals Education	118	74,718	-	74,718	0.04%	0.00%
Financial and In-Kind Contributions	unavailable	97,924	2,309	95,615	0.05%	0.00%
Total Community Services	36,660	\$ 1,995,869	\$ 91,970	\$ 1,903,899	0.96%	0.04%
Total Community Benefit	77,878	\$ 163,481,360	\$ 108,864,417	\$ 54,616,943	78.65%	51.13%

Note 1 - Health Care Services Rendered does not include any Financial Assistance or Charity Care for patients who had commercial insurance, but could not afford their "out of pocket" costs. The number of persons served and total expense would be greater if these patients were included.

Note 2 - Expenses for "Health Care Services Rendered" were calculated using allocated cost from a cost accounting program.

Limited mental health services; lack of access to mental health services

The Marshall Foundation for Community Health had a grant focus in 2015 for preventive mental health services including funding for Big Brothers, Big Sisters "Start Early" program to address mental health conditions before they become severe and disabling, through education and training of mentors to help normalize mental health conditions, reduce stigma and to reduce the effect of parental mental health issues that affect the child. The Marshall Foundation for Community Health also provided mental health focused funding to Bipolar Insights to provide outreach and scholarships for low income individuals to attend classes.

The El Dorado Women's fund grant focus of "Breaking the Cycle of Poverty" provided grants to the following agencies:

- Tahoe Turning Point of Placerville who provides a full spectrum of out-patient counselling and therapy services to clients with “Dual Diagnosis” who have co-occurring mental health and addiction disorders.
- NAMI El Dorado County Western Slope to provide education, support, and advocacy for those with mental illness and their families, also to provide a BASICS class directed toward families with a child, or children developing symptoms of mental illness before the age of 13.

The Marshall Medical (Foundation) Physician Advisory Council and Marshall Medical Center’s Board of Directors have prioritized and approved the recruitment of a Psychiatrist and Licensed Clinical Social Worker (LCSW) to provide mental health services to outpatients within the Marshall clinics. We are currently in discussions with the El Dorado Community Health Centers to potentially share these resources between facilities to broaden the availability of these important mental health resources and to patients in our community. Active recruitment for a Psychiatrist and LCSW is currently underway. We evaluated the potential of tele-psychiatry and found that it was not financially feasible.

Marshall Medical Center is an active participant on the ACCEL Steering Committee (Access El Dorado, a safety net provider network of multiple health care agencies in El Dorado County). ACCEL’s work on care pathway development included a referral pathway for primary care providers to refer appropriate patients for pediatric mental health services.

Marshall continues to contract with a local Psychiatrist to provide psychiatric consultation to hospitalized patients who have significant behavioral health issues that complicate their hospital stay and recovery. We are exploring the possibility of extending these contracted psychiatric services to Emergency Department patients who are in need of medical management of their significant psychiatric symptoms. Health Connections is no longer in existence due to inability to attract sustainable funding. Staff who were involved with Health Connections are currently conducting patient care management with the El Dorado Community Health Center and continue to work with a similar patient population.

[Lack of access to inpatient and outpatient substance abuse treatment](#)

The El Dorado Community Health Centers recently received a California HealthCare Foundation planning grant to explore the implementation of an “Emergency Department (ED) Integrated Medically Assisted Treatment of Opioid Addiction with Buprenorphine” to potentially start the treatment of opioid addiction in the ED, with appropriate referral for ongoing treatment. Marshall Medical Center’s ED Medical Director and department leadership are involved in exploring this option to reduce the incidence of opioid addiction and overdose in the community.

Marshall Medical Center’s medical staff has provided recent physician and provider education on pain management, the management of addiction in the outpatient setting, the management of addiction during pregnancy and are currently planning on further education in this arena through 2016.

[Lack of coordination of care among providers; no case management services](#)

Community Care Network (CCN) – This program, under the direction of Medical Director, Bill Klas, MD and Clinical Director, Penny Lehrman, RN, is using the expertise of Marshall’s physicians, Social Services, Pharmacy and Case Management, Diabetes and Nutrition, CHATT (Congestive Heart Active Telephone Triage) program and other departments to coordinate the care of Marshall’s sickest patients with high utilization of the Emergency Department and inpatient services. The CCN program has implemented a very effective volunteer Health Coach training program and has “graduated” two groups of approximately 12 coaches, who have engaged in assisting in supporting several of the patients enrolled

in the CCN. Currently the CCN is managing 114 patients and is receiving direct referrals from outpatient practices. The services of the CCN, including all professional consultation are provided at no charge to patients. The CCN program has reduced patient average length of stay by 1 full day and approximately \$680k in costs to Medicare and MediCal for readmissions to the hospital and Emergency Department visits, from pre-enrollment to post enrollment for these severely ill patients. Actual expenses devoted to operation of the CCN in 2015 were \$558,314, and the 2016 budget for the CCN is \$770,516.

Outpatient Care Management program – We are starting an outpatient program to assist patients with chronic disease to better manage their care in an outpatient setting. Priority patients will include patients transitioning from the hospital to home to reduce readmissions. The Outpatient Care Management team, including an RN Care Manager, LVN and Medical Assistants will work with clinic physicians to more effectively manage the “rising risk” patients, ensuring appropriate health screening and early intervention. The team will also focus on ACO patients including the 5,700 enrolled Medicare beneficiaries and the patients with diagnoses associated with the BPCI program including Congestive Heart Failure, Pneumonia, Total Joint and Stroke. The budget for this new program in 2016 is \$531,382.

CONCLUSION

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

APPENDICES

Appendix A: Secondary Data Dictionary and Processing

Introduction

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

ZIP Code Definitions

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

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

In order to incorporate these patients into the analysis, the point location (latitude and longitude) of all ZIP codes in California²⁶ were compared to ZCTA boundaries.²⁷ Because various morbidity and mortality data sources were available in different years, this comparison was made between the ZCTA boundaries and the point locations of ZIP codes in April of the year (or the final year in the case of variables aggregated over multiple years) for which the morbidity and mortality variables were reported. All ZIP codes (whether PO Box or unique ZIP code) that were not included in the ZCTA dataset were identified. These ZIP codes were then assigned to either ZCTA that they fell inside of, or in the case of rural areas that are not completely covered by ZCTAs, the ZCTA to which they were closest. Morbidity and

²⁶ Datasheer, L.L.C. (2015, April 15). *ZIP Code Database DELUXE BUSINESS*. Retrieved from Zip-Codes.com: <http://www.Zip-Codes.com>

²⁷ U.S. Census Bureau. (2015). *TIGER/Line® Shapefiles and TIGER/Line® Files*. Retrieved August 31, 2011, from <http://www.census.gov/geo/maps-data/data/tiger-line.html>

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

Data Sources

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

Kaiser Permanente Community Commons Data Platform (CCDP)

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

Table 33: Demographic Variables Collected from the US Census Bureau³⁰

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

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

race)	race)	Survey 5-year Estimate Table DP05
Percent American Indian (not Hispanic)	Total population - Not Hispanic or Latino - American Indian and Alaska Native alone	2013 American Community Survey 5-year Estimate Table DP05
Percent Pacific Islander (not Hispanic)	Total population - Not Hispanic or Latino - Native Hawaiian and Other Pacific Islander alone	2013 American Community Survey 5-year Estimate Table DP05
Percent White (not Hispanic)	Total population - Not Hispanic or Latino - White alone	2013 American Community Survey 5-year Estimate Table DP05
Percent Other or Two or More Races (not Hispanic)	Total population - Not Hispanic or Latino - Some other race alone; Total population - Not Hispanic or Latino - Two or more races	2013 American Community Survey 5-year Estimate Table DP05
Percent Female	Total population - Female	2013 American Community Survey 5-year Estimate Table DP05
Percent Male	Total population - Male	2013 American Community Survey 5-year Estimate Table DP05
Median Age	Median age (years)	2013 American Community Survey 5-year Estimate Table DP05
Population by Age Group	Under 5 years; 5 to 9 years; 10 to 14 years; 10 to 14 years; 20 to 24 years; 25 to 34 years; 35 to 44 years; 5 to 54 years; 55 to 59 years; 60 to 64 years; 65 to 74 years; 75 to 84 years; 85 years and over	2013 American Community Survey 5-year Estimate Table DP05
Percent Single Female Headed Households	Female householder, no husband present, family household	2013 American Community Survey 5-year Estimate Table S1101
Percent 25 or Older Without a High School Diploma	100 - Percent high school graduate or higher	2013 American Community Survey 5-year Estimate Table S1501
Percent Families with Children in Poverty	All families - Percent below poverty level; Estimate; With related children under 18 years	2013 American Community Survey 5-year Estimate Table S1702
Percent Single Female Headed	Female householder, no husband present - Percent below poverty level; Estimate; With	2013 American Community Survey 5-year Estimate Table

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

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

Table 34: Census Variables Used for Mortality and Morbidity Rate Calculations^{3, 30}

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

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

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

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

Category	Variable Name	ICD9/E-Codes	
Cancer	Breast Cancer		174, 175
	Colorectal Cancer		153, 154
	Lung Cancer		162, 163
	Prostate Cancer		185
Chronic Disease	Diabetes		250
	Hypertension		401-405
	Heart Disease	410-417, 428, 440, 443, 444, 445, 452	
	Chronic Kidney Disease		580-589
	Stroke		430-436, 438
Infectious Disease	HIV/AIDS		042-044
	STIs	042-044, 090-099, 054.1, 079.4	
	Tuberculosis		010-018, 137
Injuries ²⁸	Assault		E960-E969, E999.1
	Self-Inflicted Injury		E950-E959
	Unintentional Injury	E800-E869, E880-E929	
Mental Health	Mental Health		290, 293-298, 301,311
	Mental Health: Substance Abuse		291-292, 303-305
Respiratory	Asthma		493-494
	Chronic Obstructive Pulmonary Disease (COPD)		490-496
Other	Hip Fractures		820
	Oral cavity/Dental		520-529
	Osteoporosis		733

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

²⁸ E-code definitions for injury variables derived from CDC. (2011). *Matrix of E-code Groupings*. Retrieved March 4, 2013, from Injury Prevention & Control: Data & Statistics(WISQARS): http://www.cdc.gov/injury/wisqars/ecode_matrix.html

Table 36: CDPH Birth and Mortality Data by ZIP Code

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

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

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

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

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

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

Table 37: Remaining Secondary Variables

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

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

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

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

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

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

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

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

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

General Processing Steps

Rate Smoothing

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

The next step in the analysis process was to calculate rates for each of these variables. However, rather than calculating raw rates, empirical Bayes smoothed rates (EBR) were created for all variables possible.²⁹ Smoothed rates are considered preferable to raw rates for two main reasons. First, the small population of many ZCTAs, particularly those in rural areas, meant that the rates calculated for these areas would be unstable. This problem is sometimes referred to as the small number problem. Empirical Bayes smoothing seeks to address this issue by adjusting the calculated rate for areas with small populations so that they more closely resemble the mean rate for the entire study area. The amount of this adjustment is greater in areas with smaller populations, and less in areas with larger populations.

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

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

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

EBR were attempted for every overall variable, but could not be calculated for certain variables. In these cases, raw rates were used instead. The final rates in either case for H, ED, and the basic mortality variables were then multiplied by 10,000, so that the final rates represent H or ED discharges, or deaths, per 10,000 people.

²⁹ Anselin, L. (2003). *Rate Maps and Smoothing*. Retrieved February 16, 2013, from <http://www.dpi.inpe.br/gi>

Age Adjustment

The additional step of age adjustment³⁰ was performed on the all-cause mortality variables. Because the occurrence of these conditions varies as a function of the age of the population, differences in the age structure between ZCTAs could obscure the true nature of the variation in their patterns. For example, it would not be unusual for a ZCTA with an older population to have a higher rate of ED visits for stroke than a ZCTA with a younger population. In order to accurately compare the experience of ED visits for stroke between these two populations, the age profile of the ZCTA needs to be accounted for. Age adjusting the rates allows this to occur.

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

Benchmark Rates

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

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

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

County and state benchmark rates were either calculated using CDPH data reported at the county and state level^{31,32}, or else obtained from the County Health Status Profiles 2014.³³ The resulting benchmark

³⁰ 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.

³¹ 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>

³² 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/>

values for CDPH and OSHPD variable were all reported as rates per 10,000 unless the original variable was reported using some other standard as described below.

Processing for Specific Variables

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

Community Health Vulnerability Index (CHVI)

The CHVI is a health care disparity index largely based on the Community Need Index (CNI) developed by Dignity Health.³⁴ The CHVI uses the same basic set of demographic variables to address health care disparity as outlined in the CNI, but these variables are aggregated in a different manner to create the CHVI. For this report, the following nine variables were obtained from the 2013 American Community Survey 5-year Estimate dataset at the census tract level:

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

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

Infant Mortality Rate

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

Teen Pregnancy Rate

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

Life Expectancy at Birth

³³ 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>

³⁴ Barsi, E. L., & Roth, R. (2005). The "Community Need Index". *Health Progress*, 86(4), 32-38. Retrieved from <https://www.chausa.org/docs/default-source/health-progress/the-community-need-index-pdf.pdf?sfvrsn=2>

Life expectancy at birth values are reported in years, and were derived from period life tables created in the statistical software program R³⁵ using the Human Ecology, Evolution, and Health Lab's³⁶ example period life table function. This function was modified to calculate life tables for each ZCTA, and to allow the life table to be calculated from submitted age stratified mortality rates. The age stratified mortality rates were calculated for each ZIP code by dividing the total number of deaths in a given age category from 2010 - 2012 by three times the ZCTA population for that age group in 2010 (smoothed to EBR). The age group population was multiplied by three to match the three years of mortality data that were used to derive the rates. Multiple years were used to increase the stability of the estimates.

Years Potential Life Lost (75)

Years Potential Life Lost (75) is a metric that can be used to compare health status across populations that better accounts for premature loss of life than many other metrics³⁷. It was calculated here following the method described by Dranger and Remington⁹. In brief, this involved calculating EBR smoothed age stratified death rates using CDPH data from 2010 – 2011. For each age stratification group under 75 years of age, the midpoint age of the group was subtracted from 75, and the resulting value was multiplied by the smoothed age stratified rate. The resulting values for each age stratification were then age adjusted using a 2010 California base population. These values were then individually multiplied by 10,000 and summed across all age groups to estimate the years of potential life lost before 75 out of 10,000 people.

Diversity Index

The diversity index was calculated to measure the racial and ethnic diversity of geographic regions within the HSA. It was calculated using concepts from Iceland³⁸, but using the Shannon's evenness index (Beals, Gross, & Harrell, 2000) rather than the specific methodology described therein. The diversity index represents how evenly population within a given geographic unit is divided between the following seven racial/ethnic groups (described previously): Asian, Black, Hispanic, American Indian, Pacific Islander, White, Other or Two or More Races. Diversity index values range between 0 and 1, with a value of 0 in areas where the entire population belongs to just one racial/ethnic group and a value of 1 in areas with population evenly divided between the seven groups. Readers interested in the specifics of index calculation are referred to the previously listed sources.

³⁵ 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>.

³⁶ Human Ecology, Evolution, and Health Lab. (2009, March 2). *Life tables and R programming: Period Life Table Construction*. Retrieved February 16, 2013, from Formal Demography Workshops, 2006 Workshop Labs: <http://www.stanford.edu/group/eeh/cgi-bin/web/node/75>

³⁷ 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>

³⁸ Iceland, J. (2004). *The Multigroup Entropy Index (Also Known as Theil's H or the Information Theory Index)*. US Census Bureau. Retrieved June 20, 2015, from http://www.census.gov/housing/patterns/about/multigroup_entropy.pdf

Major Crime and Domestic Violence Rates

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

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

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

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

Park Access

The park access variable reports the percent of the 2010 population residing within each ZCTA that lives in a Census block that intersects a ½ mile buffer around the closest park. ESRI's U.S. Parks data set³⁹, which includes the location of local, county, regional, state, and national parks and forests, was used to determine park locations.

Modified Retail Food Environment Index (mRFEI)

The Modified Retail Food Environment Index (mRFEI) variable reports the percentage of the total food outlets in a ZCTA that are considered healthy food outlets. Values below 0 are given for ZCTAs with no food outlets. The mRFEI variable was calculated using a modification of the methods described by the National Center for Chronic Disease Prevention and Health Promotion⁴⁰ 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

³⁹ ESRI. (2010). U.S. and Canada Detailed Streets. *ESRI Data & Maps: StreetMap* (10 edition)

⁴⁰ 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

- Fruit and vegetable markets: NAICS 445230
- Warehouse clubs: NAICS 452910

Food retailers that were considered less healthy included:

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

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

Appendix B: Detailed Analytic Methodology including SHN Categorization

Significant Health Need Identification Process

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

Table 38: Potential Health Needs

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

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

Table 39: Indicators, Health Needs, and Benchmarks

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

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

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

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

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

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

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

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

Table 40: Qualitative Indicators Associated with Potential Health Needs

Potential Health Need Category	Qualitative Indicators
Access to High Quality Health Care and Services	<ul style="list-style-type: none"> ● Continuity of care/coordinated care ● Cost of care/prescription cost/copays ● Culturally sensitive care ● Delayed care ● Dental/oral health ● Distance/transport to care ● ER overwhelm/ overutilization ● Health care for the undocumented ● Health education/ health literacy ● Insurance restrictions/ coverage gaps ● Language barriers ● Long wait times/limited providers/impacted system ● Maternal infant health ● Medi-Cal access ● Pain management ● Patient navigation/referral ● Prevention services/preventative care ● Primary care ● Senior care services ● Specialty care
Access to Behavioral Health Services	<p><u>Mental Health</u></p> <ul style="list-style-type: none"> ● Comorbidity ● Depression-anxiety ● Desire for alternative treatment ● Elderly-Alzheimer’s-dementia ● ER/ Hospital ● Homelessness ● Limited services-lack of capacity ● Mental health/substance abuse ● Need for culturally sensitive care ● Serious mental illness ● Stigma/discrimination ● Stress ● Suicide ● Trauma and/or ACEs <p><u>Substance Abuse</u></p> <ul style="list-style-type: none"> ● Alcohol and other drugs ● Barriers to accessing services ● Co-morbidity ● Criminalization of drugs ● Geographic-safety concerns ● Homelessness ● Limited resources/capacity ● Methamphetamines-cocaine

	<ul style="list-style-type: none"> ● Mental health/substance abuse ● Opiates ● Outreach and education ● Parental and pre-natal use ● Transition aged youth ● Tobacco-E cigs
Affordable and Accessible Transportation	<ul style="list-style-type: none"> ● Lack of transport as a barrier to access health care services ● Lack of transport as a barrier to access healthy foods ● Long distance and difficulty accessing health care services ● No active transport infrastructure ● Personal transportation barriers ● Public transportation barriers
Basic Needs	<p><u>Housing</u></p> <ul style="list-style-type: none"> ● Gentrification/displacement ● Housing discrimination ● Homelessness/shelter crisis ● Lack of affordable housing ● Role of public housing agencies ● Seniors/aging in place ● Substandard housing <p><u>Food Security</u></p> <ul style="list-style-type: none"> ● Cost of living/poverty ● Food banks, pantries, closets ● Lack of quantity and quality of school food ● Safety net programs (CalFresh, WIC, Meals on Wheels) ● Transportation barriers <p><u>Economic Security</u></p> <ul style="list-style-type: none"> ● Loss of safety net benefits ● Need for job training resources ● Safety net benefits (TANF, CalFresh, WIC) ● Stigma/shame of poverty ● Unemployment/lack of jobs <p><u>Education</u></p> <ul style="list-style-type: none"> ● Differences in K-12 opportunity ● Educational attainment (dropouts, GED, higher Ed) ● Financial education and literacy ● Health education and literacy ● High cost of education ● Need for cultural sensitivity ● School discipline issues
Disease Prevention, Management and Treatment	<p><u>Asthma</u></p> <ul style="list-style-type: none"> ● Air pollution/contamination ● Anti-smoking laws and regulations ● Cost of asthma medications ● Environmental triggers (dust, mites, cockroaches, mold) ● Secondhand smoke (cigarettes/marijuana) ● Smoke shops <p><u>Cancer</u></p>

	<ul style="list-style-type: none"> ● Air pollution exposure ● Breast cancer ● Cancer screening programs ● Cervical cancer ● Colorectal cancer ● Early detection ● Lack of healthy eating and active living opportunities ● Lung cancer ● Oncology/oncologists ● Pesticide exposure ● Prevention and education ● Prostate cancer ● Stomach cancer <p><u>CVD/Stroke</u></p> <ul style="list-style-type: none"> ● Congestive heart failure (CHF) ● Cost of medication ● CVD/Stroke ● Diagnosis, management, and treatment ● Lack of healthy eating and active living opportunities ● Hypertension ● Stroke <p><u>HIV/AIDS/STDs</u></p> <ul style="list-style-type: none"> ● Diagnosis, management, and treatment of STIs ● Incidence/prevalence ● Lack of continuity between health systems and public health ● Need for reproductive health education ● Stigma/discrimination ● Vulnerable populations
Active Living and Healthy Eating	<ul style="list-style-type: none"> ● Biking ● CalFresh (EBT) and WIC ● Community gardens ● Cost barriers ● Cost of healthy food ● Cultural barriers ● Need for education and classes ● Farmers markets ● Food access issues ● Food deserts ● Food distribution ● Gyms ● Lack of motivation ● Lack of sidewalks or bike lanes ● Lack of time ● Lack of transportation ● Natural environment (trails and rivers) ● Perishability of fresh foods ● Public parks/pools ● Recreation opportunities

	<ul style="list-style-type: none"> ● Safety ● School physical activity ● Technology and screen time ● Unhealthy food options ● Walking and walkability
Pollution-Free Living and Work Environments	<ul style="list-style-type: none"> ● Air quality ● Environmental hazards/toxins (cockroaches, mold, mildew, asbestos) ● Respiratory conditions (asthma, COPD, infections, allergies) ● Second hand smoke (tobacco and marijuana) ● Transportation
Safe, Crime and Violence-Free Communities	<ul style="list-style-type: none"> ● Alcohol abuse ● Bullying ● Child abuse and trauma ● Child Protective Services ● Domestic Violence ● Drug dealing ● Gang violence ● Gun and knife violence ● Hate crimes ● Homicide ● Human Trafficking ● Motor vehicle accidents ● Pedestrian accidents ● Prostitution ● Rape and sexual assault ● Substance Use ● Tension with police ● Theft

Appendix C: Informed Consent



Informed Consent

Gathering Information for a Community Health Assessment

Purpose:

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

Procedures:

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

Potential Risks or Benefits:

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

Participant's Rights:

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

Confidentiality and Anonymity:

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

How to obtain Additional Information:

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

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

Participant Name (Print)

Interviewer Name (Print)

Participant Signature

Date

Interviewer Signature

Date



Informed Consent
Gathering Information for a Community Health Assessment

Purpose:

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

Procedures:

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

Potential Risks or Benefits:

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

Participant's Rights:

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

Compensation:

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

Confidentiality and Anonymity:

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

How to obtain Additional Information:

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

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

Participant Name Print

Interviewer Name Print

Participant Signature Date

Interviewer Signature Date



Consentimiento Informado

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

Objetivo:

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

Procedimientos:

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

Riesgos Potenciales o Beneficios:

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

Los Derechos del Participante:

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

Compensación

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

Confidencialidad y Anonimato

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

Como obtener más Información:

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

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

Nombre del Participante

Nombre del Entrevistador

Firma del Participante

Fecha

Firma del Entrevistador

Fecha

Appendix D: Key Informant and Focus Group Interview Documents



Key Informant Questionnaire

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

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

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

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

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

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

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

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

Thank you for your participation!



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

Please share...
Tell us a little about you....

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

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

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

2. What is your ethnicity?

Hispanic/Latino

Not Hispanic/Latino

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

African American/Black

Native American/Alaska Native

Asian

White/Caucasian

Hawaiian Native/Pacific Islander

Other (Specify): _____

Hispanic/Latino only

4. What year were you born? _____

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

High school graduate (diploma or the equivalent, for example, GED)

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

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

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

CalFresh (Food Stamps, SNAP, EBT)

Reduced Price School Meal

CalWORKS (TANF)

Section 8 Public Housing

Head Start

Supplemental Security Income (SSI)

Medi-Cal

Women, Infants, & Children (WIC Program)

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

Yes

No

Thank you for your participation!



Tarjeta de Datos Demográficos

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

Cuéntanos un poco acerca de usted...

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

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

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

2. ¿Cuál es tu raza?

Latino/Hispano

No Latino/ Hispano

3. Por favor marca UNO o MÁS grupos raciales que te describe:

Afroamericano/Negro

Nativo Americano/Nativo de Alaska

Asiático

Caucásico/Blanco

Nativo de Hawái/Isleño del Pacífico

Otro (especifica): _____

Solamente Latino/Hispano

4. ¿En qué año naciste? _____

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

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

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

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

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

CalFresh (Cupones De Alimentos, SNAP, EBT)

Comidas escolares gratis y reducido de precio

CalWORKS (TANF)

Vivienda interés social

Head Start

Seguridad de ingreso suplementario (SSI)

Medi-Cal

Programa Mujeres, bebés y niños (WIC)

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

Sí

No

¡Gracias por participar!



Key Informant Interview Guide - Questions

1. **Please, tell me (us) about the community you serve.**
 - *Follow up:* What are the specific geographic areas and/or populations served?
2. **How would you describe the quality of life in the community you serve?**
3. **Please describe the health of the community you serve.**
 - *Follow up:* What are the biggest health issues and/or conditions that your community struggles with?
4. **Of the health issues you've mentioned, which would you say are the most important or urgent to address?**
 - *Follow up:* How would you rank these health issues in terms of importance?
5. **What specific locations struggle with health issues the most?**
 - *Follow up:* What specific groups in the community struggle with these health issues the most?
6. **What are the challenges to being healthy for the community you serve?**
7. **What policies, laws, or regulations prevent the community from living healthy lives?**
8. **What resources exist in the community to help people live healthy lives?**
9. **What would you say has been the impact of the Affordable Care Act [may also be known as Covered California, Obamacare] on the community you serve?**
10. **What is [or who is] needed to improve the health of your community?**
11. **Can you recommend 1 or 2 additional people, groups or organizations you think would be most important to speak to about the health of the community?**
12. **Is there anything else you would like to share with our team about the health of your community [that hasn't already been addressed]?**



Focus Group Guide- Questions

1. **Please, tell us about the community you live in.**
 - Follow Up: What are the specific neighborhoods?
 - Follow Up: What types of people live there (race, age, legal status)?
2. **How would you describe the quality of life in your community?**
3. **How would you describe the health of the community where you live?**
4. **Of the health issues you've mentioned, which would you say are the most important or urgent to address?**
 - Follow up: How would you rank these health issues in terms of importance?
5. **What specific neighborhoods or places in your community struggle with health issues the most?**
 - Follow up: What specific groups in the community struggle with these health issues the most?
6. **What are the challenges to being healthy in your community?**
7. **What rules or laws prevent your community from being healthy?**
8. **What resources exist in your community to help people live healthy lives?**
9. **What would you say has been the impact of universal health care coverage [may also be known as Covered California, Obamacare, ACA] on your community?**
10. **What is needed to improve the health of your community?**
11. **Is there anything else you would like to share with our team about the health of your community [that hasn't already been addressed]?**



Focus Group Guide- Youth

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

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

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

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

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

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

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

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



Guía de Grupo de Enfoque

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

1. **Por favor, díganme de la comunidad adonde ustedes viven.**
 - **Seguimiento:** ¿Cuáles son los barrios específicamente?
 - **Seguimiento:** ¿Qué tipos de personas viven allí? (edad, raza, genero, estatus legal)
2. **¿Cómo es la vida en la comunidad adonde ustedes viven?**
3. **Por favor, describen la salud de la comunidad adonde ustedes viven**
4. **¿De los problemas de salud que han comentado, cuales son los más importantes de resolver?**
 - **Seguimiento:** ¿Estos son los problemas de salud que han dijeron... cuales son los más importantes/urgentes de resolver?
5. **¿Qué grupos específicos (*tipos de gente por edad, raza, genero, estatus legal*) en tu comunidad luchan lo más con estos problemas de salud?**
 - **Seguimiento:** ¿Qué áreas o barrios específicos luchan con problemas de salud lo más?
6. **¿Cuáles son las barreras para vivir saludable en la comunidad adonde ustedes viven?**
7. **¿Qué tipos de leyes, reglas, o prácticas impiden tu comunidad de vivir saludable?**
8. **¿Qué recursos existen en tu comunidad para ayudar las personas vivir saludable?**
9. **¿El Affordable Care Act ha impactado la comunidad adonde ustedes viven? [también se conoce como Covered California, Obamacare]**
10. **¿Qué es necesario para mejorar la salud de tu comunidad?**
 - **Seguimiento:** ¿Hay algún tipo de persona que podría ayudar mejorar la salud de la comunidad?
11. **¿Hay algo más que les gustaría compartir con nosotros la salud de la comunidad?**
 - **Seguimiento:** ¿Hay preguntas?



2016 Community Health Needs Assessment – Greater Sacramento Region

Project Summary January 2015 – June 2016

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

Project Management:

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

Organization Information:

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

Project Overview:

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

Key Deliverables:

Each CHNA report will:

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

Strategic Partners:

Lead project consultation:

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

Data collection, analysis and GIS mapping:

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

Transcription and translation services:

Cherie Yure
Southern California Transcription Services

Project Orientation:

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

Project Sponsors:



2016 Community Health Needs Assessment (CHNA)

About the CHNA Project

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

About the CHNA

The CHNA Reports

Each CHNA report includes:

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

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

How the Project Works

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

About Us

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

The Team

Valley Vision - www.valleyvision.org, (916) 325-1630

2320 Broadway, Sacramento, CA 95818

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

Project Sponsors



Evaluación de las necesidades de salud de la comunidad- 2016

Acerca de la evaluación

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

Cada evaluación incluye:

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

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

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

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

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Acerca de la
evaluación

Que incluye la
evaluación

Como se
conduce la
evaluación

Acerca de Valley
Vision

Nuestro Equipo

Patrocinadores
del proyecto



Dignity Health



KAISER PERMANENTE



Sutter Health
We Plus You

UC DAVIS
HEALTH SYSTEM



You're invited to a group conversation!

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



Date:

Time:

Location:

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

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

Questions? Contact (PM) at Valley Vision, 916.325.1630

Appendix E: List of Key Informants

Organization	Number of Participants	Area of Expertise	Populations Served	Date
El Dorado Health and Human Services	3	County Agency; public health	All residents of El Dorado County	5.20.15
El Dorado Public Health Nursing	1	County Agency; public health	All residents of El Dorado County	5.20.15
El Dorado Community Health Center	1	Federally Qualified Health Center; Community Health Center	Low-income; medically underserved; racial or ethnic minorities	7.15.15
El Dorado County Mental Health Clinic	1	County Agency; behavioral health	All residents of El Dorado County	7.15.15
First 5 El Dorado	1	County Agency	Children and families of El Dorado County; low-income; medically underserved; racial or ethnic minorities	5.9.16

Appendix F: List of Focus Groups

Agency	Date	Number of Participants	Demographic Information
Center for Violence Free Relationships	2.9.16	6	Community members
Food Bank of El Dorado County	2.16.16	4	Food Bank staff
New Morning Youth and Family Services	5.31.16	6	Latina mothers/community members; uninsured; undocumented

Appendix G: Resources Potentially Available to Meet Identified Health Needs

Resource/ Organization Name	Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence- Free Communities
Agency on Aging El Dorado County Area	Placerville	x	x			x	x		x
Alta California Regional Center	Placerville	x	x						
Alzheimer's Association	North Sacramento	x							
American Diabetes Association	North Highlands		x	x			x		
American Red Cross	North Sacramento		x			x		x	
Big Brothers & Big Sisters of El Dorado County	Cameron Park								
Breathe California of Sacramento- Emigrant Trails	Downtown Sacramento		x				x		x
CASA: El Dorado County	Placerville	x							
Center for AIDS Research, Education and Services- CARES Community	Midtown Sacramento	x	x	x					

Resource/ Organization Name	Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence- Free Communities
Health									
Child Abuse Prevention Center	North Highlands							x	x
Choices for Children of El Dorado County	Cameron Park			x		x			
Divide Wellness Center	Georgetown		x					x	
El Dorado Community Health Center	Placerville, Diamond Springs, Cameron Park	x	x				x		x
El Dorado Community Vision Coalition	El Dorado Hills	x		x					x
El Dorado County Federated Church	Placerville					x			
El Dorado County Health and Human Services	El Dorado Hills, Placerville	x	x	x	x	x	x		x
El Dorado County Mental Health Clinic	Placerville	x							x

Resource/ Organization Name	Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence- Free Communities
El Dorado County Public Health	Placerville	x	x	x			x		
El Dorado County Women, Infants and Children (WIC)	Placerville			x		x			
El Dorado Hills Community Services District	El Dorado Hills			x					
Eskaton	Placerville, Cameron Park	x	x			x			
First 5 El Dorado	Placerville	x	x	x		x			
Food Bank of El Dorado County	Cameron Park					x			
Goodwill- Sacramento Valley & Northern Nevada	Rosemont					x			
Green Valley Church	Placerville	x				x			
Hangtown Haven Inc.	Placerville					x			x

Resource/ Organization Name	Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence- Free Communities
Hope House	Placerville					x			
House of Prayer Family Fellowship	Garden Valley					x			
Infant Parent Center	Placerville	x	x						
Legal Services of Northern California- Health Rights	Downtown Sacramento					x			
Light of the Hills Lutheran Church	El Dorado Hills					x			
Lilliput Children's Services	El Dorado Hills					x			
Marshall Medical Center	Placerville		x				x		
Marshall Medical Center Diabetes and Nutrition Education Program	Placerville			x			x		
Mercy Housing	El Dorado Hills					x			x

Resource/ Organization Name	Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence- Free Communities
Mother Teresa Maternity House of El Dorado County	Placerville					x			
New Morning Youth and Family Services	Placerville	x				x			
Partners in Care of El Dorado County	Placerville	x	x						
Pioneer Bible Church	Somerset					x			
Pollock Pines Community Church	Pollock Pines					x			
PRIDE Industries	Placerville					x			x
Progress House	Placerville	x				x			x
Sacramento Covered	Rosemont		x						x
Senior Peer Counseling Program	Placerville					x			

Resource/ Organization Name	Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence- Free Communities
Shingle Springs Tribal Health Community Clinic	Placerville	x	x						
Shingle Springs Tribal TANF Program	Shingle Springs				x	x			x
Shriner's Hospital for Children-Northern California	Sacramento		x						
Sierra Foothill AIDS Foundation	Diamond Springs		x			x			
Sierra Health Foundation	North Sacramento	x	x	x			x		x
Snowline Hospice Grief and Bereavement	Diamond Springs	x							
Su Familia- The National Hispanic Family Health Helpline	Washington, D.C		x						x
The Center for Violence Free Relationships	Placerville	x							
The Community Resource Center (CRC)	Placerville				x	x			

Resource/ Organization Name	Site Location(s)	Behavioral Health Services	High Quality Health Care and Services	Active Living and Healthy Eating	Affordable and Reliable Transportation	Basic Needs	Disease Prevention and Management	Pollution-Free Living and Work Environments	Safe, Crime and Violence- Free Communities
The Mental Health Association in California	Midtown Sacramento	x							
The Upper Room Dining Hall	Placerville					x			
U.S Department of Veterans Affairs- Vet Center	Arden-Arcade, Citrus Heights	x				x			x
UC Davis level I trauma center	Sacramento	x	x				x		x
VA Northern California Health Care System	Mather	x	x			x			x
Volunteers of America- Northern California & Northern Nevada	Arden-Arcade					x			
WarmLine Family Resource Center	Downtown Sacramento, Rocklin	x	x			x			x
YMCA of Superior California	El Dorado			x		x			x
YWCA	Midtown Sacramento	x				x	x		