A Community Health Needs Assessment

of the

Eden Medical Center Service Area

Conducted on the behalf of:

Eden Medical Center
20103 Lake Chabot Road
Castro Valley, CA 94546

Conducted by:

COMMUNITY HEALTH INSIGHTS

May 2016

Acknowledgements

We are deeply grateful to all those who contributed to the community health needs assessment conducted on behalf of Eden Medical Center. First, many dedicated community health experts and members of various social service organizations serving the most vulnerable members of the Eden Medical Center community gave their time and expertise as key informants to help guide and inform the findings of the assessment. Many community residents also participated and volunteered their time to tell us what it was like to live in the Eden Medical Center Medical Center community with limited or no access to healthcare and the basic resources needed to live a healthy life. To everyone who supported this important work we extend our deepest heartfelt gratitude.

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Introduction

Both state and federal law require that nonprofit hospitals conduct a community health needs assessment (CHNA) every three years to identify and prioritize the significant health needs of the communities they serve. The results of the CHNA guide the development of implementation plans aimed at addressing identified health needs.

Federal regulations define a *health need* accordingly: "…health needs include requisites for the improvement or maintenance of health status in both the community at large and in particular parts of the community (such as particular neighborhoods or populations experiencing health disparities)" (p. 78963).[1]

This report documents the processes, methods, and findings of a CHNA conducted on behalf of Eden Medical Center (EMC), a Sutter Health affiliate hospital located in Castro Valley, California. The CHNA was conducted over a period of eight months, beginning in May 2015, and concluding in December 2015. Specifically, the objective of the 2016 CHNA was to:

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

EMC is located in Castro Valley, California, a community located in Alameda County. The community served by EMC, or the hospital service area (HSA), was defined by 10 ZIP codes noted in the table below. This area was identified as the HSA as most of EMC's patients resided in these ZIP codes. The HSA was home to over 370 thousand community residents, and was rich in diversity along a number of dimensions.

ZIP Code	Population	Median Age	Median Income ($)	Percent Minority
94541	61,311	34.7	$56,656	77.7
94542	12,385	32.9	$84,817	66.2
94544	76,542	32.8	$60,448	83.6
94545	30,083	37.5	$69,488	82.7
94546	42,650	40.9	$73,099	47.3
94552	14,719	43.6	$138,447	58.7
94577	44,344	41.3	$63,388	72.5
94578	39,225	34.0	$51,518	79.5
94579	21,652	41.6	$72,369	75.5
94580	28,701	36.3	$71,098	72.7
Total HSA Population	**371,612**			
Alameda County		*36.8*	*$72,112*	*66.3*
CA State		*35.4*	*$61,094*	*60.0*

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

Processes and Methods

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

Data collected and analyzed included both primary or qualitative data, and secondary or quantitative data. Primary data included 14 interviews with community heath experts as well as four focus groups conducted with 44 community residents (see Appendices F and G). Secondary data included health outcome and health factor indicators. Health outcome indicators included measures of both mortality and morbidity such as mortality rates, emergency department visit and hospitalization rates, and primary reasons community residents sought primary care. Health factor indicators included measures of 1) health behaviors such as diet and exercise, tobacco, alcohol, and drug use; 2) clinical care including access and quality of care; 3) social and economic factors such as race/ethnicity, income, educational attainment, employment, and similar; and 4) the physical environment measures such as air and water quality, housing stability, and transit and mobility resources. In all, 114 different health outcome and factor indicators were collected for each of the 10 ZIP codes included in the assessment.

Data were analyzed to identify Communities of Concern within the HSA. These are defined geographic areas (ZIP codes) and populations within the HSA that have the greatest concentration of poor health outcomes and are home to more medically underserved, low income, and diverse populations at greater risk for poorer health. Communities of Concern were important to the overall CHNA methodology because, after assessing the HSA more broadly, they allowed for a focus on those portions of the HSA likely experiencing the greatest health disparities.

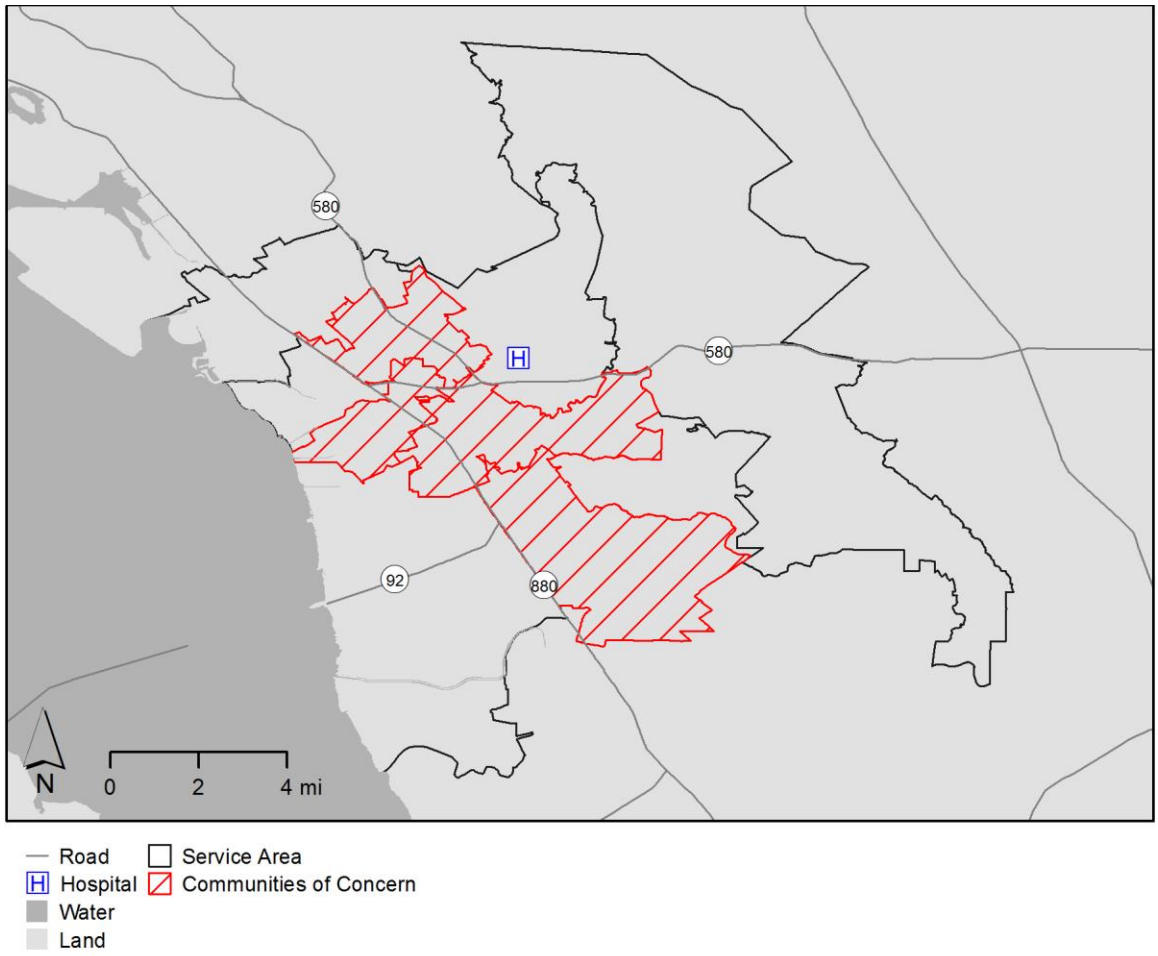
Findings

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

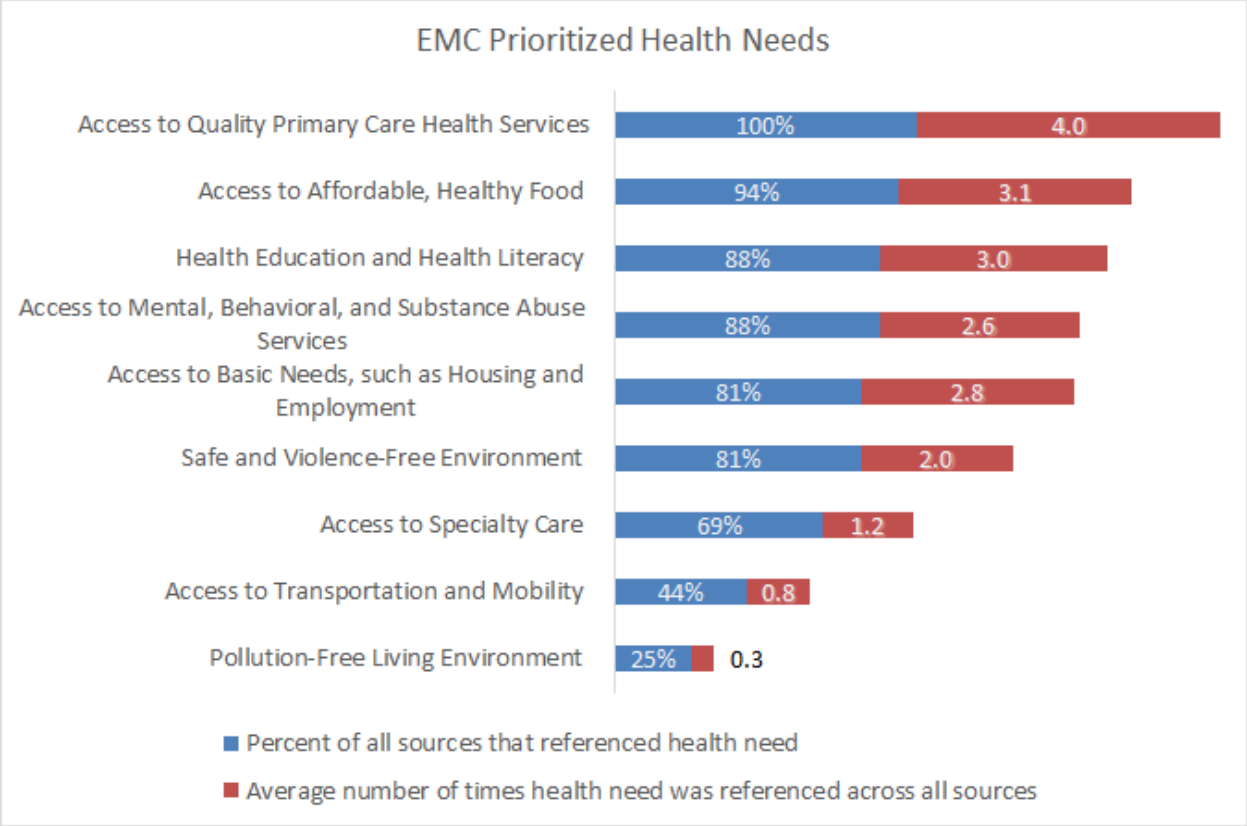
ZIP Code	Community/Area*	Population
94541	Northern Hayward and Cherryland	61,311
94544	Southern Hayward	76,542
94578	Ashland	39,225
94580	San Lorenzo/Ashland	28,701
Total Population Communities of Concern		*205,779*
Total Hospital Service Area Population		*371,612*
CC Population as a Percent of Total HSA Population		*55.3%*

(Source: US Census, 2013)

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



Primary and secondary data were also analyzed to identify and prioritize the significant health needs within the EMC Communities of Concern. This included identifying 10 potential health needs (PHNs) that could be identified in these communities. These potential health needs were those identified in the previously conducted CHNA for EMC (conducted in 2013). Data were analyzed to discover which, if any, of the PHNs were present in the EMC Communities of Concern. In all, nine of the 10 PHNs were identified as significant health needs. After these were identified, they were prioritized based on an analysis of primary data sources that discussed the potential health need as a significant health need. These are displayed in the figure below. The length of the bar denotes prioritization. In the figure, the blue portion of the bar represents how many primary data sources referenced the PHN as a current, significant health need. This was combined with the average number of times that each potential health need was referenced among all primary data sources, shown with the red portion of the bar.



The identified significant health needs for the EMC Communities of Concern are listed below in prioritized order. Secondary data indicators that had undesirable rates in at least 75% of the Communities of Concern are listed in the table below each significant health need. Qualitative themes that emerged during analysis are also provided in the table.

1. Access to Quality Primary Care Health Services

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

Quantitative Indicators	Qualitative Themes
• Colorectal cancer ED visits • Total ED visits (utilization) • Colorectal cancer hospitalizations • Total hospitalizations (utilization)	• Affordability of healthcare • No health insurance for undocumented residents • Low quality healthcare services—limited time with provider, misdiagnoses • Limited availability of appointments • Cultural competency of providers

2. Access to Affordable, Healthy Food

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

Quantitative Indicators	Qualitative Themes
• USDA defined food deserts • Mortality due to diabetes • Mortality due to hypertension • Mortality due to stroke • Diabetes ED visits • Heart disease ED visits • Hypertension ED visits • Kidney disease ED visits • Stroke ED visits • Diabetes hospitalizations • Hypertension hospitalizations • Kidney disease hospitalizations • Stroke hospitalizations	• Costs of healthier foods relative to fast food • Number of and availability of fast food restaurants • Limited availability of fresh food outlets • Stress as a main driver of poor nutrition • Cultural influences on diet and nutrition

3. Health Education and Health Literacy

The third highest priority significant health need for the EMC HSA was health education and health literacy. Knowledge is important for individual health and well-being, and health education interventions are powerful tools to improve community health. When community residents lack adequate information on how to prevent, manage, and control their health conditions, those conditions tend to worsen. Health education around infectious disease control (e.g. STI prevention, influenza shots) and intensive health promotion and education strategies around the management of chronic diseases (e.g. diabetes, hypertension, obesity, and heart disease) are important for community health improvement. Health literacy pertains to the extent that people have the knowledge and ability to obtain, process, and understand health information and services needed to make appropriate health decisions. [2] Health education is important, but equally important is health literacy where the people have the knowledge and ability to understand health information and are able to navigate the health care system.

Quantitative Indicators	Qualitative Themes
• Mortality due to diabetes • Mortality due to hypertension • Mortality due to injuries • Mortality due to stroke • Diabetes ED visits • Heart disease ED visits • Hypertension ED visits	• Limited information available following diabetes diagnosis • Lack of knowledge in chronic disease management practices • Understanding and embracing health prevention behaviors • Poor dietary habits, limited understanding of nutritional values of certain foods • Limited understanding of managing multiple diseases • Lack of understanding on health benefits of active living

[2] Almader-Douglas, D. (2013). *Health Literacy*. National Network of Libraries of Medicine. Retrieved from https://nnlm.gov/outreach/consumer/hlthlit.html

• Kidney disease ED visits • Stroke ED visits • Unintentional injury ED visits • Diabetes hospitalizations • Hypertension hospitalizations • Kidney disease hospitalizations • Stroke hospitalizations • Unintentional injury hospitalizations • Percent smokers • Teen pregnancy rates	

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

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

Quantitative Indicators	Qualitative Themes
• Health professional shortage area: mental health • Mental health ED visits • Substance abuse ED visits • Suicide ED visits • Substance abuse hospitalizations	• Living in a constant state of stress and anxiety due to limited resources such as food and shelter • Substance abuse as self-medication for mental heath issues • Untreated adverse, traumatic childhood experiences impacting one's health and well-being • Lack of substance abuse treatment resources • Lack of mental health services available in the community

5. Access to Basic Needs, such as ~~H~~ousing and Employment

The fifth highest priority significant health need for the EMC HSA was access to basic needs such as housing and jobs. Access to affordable and clean housing, stable employment, quality education, and adequate food for health maintenance are vital for survival. Maslow's Hierarchy of Needs[3] says that only when members of a society have their basic physiological and safety needs met can they then become engaged members of society and self-actualize or live to their fullest potential, including their health.

Quantitative Indicators	Qualitative Themes
• Median household income • Percent no high school diploma • Percent receiving public assistance • Number of persons per housing unit	• High cost of quality housing • Housing instability • High cost to rent housing • Substandard quality of affordable housing

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

• Percent renting • Percent unemployed • Housing vacancy rates	• Overcrowded housing conditions • Low-wage jobs

6. Safe and Violence-Free Environment

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

Quantitative Indicators	Qualitative Themes
• Traffic accidents with fatalities • Assault ED visits • Mental health ED visits • Substance abuse ED visits • Substance abuse hospitalizations	• Violence in neighborhoods • Bullying in schools • Unsafe streets for pedestrian traffic • Mentally ill individuals on the streets • Fear of being out-of-doors limiting physical activity • High crime rates in low income areas • Personal safety as a priority health concern • Level of violence in parks and recreation areas

7. Access to Specialty Care

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

Quantitative Indicators	Qualitative Themes
• Mortality due to diabetes • Mortality due to hypertension • Diabetes hospitalizations • Hypertension hospitalizations • Kidney disease hospitalizations • Stroke hospitalizations	• Affordability of specialty care • Availability of specialty care for low income residents

8. Access to Transportation and Mobility

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

Quantitative Indicators	Qualitative Themes
• Percent living within one-half mile of public transit	• Limited public transportation options • Poor transportation infrastructure in unincorporated areas within EMC HSA • No automobile ownership

9. Pollution-Free Living Environment

The ninth highest priority significant health need for EMC Communities of Concern was a pollution-free living environment. Living in a pollution-free environment is essential for health. Individual health is determined by a number of factors, and some models show that one's living environment, including the physical (natural and man-made) and socio-cultural environment, has more impact on individual health than one's lifestyle, heredity, or access to medical services.[4]

Quantitative Indicators	Qualitative Themes
• Asthma ED visits • COPD ED visits • Lung cancer ED visits • Asthma hospitalizations • Lung cancer hospitalizations • Percent smokers	• High rates of lung cancer in certain areas within the EMC HSA • Respiratory issues arising from living in substandard housing

Limitations

Study limitations included challenges obtaining secondary data and assuring community representation via primary data collection. Most data used in this assessment were not available by race/ethnicity. In addition, data on behavioral issues and conditions like obesity were both difficult to obtain at the sub-county level and were not available by race and ethnicity; therefore, county rates were used. Data timeliness was also a challenge, because some data represent different years. However, these are clearly noted to allow for proper data comparison.

Conclusion

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

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

Introduction

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

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

The Department of Treasury, Internal Revenue Service, issued final regulations effective December 29, 2014, that specify the requirements regarding nonprofit or charitable hospitals conducting a CHNA. These regulations define a health need accordingly: "…health needs include requisites for the improvement or maintenance of health status in both the community at large and in particular parts of the community (such as particular neighborhoods or populations experiencing health disparities)"[5]. The proposed regulations go on to describe requisites for the improvement or maintenance of health status, and indicate that these include "…not only the need to address financial and other barriers to care but also the need to prevent illness, to ensure adequate nutrition, or to address social, behavior, and environment factors that influence health in the community" (p. 78963). Further, the final regulations specify that nonprofit hospitals may build upon a previously conducted CHNA, rather than create a new CHNA every three years.

This report documents the processes, methods, and findings of a CHNA conducted on behalf of Eden Medical Center (EMC), a Sutter Health affiliate hospital located in Castro Valley, California. The CHNA was conducted over a period of eight months, beginning in May 2015 and concluding in December 2015. Building on federal and state requirements, the objective of the 2016 CHNA was to:

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

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

1. What are the "Communities of Concern" as identified in the 2013 CHNA?
2. What is the current health status of these communities?
3. Who within the community (subgroups) is/are experiencing disparities?
4. What factors are contributing to the health status of those experiencing disparities?

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

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

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

Organization of this Report

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

Definition of the Community Served by Eden Medical Center

Eden Medical Center is located in Castro Valley, California, a community located in Alameda County. Castro Valley is the largest unincorporated community in Alameda County, and the fifth largest in California. The larger community served by EMC was defined using ZIP code boundaries. The hospital service area (HSA) included a geographic area comprised of 10 ZIP codes, with the majority of patients served by EMC residing within these ZIP codes. The major cities in the HSA include Ashland, Brookshire, Cherryland, Fairview, Hayward, Russell City, and San Leandro. The HSA is depicted in Figure 1. As shown in the legend, black lines denote ZIP code boundaries that are included in the EMC HSA. The San Francisco Bay borders the western boundary of HSA.

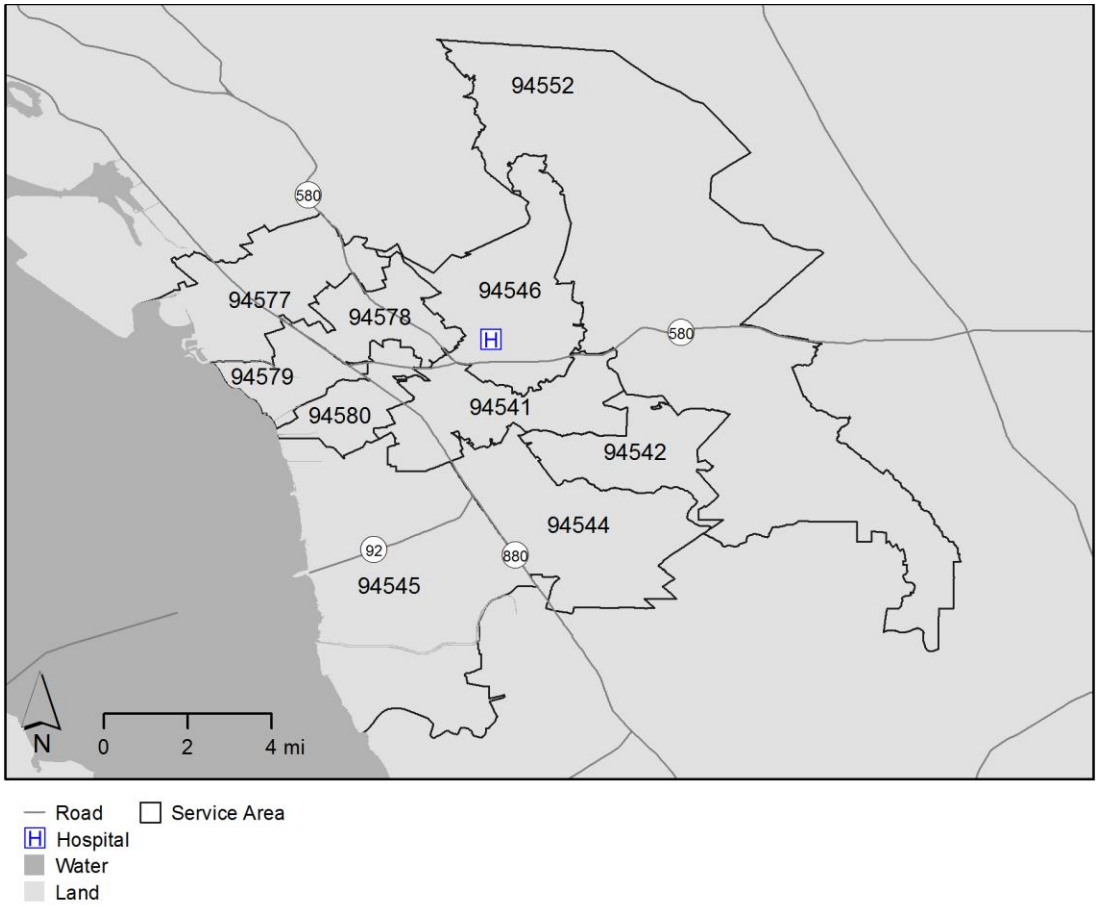


Figure 1: EMC HSA

General Overview of Community

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

Table 1: Population, median age, median income, and percent minority for each ZIP code in the EMC HSA

ZIP Code	Population	Median Age	Median Income	Percent Minority
94541	61,311	34.7	$56,656	77.7
94542	12,385	32.9	$84,817	66.2
94544	76,542	32.8	$60,448	83.6
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(Source: US Census, 2013)

The HSA was home to over 370,000 residents. Median age varied from a low of 32.8 years for ZIP code 94544 (S. Hayward) to a high of 43.6 for ZIP code 94552. Median income ranged from $56,656 for ZIP code 94541 (N. Hayward/Cherryland), to $138,447 for 94552 (Castro Valley). Further, the majority of residents in all ZIP codes but one—94546—were non-White or Hispanic.

The HSA was rich in racial and ethnic diversity as well. Further examination of racial and ethnic diversity in the HSA is examined in the map below. Areas with index values closer to one indicate a population more evenly divided between race and ethnic groups. In the figure, census tracts within each ZIP code in the HSA are highlighted with different colors to show different values of the diversity index. Darker colored census tracts have a higher diversity index, and thus more diverse populations.

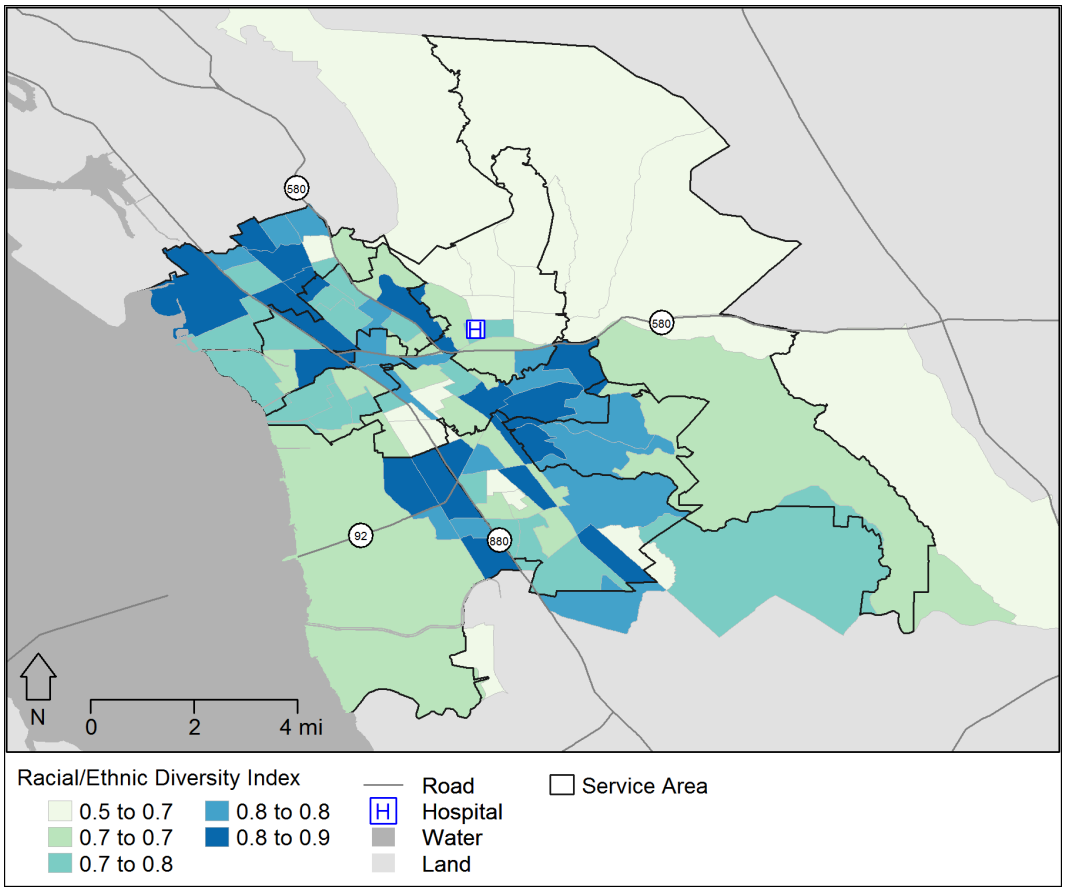

Figure 2: Diversity index for EMC HSA

Figure 2 shows that the vast majority of the EMC HSA was highly diverse.

Processes and Methods

Determination of Health Status – Conceptual Model

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

known County Health Rankings.[6] The model includes health indicators organized into health outcomes and health factors, and then further organized into smaller categories such as morbidity and mortality; health behaviors; clinical care; social and economic factors; and the physical environment. Counties across the nation are then ranked based on each of the indicators in the model in an attempt to compare the health status of one county to the other. The creators of the model write:

> *Helping communities become healthier places to live, learn, work, and play means attending to many interrelated factors. These include health factors such as access to clinical care and improvements in healthy behaviors, such as diet and exercise, but also social and economic factors, such as neighborhood safety, employment, housing, and transit. By monitoring these factors, we can identify avenues to create and implement evidence-informed policies and programs that improve community well-being and health.*[7]

The conceptual model presented in Figure 3 is a slightly modified version of the County Health Rankings Model that allowed for the organization of data for this community health assessment (for a detailed description of this organization see Appendix A).

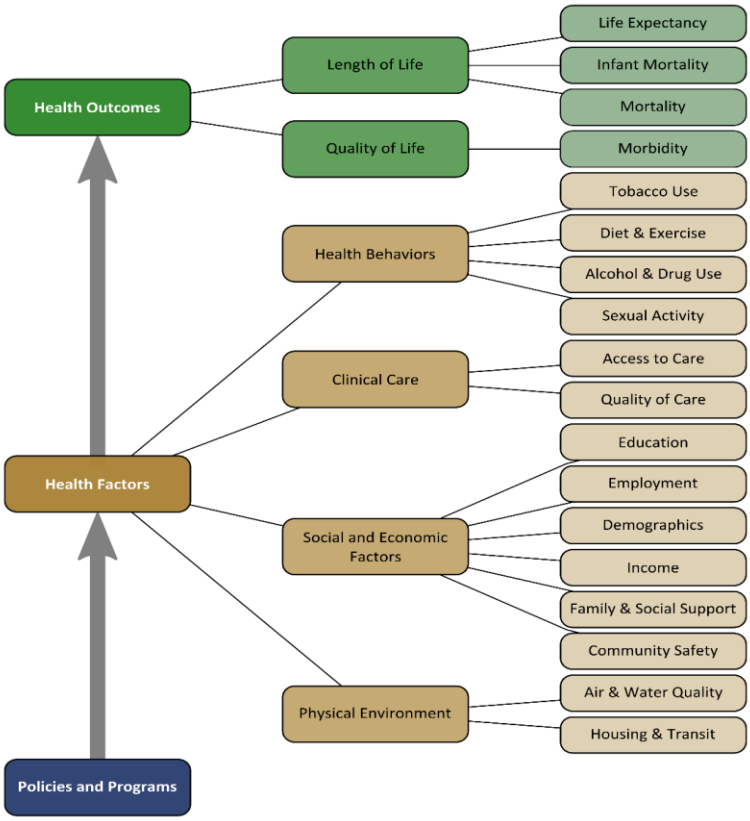

Figure 3: EMC Community Health Assessment Conceptual Model as modified from the County Health Rankings Model, Robert Wood Johnson Foundation, and University of Wisconsin, 2015.

[6] Robert Wood Johnson Foundation. (2015). *Our Approach: County Health Rankings*. Retrieved from http://www.countyhealthrankings.org/our-approach

[7] Catlin, B. (2014). *The County Health Rankings: A Treasure Trove of Data*.

Community Health Assessment Process Model

As illustrated in Figure 4, the project was conducted using a series of data collection and analytical stages. The project began with a definition of the HSA based on the definition used for the previous 2013 CHNA. Area-wide primary and secondary data were collected for the defined HSA. Primary data were collected through interviews with area-wide service providers. Secondary data included health factor and health outcome indicators described in detail in Appendix A, a list of Communities of Concern (areas experiencing disparities) identified for the HSA in the 2013 CHNA, as well as the Community Health Vulnerability Index (CHVI) values for each census tract in the HSA.

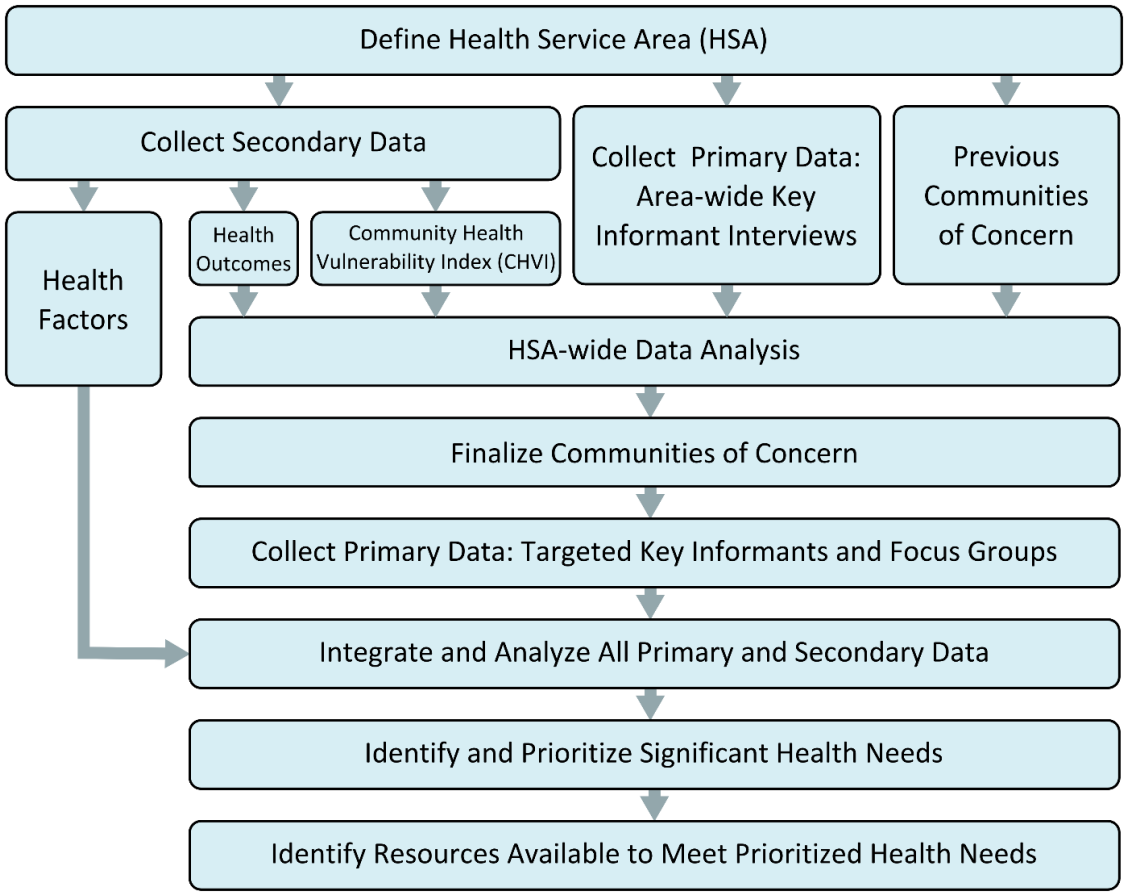

Figure 4: 2016 CHNA process model

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

Methods of Primary Data Collection and Processing

Input from the community was collected through two main mechanisms: key informant interviews with community health experts and service providers, and focus group discussions with community members. Instruments used in primary data collection included a participant informed

consent, an interview question guide, a project summary sheet, and a reflection sheet. All participants were given an informed consent form prior to their participation which provided information about the project, asked for permission to record the interview, and listed the potential benefits and risks for involvement in the interview (Appendix C). The interview question guide was used for both the key informant and focus group interviews (Appendix D). The project summary sheet (Appendix E) was given to participants to provide them with information about the project and contact information for CHNA staff. After the interview or focus group was conducted, the facilitator captured the main findings by completing a reflection sheet.

Collecting Primary Data

Primary data were collected between June and October 2015.

Key Informant Interviews

Key informant interviews were conducted with area service providers and experts representing the broad interests of the community who were familiar with the populations in the HSA (for a listing see Appendix F). Primary data collection began by interviewing area-wide service providers with knowledge of the EMC has, including input from the Alameda County Public Health Department. Findings from the area-wide informants were combined with quantitative data showing locations of populations experiencing disparities, to identify and interview key informants with knowledge about these specific populations and locations. These targeted primary data sources were selected based on their knowledge of the needs of particular geographic locations and/or subgroups experiencing disparities. A total of 14 key informant interviews were completed with 19 service providers. The key informant interviews were used to identify additional key service providers to include in the assessment, as well as to identify specific populations that should be included in the focus group interviews.

Focus Group Interviews

Focus group interviews were conducted with community members living in geographic areas of the HSA identified as locations in which residents experienced a disparate amount of poor socio-economic conditions and poor health outcomes. Recruitment consisted of referrals from designated service providers representing vulnerable populations in the EMC HSA, as well as direct outreach from CHVI to acquire input for a special population group. Four focus group discussions were conducted with a total of 44 community members (a listing can be found in Appendix G).

Processing Primary Data

After each interview was completed, the interview recording was sent to a transcription service. Content analysis was done on the transcriptions using NVIVO 10 Qualitative Analytical Software. Content analysis included thematic coding to potential health needs categories, identification of special populations experiencing health issues, identification of resources, as well as additional coding in accordance to the interview question guide. Results were aggregated to inform the determination of prioritized significant health needs and are presented later in this report.

Methods of Secondary Data Collection and Processing

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

Secondary Data Collection

The conceptual model shown previously in Figure 3 was used to organize secondary data collection, which was particularly focused on identifying indicators that would illuminate those concepts organized under the health outcomes and health factor categories. A number of general principles guided the selection of secondary indicators to represent these concepts. First, only indicators associated with categories in the conceptual model were included in the analysis. Second, indicators available at a sub-county level (such as at a ZIP code or smaller level) were preferred for their utility in revealing variations within the HSA. Third, indicators were only collected from data sources deemed reliable and reputable. Finally, indicators were only collected if they were possible to acquire at a reasonable cost. Based on these criteria, the following indicators were selected.

Health Outcomes

The majority of health outcome indicators can be divided between mortality data, primarily obtained from the California Department of Public Health (CDPH), and morbidity data, primarily obtained from the California Office of Statewide Health Planning and Development (OSHPD). These input data were processed using methods described in detail in Appendix A to result in a set of specific health outcome indicators. Input CDPH data were used to develop mortality rates and broader measures of health status for each ZIP code in the HSA. Input OSHPD data were used to develop hospitalization (H) and emergency department (ED) discharge rates, as well as prevention quality indicators (PQIs), for each ZIP code in the HSA. Tables 2 and 3 list the specific indicators derived from these data sources.[8]

Table 2: CDPH-derived health outcome indicators

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

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

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

Breast Cancer (H/ED)	Assault (H/ED)
Colorectal Cancer (H/ED)	Self-Inflicted Injury (H/ED)
Lung Cancer (H/ED)	Unintentional Injury (H/ED)

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

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

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

Morbidity indicators also included data from the Alameda County Health Consortium (ACHC), a private, non-profit regional association of community health centers in Alameda County serving low-income, vulnerable community residents. ACHA members included eight federally qualified, independently operated non-profit community health centers that provided primary medical, behavioral health, dental, and supportive services to more than 175,000 patients throughout Alameda County. These health centers operate more than 70 clinic sites. Data included a ranked order of the principle diagnoses for all clinic encounters by residents residing in EMC Communities of Concern for 2014. Individual diagnoses from each encounter were aggregated to determine a total count for each ZIP code. The total number of encounters by community residents and the total corresponding primary diagnoses is listed in Table 4. By understanding the reasons HSA residents sought primary care, one can better understand the overall health conditions of residents living in Communities of Concern.

Table 4: ACHC total number of encounters for EMC Communities of Concern, total number of unique diagnoses, and average number of encounters per unique diagnosis

ZIP Code	Total Number of ACHC Encounters	Total Number of Unique Diagnoses	Average No. of Encounters due to a Unique Diagnosis
94541	23,058	545	42.3
94544	28,462	547	52.0
94578	16,493	503	32.8
94580	8,002	383	20.1

Health Factors

The majority of health factor indicators used in the report were obtained from the US Census Bureau. These indicators primarily focus on the socio-demographic and housing characteristics of the population within the HSA, and are listed in Table 5. Additional health factor indicators were collected from a variety of other sources, and are listed in Table 6. Interested readers are referred to Appendix A for further details about the sources and processing steps applied to these indicators.

Table 5: U.S. Census Bureau-derived health factor indicators

Total Population	Percent Civilian Noninstitutionalized Population with a Disability
Percent Asian (not Hispanic)	Percent Over 18 Who are Civilian Veterans
Percent Black (not Hispanic)	Percent 25 or Older Without a High School Diploma
Percent Hispanic (Any Race)	Percent Single Female-Headed Households
Percent American Indian (Not Hispanic)	Percent Unemployed
Percent Pacific Islander (Not Hispanic)	Percent Uninsured
Percent White (not Hispanic)	GINI Coefficient
Percent Other Race or Two or More Races (Not Hispanic)	Median Income
Percent Minority (Hispanic or Non-White)	Percent Families with Children in Poverty
Racial/Ethnic Diversity Index	Percent Households 65 years or Older in Poverty
Population 5 Years or Older Who Speak Limited English	Percent Single Female-Headed Households in Poverty
Population by Age Group: 0-4, 5-14, 15-24, 25-34,45-54, 55-64, 65-74, 75-84, and 85 and over	Percent on Public Assistance
Median Age	Percent with Income Less Then Federal Poverty Level
Percent Non-Citizen	Average Population per Housing Unit
Percent Female	Percent Renter-Occupied Housing Units
Percent Foreign-Born	Percent Vacant Housing Units
Percent Male	Percent Households with No Vehicle

Table 6: Remaining health factor indicators

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

Community Health Vulnerability Index (CHVI)

A subset of the demographic health factor indicators (shown in Table 7 below) was also used to create the Community Health Vulnerability Index (CHVI), a composite index used to help understand the distribution of health disparities within the HSA. Like the *Community Needs Index (CNI)*[9] on which it was based, the CHVI combines multiple socio-demographic and housing indicators to help identify those locations experiencing greater health disparities. The CHVI differs from the CNI in the manner in which its indicators are combined. Higher CHVI values indicate a greater concentration of groups supported in the literature as being more likely to experience disparities. Interested readers are referred to Appendix A for further details as to its construction.

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

Table 7: Indicators included in the CHVI

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

Report Processes

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

Identifying Communities of Concern

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

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

Identifying Significant Health Needs

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

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

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

Prioritizing Significant Health Needs

Once significant health needs were identified through the process described above, they were prioritized based on an analysis of primary data. Coverage (percent of primary data sources mentioning the significant health need) and intensity (the average number of times the significant health need was mentioned by sources) were measured in the primary data, and the significant health needs were ranked based on these measures. The significant health need with the highest combined coverage and intensity scores was identified as having the highest priority, that with the second highest scores, the second priority, and so on to the significant health need with the lowest combined coverage and intensity scores given the lowest priority.

Findings

Communities of Concern

Analysis of both primary and secondary data revealed four ZIP codes that met the criteria for classification as a Community of Concern. These are noted in Table 8, with the census population provided for each, as well as in Figure 4.

Table 8: Identified Communities of Concern for EMC HSA

ZIP Code	Community/Area*	Population
94541	Northern Hayward and Cherryland	61,311
94544	Southern Hayward	76,542
94578	Ashland	39,225
94580	San Lorenzo/Ashland	28,701
Total Population Communities of Concern		*205,779*
Total Hospital Service Area Population		*371,612*
CC Population as a Percent of Total HSA Population		*55.3%*

(Source: US Census, 2013)

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

Figure 5 displays the EMC Communities of Concern. In the figure, ZIP code areas with red diagonal hash marks show the Communities of Concern.

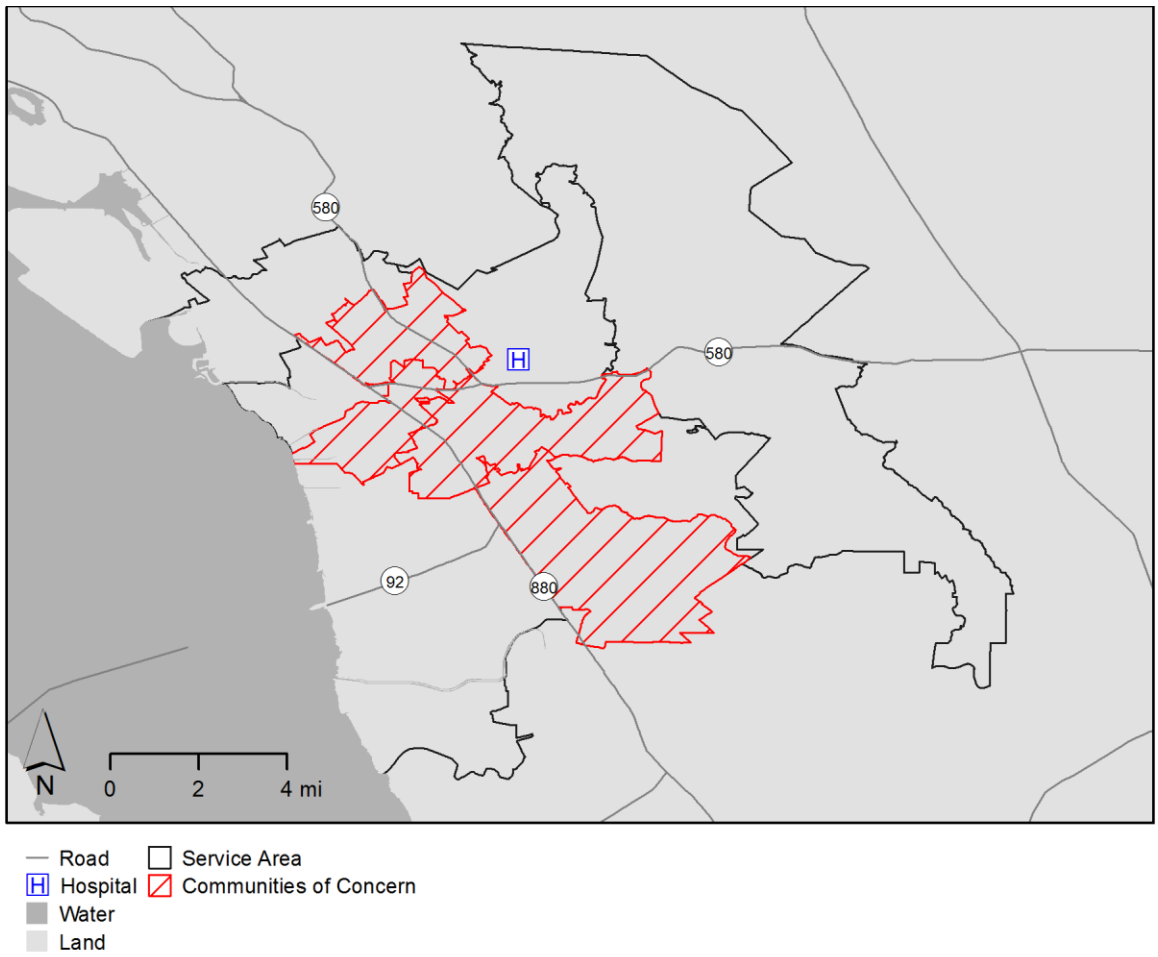

Figure 5: Communities of Concern for EMC HSA

Interviews with community health experts agreed with the findings of these secondary data. When asked to identify areas within the HSA with significant, unmet health needs, almost 60% of key informants identified Cherryland (ZIP code 94541), nearly 70% noted the Ashland and surrounding area (ZIP codes 94578 and 94580, respectively), and 90% identified San Lorenzo (ZIP code 94580). Discussing the health status of residents of these communities, one key informant said: "…if you look through the state's profile, Ashland and Cherryland have the highest mortality rates for almost all causes of death, of all of the leading causes, but by far anything related to heart disease, and, I believe cancer" (Al CC PH). Another key informant, when asked to describe the communities with the most significant health needs in the EMC HSA, said:

> *The immediate surrounding area of Sutter Eden again, it encompasses the unincorporated areas. Many of those neighborhoods, Ashland, Cherryland, San Lorenzo, which are all considered, like I said, unincorporated, they have no mayors, no government, are relatively, they're very diverse and relatively low income to very low income populations, particularly, again, Ashland, Cherryland and San Lorenzo* (KI_12).

The Community Health Vulnerability Index for Communities of Concern

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

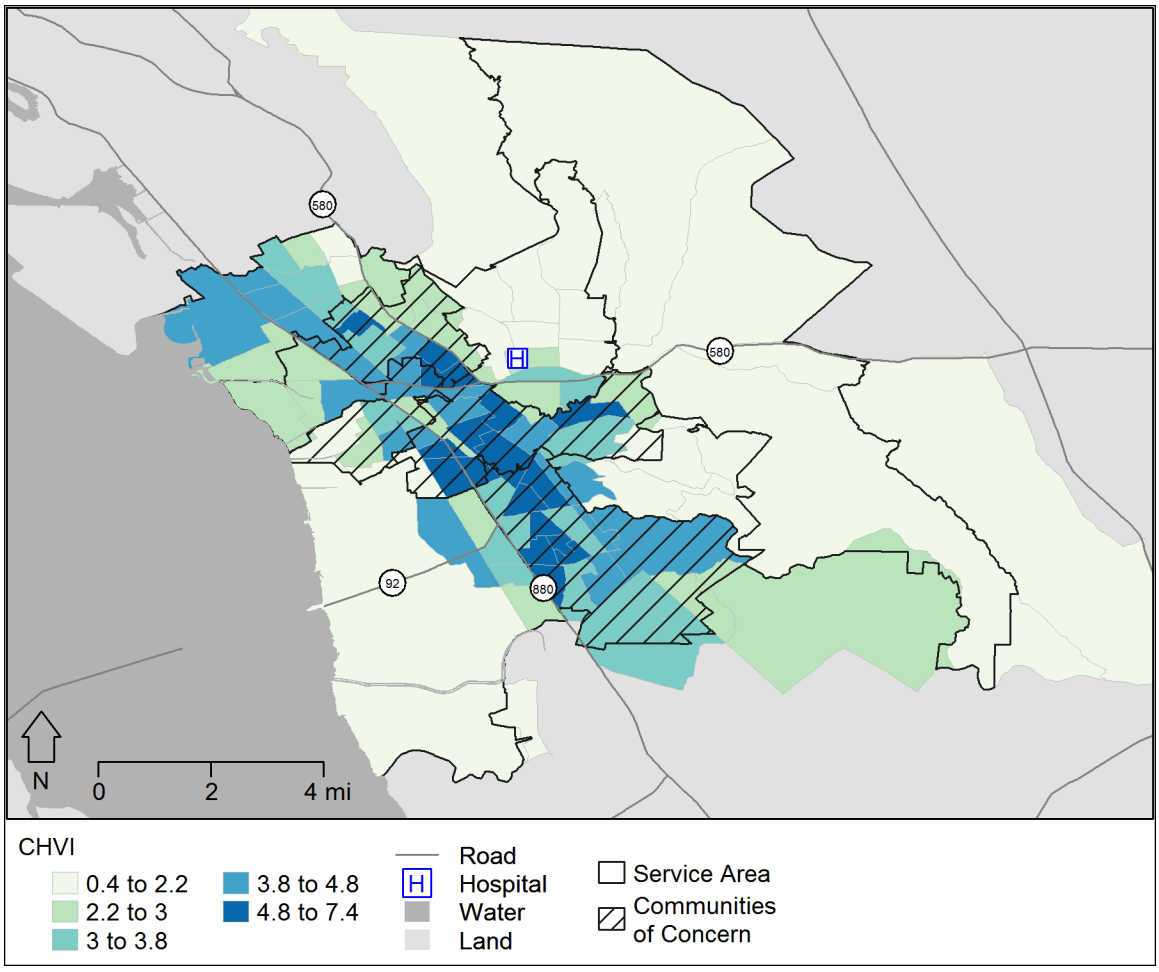

Figure 6: CHVI for EMC HSA

When examining vulnerability through the EMC HSA, drastic differences among census tracts were apparent. Further, there was variation among vulnerability within ZIP code Communities of Concern. As displayed in Figure 6, ZIP code Communities of Concern contain census tracts that are identified as "most vulnerable" by the CHVI rankings.[10] These appear as the darkest colored tracts.

Specific Populations Experiencing Disparities in Communities of Concern

When community health experts were asked to identify specific populations residing in these communities that were experiencing health disparities, they consistently cited Hispanic/Latinos, African

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

Americans, Pacific Islanders, new immigrants with limited English skills, and undocumented residents. Among these groups, African Americans were consistently noted as the group experiencing the most significant health disparities. One key informant put it succinctly: "*African Americans top most of our indicators in terms of poor health*" (KI_7).

Prioritized, Significant Health Needs in Communities of Concern

Figure 7 displays the nine significant health needs for EMC in prioritized order. They are ranked based on the percentage of sources that referenced the potential health need as a significant health need denoted by the blue portion of the bar. This is combined with the average number of times that each potential health need was referenced among all primary data sources, shown in the red portion of the bar.

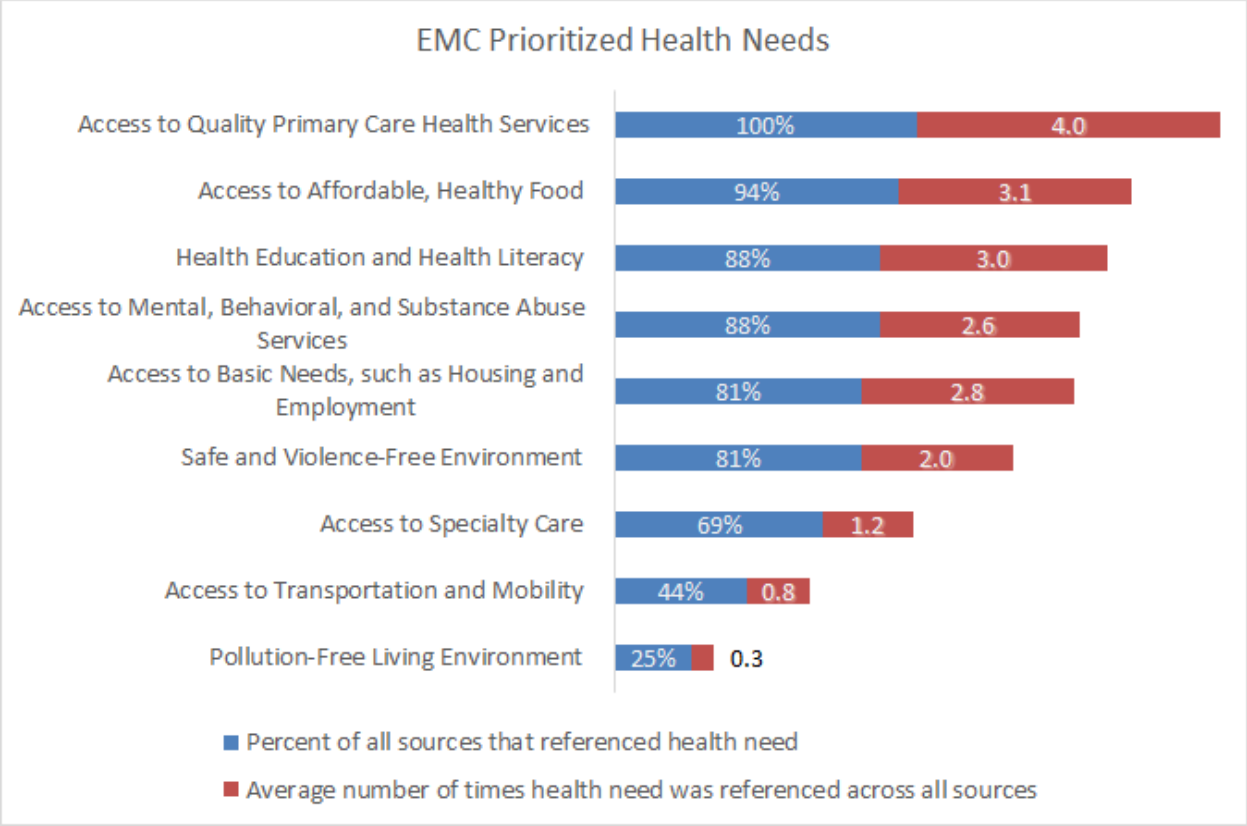

Figure 7: Prioritized, significant health needs for EMC Communities of Concern

Each SHN is described in greater detail below. Quantitative data indicators that had undesirable rates in at least 75% of the Communities of Concern are listed in the table below each significant health need. Qualitative themes that emerged during analysis are also provided in the table.

1. Access to Quality Primary Care Health Services

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

Quantitative Indicators	Qualitative Themes
• Colorectal cancer ED visits • Total ED visits (utilization) • Colorectal cancer hospitalizations • Total hospitalizations (utilization)	• Affordability of healthcare • No health insurance for undocumented residents • Low quality healthcare services—limited time with provider, misdiagnoses • Limited availability of appointments • Cultural competency of providers

2. Access to Affordable, Healthy Food

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

Quantitative Indicators	Qualitative Themes
• USDA defined food deserts • Mortality due to diabetes • Mortality due to hypertension • Mortality due to stroke • Diabetes ED visits • Heart disease ED visits • Hypertension ED visits • Kidney disease ED visits • Stroke ED visits • Diabetes hospitalizations • Hypertension hospitalizations • Kidney disease hospitalizations • Stroke hospitalizations	• Costs of healthier foods relative to fast food • Number of and availability of fast food restaurants • Limited availability of fresh food outlets • Stress as a main driver of poor nutrition • Cultural influences on diet and nutrition

3. Health Education and Health Literacy

The third highest priority significant health need for the EMC HSA was health education and health literacy. Knowledge is important for individual health and well-being, and health education interventions are powerful tools to improve community health. When community residents lack adequate information on how to prevent, manage, and control their health conditions, those conditions tend to worsen. Health education around infectious disease control (e.g. STI prevention, influenza shots) and intensive health promotion and education strategies around the management of chronic diseases (e.g. diabetes, hypertension, obesity, and heart disease) are important for community health improvement. Health literacy pertains to the extent that people have the knowledge and ability to obtain, process, and understand health information and services needed to make appropriate health

decisions. [11] Health education is important, but equally important is health literacy where the people have the knowledge and ability to understand health information and are able to navigate the health care system.

Quantitative Indicators	Qualitative Themes
• Mortality due to diabetes • Mortality due to hypertension • Mortality due to injuries • Mortality due to stroke • Diabetes ED visits • Heart disease ED visits • Hypertension ED visits • Kidney disease ED visits • Stroke ED visits • Unintentional injury ED visits • Diabetes hospitalizations • Hypertension hospitalizations • Kidney disease hospitalizations • Stroke hospitalizations • Unintentional injury hospitalizations • Percent smokers • Teen pregnancy rates	• Limited information available following diabetes diagnosis • Lack of knowledge in chronic disease management practices • Understanding and embracing health prevention behaviors • Poor dietary habits, limited understanding of nutritional values of certain foods • Limited understanding of managing multiple diseases • Lack of understanding on health benefits of active living

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

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

Quantitative Indicators	Qualitative Themes
• Health professional shortage area: Mental Health • Mental health ED visits • Substance abuse ED visits • Suicide ED visits • Substance abuse hospitalizations	• Living in a constant state of stress and anxiety due to limited resources such a food and shelter • Substance abuse as self-medication for mental heath issues • Untreated adverse, traumatic childhood experiences impacting one's health and well-being • Lack of substance abuse treatment resources • Lack of mental health services available in the community

[11] Almader-Douglas, D. (2013). *Health Literacy*. National Network of Libraries of Medicine. Retrieved from https://nnlm.gov/outreach/consumer/hlthlit.html

5. Access to Basic Needs, such as Housing and Employment

The fifth highest priority significant health need for the EMC HSA was access to basic needs such as housing and jobs. Access to affordable and clean housing, stable employment, quality education, and adequate food for health maintenance are vital for survival. Maslow's Hierarchy of Needs[12] says that only when members of a society have their basic physiological and safety needs met can they then become engaged members of society and self-actualize or live to their fullest potential, including their health.

Quantitative Indicators	Qualitative Themes
• Median household income • Percent no high school diploma • Percent receiving public assistance • Number of persons per housing unit • Percent renting • Percent unemployed • Housing vacancy rates	• High cost of quality housing • Housing instability • High cost to rent housing • Substandard quality of affordable housing • Overcrowded housing conditions • Low-wage jobs

6. Safe and Violence-Free Environment

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

Quantitative Indicators	Qualitative Themes
• Traffic accidents with fatalities • Assault ED visits • Mental health ED visits • Substance abuse ED visits • Substance abuse hospitalizations	• Violence in neighborhoods • Bullying in schools • Unsafe streets for pedestrian traffic • Mentally ill individuals on the streets • Fear of being out-of-doors limiting physical activity • High crime rates in low income areas • Personal safety as a priority health concern • Level of violence in parks and recreation areas

7. Access to Specialty Care

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

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

Quantitative Indicators	Qualitative Themes
• Mortality due to diabetes • Mortality due to hypertension • Diabetes hospitalizations • Hypertension hospitalizations • Kidney disease hospitalizations • Stroke hospitalizations	• Affordability of specialty care • Availability of specialty care for low income residents

8. Access to Transportation and Mobility

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

Quantitative Indicators	Qualitative Themes
• Percent living within ½ mile of public transit	• Limited public transportation options • Poor transportation infrastructure in unincorporated areas within the EMC HSA • No automobile ownership

9. Pollution-Free Living Environment

The ninth highest priority significant health need for EMC Communities of Concern was a pollution-free living environment. Living in a pollution-free environment is essential for health. Individual health is determined by a number of factors, and some models show that one's living environment, including the physical (natural and man-made) and socio-cultural environment, has more impact on individual health than one's lifestyle, heredity, or access to medical services.[13]

Quantitative Indicators	Qualitative Themes
• Asthma ED visits • COPD ED visits • Lung cancer ED visits • Asthma hospitalizations • Lung cancer hospitalizations • Percent smokers	• High rates of lung cancer in certain areas within the EMC HSA • Respiratory issues arising from living in substandard housing

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

Examination of health outcomes for the assessment included measures of morbidity and mortality. The conditions examined included the major categories of chronic disease, mental health, unintentional injury, cancer, respiratory health, and dental health. In addition, all-cause mortality, infant

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

mortality, and life expectancy at birth are also detailed here. Data examined included CDPH mortality data by ZIP code, OSHPD ED visits and hospitalizations by condition, and primary care visits by ZIP code from the ACHC.

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

Various quantitative indicators help to provide information about what it feels like to live in a community on an everyday basis. Though specific measures of mortality tell us how community members suffered related to specific conditions, in which interventions are designed to focus specifically on the prevention and/or treatment for that cause, overall health status indicators communicate length of life, quality of life, socioeconomic factors and the intersection of the environment and personal behaviors. Table 9 below examines three common overall health status indicators: age-adjusted all-cause mortality, infant mortality, and life expectancy at birth for each of the EMC Communities of Concern. NOTE: In this table, and all that follow, any indicator that exceeded any benchmark is highlighted.

Table 9: Overall health status indicators: Age-adjusted all-cause mortality, infant mortality, and life expectancy at birth compared to county, state, and Healthy People 2020 benchmarks.

	ZIP Code	Age Adjusted All-Cause Mortality (per 10,000 pop)	Infant Mortality Rate (per 1,000 live births)	Life Expectancy at Birth (Years)
Overall Health Status Indicators	94541	75.7	4.1	78.2
	94544	56.6	5.1	79.6
	94578	59.8	4.0	80.6
	94580	68.5	4.4	81.2
	Alameda County	*61.6*	*4.5*	*81.3*
	CA State	*64.6*	*4.9*	*80.5*
	National 2013	--	--	*78.8*[14]
	Healthy People 2020 Target	--	*6.0*[15]	--

(Source: CDPH, 2010-2012)

Rates for age-adjusted all-cause mortality exceeded both county and state benchmarks for ZIP code 94541 (N. Hayward/Cherryland) and 94580 (San Lorenzo/Ashland). Infant mortality rates for ZIP code 94544 (S. Hayward) were the only rates that exceed either benchmark.

Life expectancy at birth has gained notoriety in recent "place matters" campaigns.[16] These campaigns note that where someone lives can be a predictor of length of life. Life expectancy at the national level is currently 78.8 years. Both county and state rates for life expectancy were higher than

[14] 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

[15] 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

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

the national target. Life expectancy for all Communities of Concern was lower than both the county and state levels.

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

Chronic diseases, specifically diabetes, heart disease, stroke, hypertension, and kidney diseases are among the top leading causes of death in the nation.[17] These conditions were commonly mentioned as health conditions that EMC residents struggle with. An evaluation of quantitative data also revealed clear geographical disparities of these outcomes within the service area. Data for these conditions in the Communities of Concern follows.

Diabetes

Table 10 displays rates of mortality, ED visits and hospitalizations due to diabetes, and the Alameda County Health Consortium (ACHC) ranking for each Community of Concern. The ACHC rank shows the ranking among all reasons community residents of each ZIP code visited a consortium clinic during 2014, in which a ranking of one indicates the top reason (diagnosis) among all diagnoses, two, the second most common diagnosis, and so on.

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

	ZIP Code	Mortality	ED Visits	Hospitalizations	ACHC Rank
Diabetes	94541	2.8	455.7	265.3	3
	94544	2.4	419.2	239.3	3
	94578	1.5	346.1	217.0	4
	94580	2.4	293.5	190.3	3
	Alameda County	*2.3*	*273.1*	*178.4*	--
	CA State	*2.1*	*210.9*	*194.0*	--
	Healthy People 2020 Target	*6.6*	--	--	--

(Source: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013; ACHC Rank: ACHC, 2014)

Table 10 reveals that with only one exception, all Communities of Concern exceeded benchmarks for mortality, ED visits, and hospitalizations due to diabetes. ZIP code 94541 (N. Hayward/Cherryland) had ED visit rates over twice the county and state benchmarks. Further, diabetes was a primary reason residents living in Communities of Concern sought primary care. For all ZIP codes, diabetes was the third or fourth most common reason for visiting a consortium clinic.

Heart Disease

Heart disease is the leading cause of death in the nation for individuals under the age of 85; it includes a number of different types of heart-related conditions, with coronary heart disease the most common and a major cause of heart attacks. More than 600,000 people die of heart disease each year.[18] Key informants and community members mentioned heart disease and high cholesterol as common

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

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

conditions for area residents. Table 11 examines rates for mortality, ED visits, and hospitalizations due to heart disease.

With only one exception (mortality due to heart disease in ZIP code 94578 (Ashland)), all Communities of Concern exceeded county, state, and Healthy People 2020 (HP2020) benchmarks for mortality, ED visits, and hospitalizations due to heart disease.

Table 11: Mortality, ED visit and hospitalization rates for heart disease compared to county, state, and Healthy People 2020 benchmarks (rates per 10,000 population)

	ZIP Code	Mortality	ED Visits	Hospitalizations
Heart Disease	94541	14.2	121.0	186.7
	94544	13.3	118.6	168.5
	94578	10.7	90.4	139.9
	94580	14.5	112.3	139.6
	Alameda County	*13.2*	*95.4*	*132.2*
	CA State	*15.8*	*70.8*	*143.0*
	Healthy People 2020 Target	*10.1*	--	--

(Source: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013)

Stroke, Hypertension, and Kidney Disease

Stroke was the fifth leading cause of death at the national level in 2013.[19] Approximately 800,000 people have a stroke each year, with the most common type those which restrict blood flow to the brain.[20] Tobacco smoking and hypertension drastically increase risk for stroke. Hypertension is common in approximately 1 out of every 3 adults.[21] Both stroke and hypertension are discussed together here. Hypertension also increases risk for kidney disease, along with heart disease and diabetes. Tables 12, 13, and 14 below examine mortality, ED visits, and hospitalizations related to stroke, hypertension, and kidney disease.

Table 12: 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	94541	4.7	49.1	84.2
	94544	4.2	41.4	63.3
	94578	5.8	37.5	71.0
	94580	4.4	43.8	67.2
	Alameda County	*3.8*	*34.5*	*62.1*
	CA State	*3.6*	*20.3*	*56.1*
	Healthy People 2020 Target	*3.4*	--	--

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

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

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

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

All Communities of Concern exceeded county, state, and HP2020 benchmarks for mortality, ED visits, and hospitalizations due to stroke. ZIP codes 94541 (N. Hayward/Cherryland), 94544 (S. Hayward), and 94580 (San Lorenzo/Ashland), had ED visit rates that were over twice the state benchmark.

Table 13 displays health outcome indicators for hypertension, or high blood pressure. All ZIP codes, except 94544 (S. Hayward), had rates that exceeded the state rate for mortality due to hypertension (a county benchmark was not available). Mortality for 94541 (N. Hayward/Cherryland) was twice the state rate. Likewise, all ZIP codes exceeded all benchmarks for ED visits due to hypertension. Again, standout ZIP code 94541 (N. Hayward/Cherryland) had rates that were over twice the state benchmark.

Data from the ACHC showed that hypertension (high blood pressure) was a primary reason why residents in all communities of concern sought care. For all ZIP codes hypertension was the third or fourth most common reason for visiting a consortium clinic.

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

	ZIP Code	Mortality	ED Visits	Hospitalizations	ACHC Rank
Hypertension	94541	2.4	860.3	480.3	4
	94544	1.1	774.7	405.6	4
	94578	1.6	645.1	407.8	3
	94580	1.3	642.8	383.6	4
	Alameda County	--	*581.6*	*365.9*	--
	CA State	*1.2*	*412.6*	*387.2*	--

(Sources: Mortality: CDPH, 2012; ED visits and hospitalizations: OSHPD, 2011-2013; ACHC rank: ACHC, 2014)

Table 14: Mortality, ED visits and hospitalization rates for kidney diseases compared to county and state benchmarks (rates per 10,000 population)

	ZIP Code	Mortality: Nephritis	ED Visits*	Hospitalizations*
Kidney Disease	94541	0.7	154.9	219.9
	94544	0.5	132.1	183.4
	94578	0.7	114.3	192.2
	94580	0.7	133.8	175.2
	Alameda County	--	*104.4*	*167.2*
	CA State	*0.7*	*57.6*	*161.5*

(Sources: Mortality: CDPH, 2012; ED Visits and hospitalizations: OSHPD, 2011-2013)
* OSHPD data includes data for conditions nephritis, nephrotic syndrome, and nephrosis

All Communities of Concern except 94544 (S. Hayward) had mortality rates that matched the state benchmark for deaths due to nephritis. However, rates for ED visits and hospitalization due to kidney disease exceeded both county and state benchmarks. Further, Alameda County rates for ED visits due to kidney disease were substantially higher than the state rate.

Both key informants and community residents consistently pointed to chronic diseases as the priority health issue in the Communities of Concern. For example, one key informant noted chronic disease rates specifically in Communities of Concern: "*…so Ashland and Cherryland have among the highest rates of diabetes, childhood obesity, and heart disease, I believe, and among the shortest life expectancies of anybody in Alameda County*" (KI_8). When asked to describe significant health issues in their community, key informants and focus group participants described chronic diseases such as diabetes, hypertension, heart disease, and cancer. For example, a community health expert, when describing health issues in the EMC Communities of Concern said: "*I think the community struggles most with multiple chronic disease issues…including diabetes, high blood pressure, heart disease*…" (KI_12).

When asked to describe factors contributing to these health issues, both key informants and focus group members consistently pointed to upstream factors such as obesity resulting from poor nutrition, limited health literacy on diet and exercise, unsafe living conditions that impede outdoor activity, and similar. One key informant described the relationship between nutrition and chronic disease this way: "*…we often see a lot of hypertension, chronic health issues, obesity…based on the lack of really good food options*" (KI_11). A focus group participant noted the lack of health literacy on nutrition issues as a contributor to chronic diseases and obesity. Through a translator, the community member said:

> *[She is saying] there is not a lot of information about diseases. Like one is diagnosed diabetic. The doctor just gives them the medicine and says 'good luck.' They need to know what nutrition is so they eat the right foods. Obesity is the same problem. That is poor diet information available to help people get healthy* (FG_1).

Last, a key informant made this comment about health literacy: "*I think that a lot of these parents don't know anything about health, what is going on with diseases and how to manage them*" (KI_9).

Mental Health and Self-Inflicted Injury

The lack of access to mental health services and the struggle that many community members experience around coping with mental health illness and substance abuse was a main finding of this community health assessment. Area experts and community members consistently reported the immense struggle service area residents have in maintaining positive mental health and accessing treatment for mental illness. As mentioned previously in this report, access to mental health and substance abuse treatment was the fourth highest priority significant health need for the EMC HSA. Included in this section of the report are ED visits and hospitalizations related to mental health conditions, substance abuse, and suicide/self-inflicted injury.

Mental Health

Table 15 displays the rates for Communities of Concern for all mental health-related ED visits and hospitalizations, as well as primary care rankings.

Table 15: 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	ACHC Rank*
Mental Health (Overall)	94541	414.4	270.1	20
	94544	347.7	190.6	28
	94578	276.7	187.8	22
	94580	261.9	166.2	19
	Alameda County	*232.3*	*182.0*	
	CA State	*153.6*	*188.6*	

(Source: ED visits and hospitalization: OSHPD, 2011-2013; ACHC rank: ACHC, 2014)
*ACHC diagnosis included code 300: Disorders, Anxiety, Dissociative/Somatoform

ZIP Code 94541 (N. Hayward/Cherryland) had rates that were substantially higher than both county and state benchmarks. Also, primary care visits related to mental health disorders ranked 20th for this ZIP code. All other ZIP codes had rates that exceeded at least one benchmark for both ED visits and hospitalizations with one exception, that being 94580 (San Lorenzo/Ashland), for hospitalization. Also, mental health related diagnoses were a primary reason many community residents visited an ACHC clinic, with two ZIP codes—94541 (N. Hayward/Cherryland) and 94580 (San Lorenzo/Ashland)—showing mental health concerns ranking in the top 20 reasons for a clinic visit.

Suicide and Self-Inflicted Injury

Table 16 displays mortality rates due to suicide, and ED visits and hospitalizations due to self-inflicted injury for the four Communities of Concern.

Table 16: Mortality rates due to suicide and ED visits and hospitalization rates due to self-inflicted injury compared to county, state, and Healthy People 2020 benchmarks (rates per 10,000 population)

	ZIP Code	Mortality	ED Visits	Hospitalizations
Suicide/Self-Inflicted Injury	94541	1.8	11.5	3.4
	94544	0.8	9.6	3.1
	94578	1.5	12.9	3.3
	94580	0.7	9.3	3.5
	Alameda County	*0.9*	*8.6*	*2.9*
	CA State	*1.0*	*8.2*	*4.4*
	Healthy People 2020	*1.0*	--	--

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

Mortality rates due to suicide were higher in ZIP codes 94541 (N. Hayward/Cherryland) and 94578 (Ashland). Rates for ED visits and hospitalizations for self-inflicted injury exceeded county benchmarks in all Communities of Concern.

Community health experts pointed to mental and behavioral health conditions as a priority health issue in the EMC Communities of Concern. Nearly 90% of all key informants and focus group participants noted mental health and related issues as a significant health need. One key informant pointed to the stressors of limited resources as the causes of many mental health conditions reflected in these data:

It is a stress when you don't have enough money to pay your rent, or you don't have enough money to put your kids in a soccer league, right? Or you don't have enough money to buy your kids lunch, right? Those things create stress in people's lives, they can create shame in people's lives…and they come to define a family or define a community, right? And then you are left [with] communities that disproportionately have those problems (KI_1).

Unintentional Injury

Unintentional injury is the fourth leading cause of death in the nation and the leading cause of death for children and teens.[22,23] National data show that most deaths related to unintentional injuries for young people result from motor vehicle accidents, followed by drowning, fire, falls, and poisoning. ED visits and hospitalizations related to unintentional injuries are included in this section of the report. In the health factors section, data on fatal traffic accidents, major crimes, and assault are detailed. Table 17 examines mortality, ED visits, and hospitalizations related to unintentional injuries.

Table 17: Mortality, ED visit, and hospitalization rates due to unintentional injury compared to county, state and Healthy People 2020 benchmarks (rates per 10,000 population)

	ZIP Code	Mortality	ED Visits	Hospitalizations
Unintentional Injury	94541	3.5	967.6	192.7
	94544	2.0	898.7	155.3
	94578	3.6	865.4	170.3
	94580	3.1	747.6	156.0
	Alameda County	*2.3*	*727.3*	*152.0*
	CA State	*2.9*	*671.3*	*155.5*
	Healthy People 2020	*3.4*	--	--

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

Rates for ED visits due to unintentional injury exceeded both county and state benchmarks for all Communities of Concern, and hospitalization rates exceeded the county benchmarks in all Communities of Concern. In all instances except one, mortality rates exceeded both county and state benchmarks, and two of the four Communities of Concern exceeded HP2020 benchmarks.

Cancers

Cancer is one of the leading causes of death in the nation, with more than 8% of the population receiving a cancer diagnosis at least once in their lifetime[24]. In an attempt to gain a better understanding of how the Communities of Concern are affected by cancer, the assessment included the examination of cancer incidence at the county level, as well as cancer mortality and ED visits and hospitalizations for specific causes of cancer. County level all-cause cancer incidence and mortality data were examined; however, ZIP code-level incidence data for all-cause cancer and specific cancers were not available for this assessment. ZIP code level data on ED visits and hospitalizations due to lung cancer, colorectal

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

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

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

cancer, prostate cancer, and female breast cancer were selected for the assessment and are also detailed below. These specific cancers were chosen for this assessment because they are among the leading causes of new cases and/or of deaths of cancer among Americans today.

Cancer Incidence

Cancer incidence helps to communicate risk for cancer within the HSA, but data is hard to acquire at the sub-county level. Rates of new cases of cancer for the years 2008 through 2012 for both Alameda and Contra Costa County are listed in Table 18. Rates are compared to a regional incidence rate and state rate.

Incidence rates of all-cause cancer were lower in Alameda County than in neighboring Contra Costa County and both the East Bay regional and California state rates.

Table 18: Age-adjusted incidence rates of cancer (invasive) for Alameda County and Contra Costa County compared to state and regional benchmarks (rates per 10,000)

Indicator	Rate per 10,000
Alameda County All-Cause Cancer Incidence	41.3
Contra Costa County All-Cause Cancer Incidence	45.6
Bay Area Region All-Cause Cancer Incidence	*43.6*
CA State All-Cause Cancer Incidence[+]	*42.5*

(Source: CA Cancer Registry, 2008-2012[25])

All-Cause Mortality and Lung Cancer

An all-cause cancer mortality rate[26] shows the overall effect of cancer as an illness across the EMC Communities of Concern. Unfortunately, data on death due to specific cancers is 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 19, followed by rates for prostate, colorectal, and female breast cancer in Table 20.

Table 19: 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
94541	16.2	5.3	5.2
94544	12.2	3.6	4.3
94578	13.1	4.0	5.0
94580	17.8	4.4	5.4
Alameda County	*15.3*	*3.7*	*8.3*
CA State	*15.4*	*2.7*	*8.0*

[25] *Age-Adjusted Invasive Cancer Incidence Rates by County in California, 2008 - 2012*. Based on November 2014 Extract (Released November 21, 2014). California Cancer Registry. Cancer-Rates.info. Retrieved Jan 19, 2016, from http://cancer-rates.info/ca/

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

ZIP Code	Mortality: (All-Cause Cancer)	ED Visits: Lung Cancer	Hospitalizations: Lung Cancer
Healthy People 2020	*16.1*	--	--

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

Mortality due to all cancers exceeded county, state, and HP2020 benchmarks for both 94541 (N. Hayward/Cherryland) and 94580 (San Lorenzo/Ashland). Among all indicators, only ED visit rates due to lung cancer exceeded both county and state benchmarks. The rate for 94541 (N. Hayward/Cherryland) was almost twice the state benchmark. Hospitalizations dues to lung cancer were below both county and state benchmarks for all Communities of Concern.

Cancer – Female Breast, Colorectal, and Prostate

A lack of access to primary health care greatly affects a community's risk of late diagnosis of cancer, especially those cancers in which early diagnosis and prevention are vital to reducing increased related morbidity and mortality. Table 20 examines ED visit and hospitalizations related to female breast cancer, colorectal cancer (male and female) and prostate cancer.

Table 20: Rates of ED visits and hospitalizations for female breast cancer, colorectal cancer, and prostate cancer compared to county and state benchmarks (rates per 10,000 population)

ZIP Code	ED Visits: Female Breast Cancer	Hospitalizations: Female Breast Cancer	ED Visits: Colorectal Cancer	Hospitalizations: Colorectal Cancer	ED Visits: Prostate Cancer	Hospitalizations: Prostate Cancer
94541	12.00	12.2	3.0	7.7	16.7	13.8
94544	10.63	9.7	3.4	7.1	10.0	11.6
94578	7.0	8.8	3.1	6.0	9.5	11.2
94580	9.7	9.7	3.5	7.2	18.7	12.8
Alameda County	*9.8*	*10.9*	*2.5*	*6.4*	*10.6*	*11.8*
CA State	*6.6*	*11.1*	*1.9*	*6.5*	*5.8*	*12.4*

(Source: OSHPD, 2011-2013)

Examination of ED visits and hospitalizations related to breast cancer in females revealed that all ZIP codes had rates above at least one benchmark for ED visits due to female breast cancer, colorectal cancer, and prostate cancer.

Respiratory Health – Chronic Obstructive Pulmonary Disease and Asthma

Chronic Obstructive Pulmonary Disease (COPD)

COPD is a progressive lung disease that makes it difficult to breathe and refers to the two main conditions of emphysema and chronic bronchitis.[27] Tobacco smoking is the biggest risk factor for COPD. In the US approximately 6.8 million people have COPD. In an effort to understand the impact of

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

respiratory illness in the Communities of Concern, mortality rates for Chronic Lower Respiratory Disease (CLRD) are presented below with rates of ED visits and hospitalizations related to COPD. Rates of ED visits and hospitalizations due specifically to asthma are examined in Table 21.

Mortality due to CLRD exceeded both county and state benchmarks for ZIP code 94580 (San Lorenzo/Ashland), whereas ED visit rates for all ZIP codes exceeded both county and state benchmarks. Hospitalization rates for all ZIP codes due to COPD exceeded county benchmarks with one exception—94580 (San Lorenzo/Ashland).

Table 21: ED visit 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)	94541	2.5	118.5	104.5
	94544	2.5	88.0	82.1
	94578	2.1	94.6	72.0
	94580	4.0	84.0	63.1
	Alameda County	*2.8*	*72.9*	*69.8*
	CA State	*3.5*	*74.6*	*89.1*
	Healthy People 2020		*56.8*	*50.1*

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

Asthma

Asthma is a major health issue in the nation. National data indicate that one in 12 adults and one in 11 children have asthma.[28] Table 22 examines ED visits and hospitalization due to asthma (all ages), as well as how the condition ranks in terms of number of encounters at the ACHC.

Table 22: ED visit and hospitalization rates due to asthma compared to county and state benchmarks (rates per 10,000 population), and the ACHC ranking

	ZIP Code	ED Visits	Hospitalizations	ACHC Rank
Asthma	94541	427.6	123.0	9
	94544	412.4	104.4	8
	94578	315.0	99.4	13
	94580	299.1	92.3	18
	Alameda County	*252.9*	*86.7*	
	CA State	*149.1*	*68.7*	

(Source: ED visits and hospitalizations: OSHPD, 2011-2013; ACHC rank: ACHC, 2014)

Each Community of Concern had both ED visit and hospitalization rates that exceeded both county and state benchmarks for asthma. The county benchmark was notably higher than the state, and every ZIP code had rates that were twice that of the state benchmark.

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

Key informants and focus group participants consistently cited asthma and related respiratory issues as a health concern. Several key informants pointed to poor housing conditions as contributing to respiratory issues: "*So…what's happening with housing, is it affordable, what's the quality of the housing in particular like with asthmatics in sub-standard housing they're always going to be triggered in terms of their asthma*" (KI_7).

Dental Health

Dental health is very important for the overall health of an individual. Access to dental care was not noted as a significant health issue in this CHNA; however, both key informants and focus group participants mentioned oral health as a health concern. Though dental insurance was re-instated for adults in 2014 under Medi-Cal, the data presented here is from 2013. Clear geographic disparities were evident among the ZIP code Communities of Concern in comparison to the county and state benchmarks. Table 23 provides data on ED visits and hospitalizations related to dental issues.

Table 23: ED visit and hospitalization rates due to dental issues compared to county and state benchmarks (rates per 10,000 population)

	ZIP Code	ED Visits	Hospitalizations
Dental	94541	72.9	8.3
	94544	70.5	9.7
	94578	65.8	7.7
	94580	42.9	7.3
	Alameda County	*47.6*	*7.9*
	CA State	*41.8*	*7.9*

(Source: OSHPD, 2011-2013)

All ZIP codes exceeded the state benchmark for ED visits due to dental conditions, and two ZIP codes—94578 (Ashland) and 94580 (San Lorenzo/Ashland)—exceeded both the county and state rate for hospitalizations. ZIP code 94541 (N. Hayward/Cherryland) was again the stand out among all others for the highest ED visit rates, while 94544 (S. Hayward) had the highest hospitalization rates.

One-half of all focus groups discussed oral health as a health issue. Several key informants also pointed to oral health concerns for the EMC Communities of Concern. Many community residents pointed to the lack of available dental services: "*…with the Medi-Cal they have a whole lists of dentists here in Alameda County that accept Denti-Cal, but I have not been…they are so backlogged*" (FG_2). Describing the impact of oral health on one's overall well-being, one key informant made this comment: "*oral health is a huge concern for our communities; it's the number one reason in the state why children miss school, and certainly oral health is a big indicator of overall health*" (KI_12).

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

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

Outcomes section of this report, health factors presented in this section are organized in accordance with the conceptual model as presented previously.

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

Tobacco Use

Tobacco use is a risk behavior that is commonly addressed through educational interventions, and a major contributor to most of the leading causes of death in the US, especially heart disease, COPD, asthma, and cancer. Though smoking rates are not available for the EMC service area, these rates are available for Alameda County. Data from the California Health Interview Survey showed that 11.5% of county residents were current smokers, compared to the state rate of 10.8%.

Diet and Exercise – USDA defined Food Deserts, mRFEI, and Park Access

Obesity

Consideration of diet and exercise data for this health assessment also included 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 section of the report. Table 24 displays the percentage of adults overweight and obese for Alameda County as compared to the state. Table 25 displays the ranking of ACHC encounters due to overweight/obesity and hyperalimentation.

Table 24: Self-reported BMI for the determination of percent overweight and obese for Alameda County in comparison to the state benchmark rate

Indicator	Percent Overweight	Percent Obese
Alameda County	35.0%	19.8%
CA State	35.5%	27.0%

(Source: California Health Interview Survey, 2014).

Table 25: ACHC rankings of encounters due to obesity*

	ZIP Code	ACHC Rank
Obesity	94541	13
	94544	11
	94578	18
	94580	20

(Source: ACHC, 2014)
*Obesity-related encounters included diagnostic code 278 (overweight/obesity/other hyperalimentation)

As seen in Table 25, ACHC encounters due to obesity consistently ranked in the top 20 reasons community residents sought primary care. Further, key informants and focus group participants also pointed to nutrition as an underlying cause of obesity in Communities of Concern, and specifically the costs associated with fresher food relative to fast food. One key informant, describing the nutrition habits of specific populations with which they worked, said: "they have terrible diets…many of them live on soda and $0.99 double cheeseburgers or burritos at Taco Bell" (KI_4). Another key informant made this observation when accompanying parents and children on a school field trip: "*…last weekend we went on a field trip; and the parents and kids, they are obese. They are a heavy weight*" (KI_9).

Food Deserts

The USDA defines food deserts 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."[29] 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."[30] Figure 8 identified food deserts for the EMC Communities of Concern.

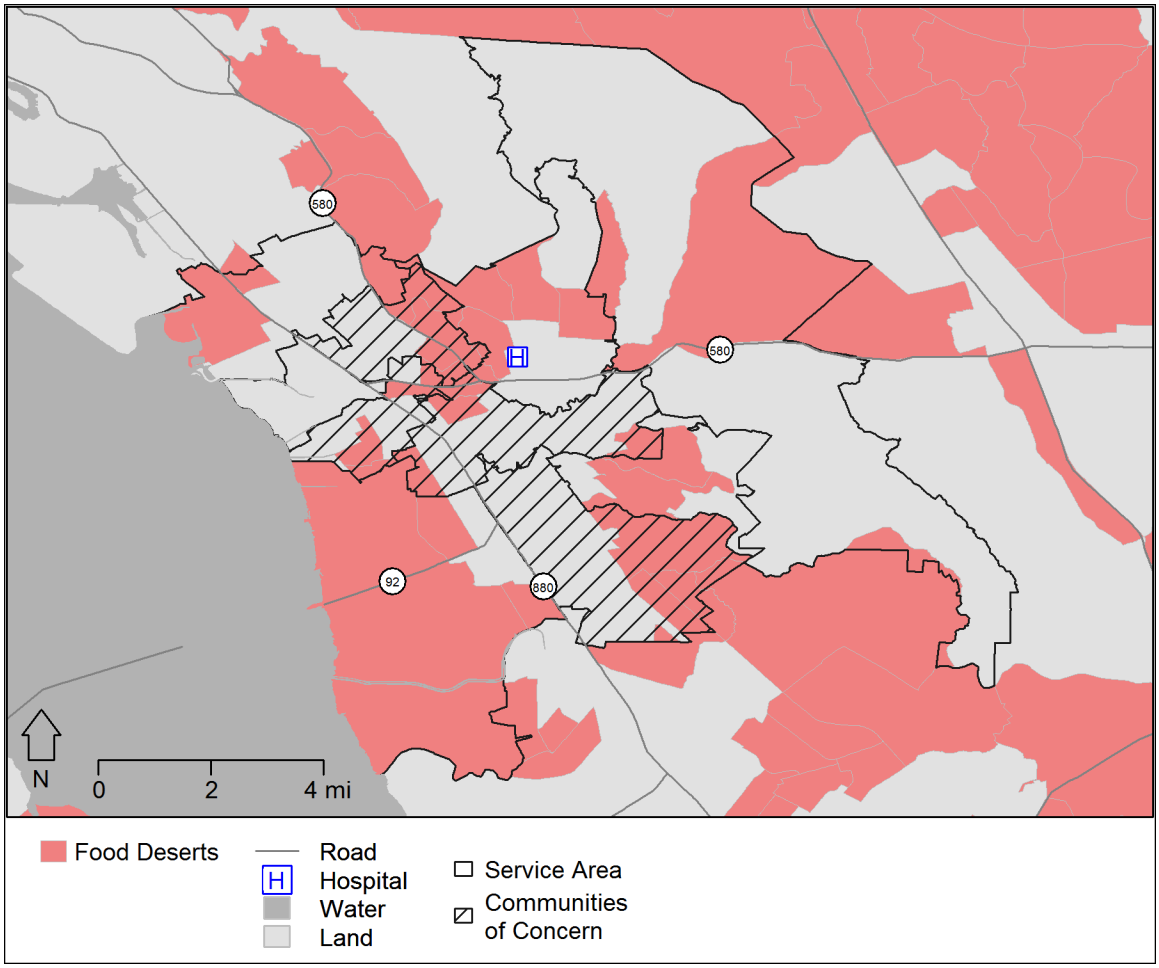

Figure 8: USDA defined food deserts for EMC Communities of Concern

Figure 8 shows that the northern tip of 94541 (N. Hayward/Cherryland) the western portion of 94544 (S. Hayward), the eastern portion of 94578 (Ashland), and the southern portion of 94580 (San Lorenzo/Ashland) contain USDA- defined food deserts.

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

Modified Retail Food Environment Index (mRFEI)

The mRFEI (modified Retail Food Environment Index) is an index that represents 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, out of all food outlets, in the ZIP code. Figure 9 below shows the mRFEI for the EMC HSA. Lighter areas indicate poor or no access to healthy food outlets and darker areas indicate greater access to healthy food outlets.

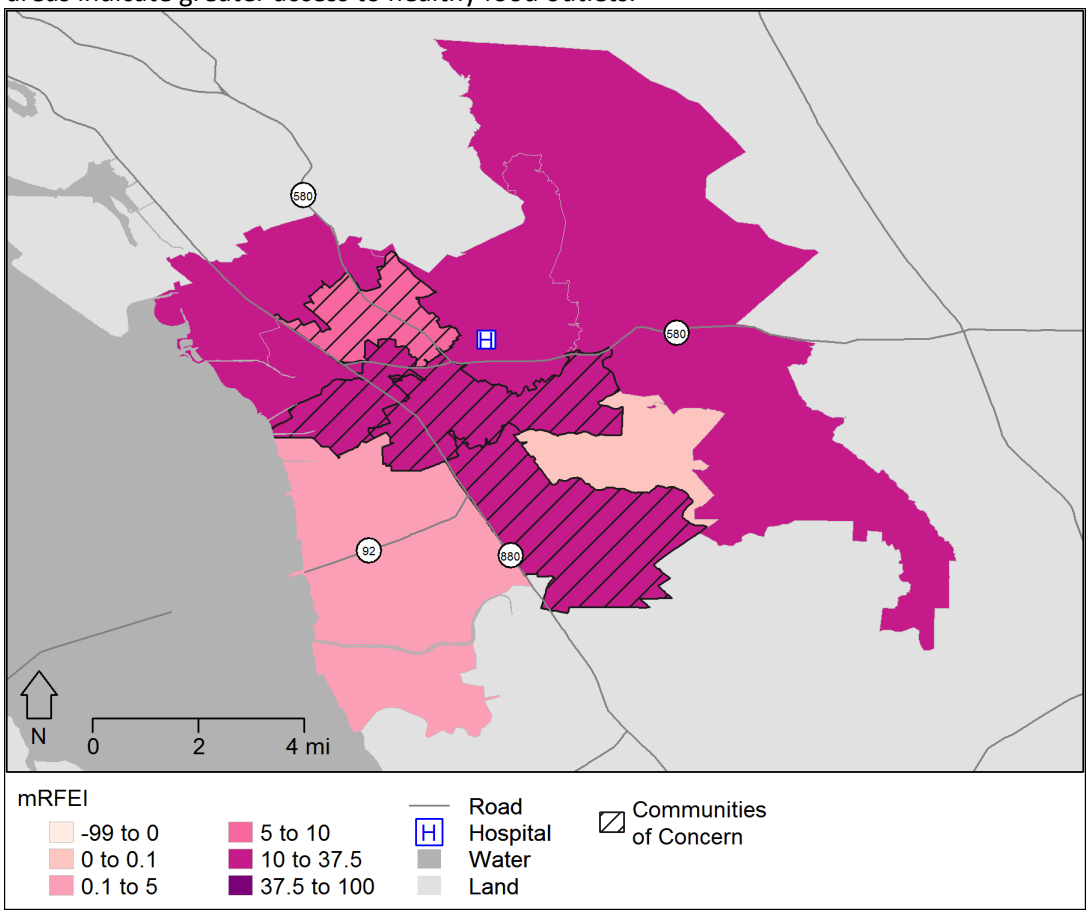

Figure 9: Modified Retail Food Environment Index (mRFEI) for the EMC HSA

Figure 9 shows that ZIP code 94578 (Ashland) had an mRFEI index in the range of five to 10, indicating moderate access to fresh foods. All of the Communities of Concern had indices in the 10 to 37.5 range, indicating slightly better access to fresh foods. Community residents and community health experts also commented on the health impact of limited access to fresh foods in the Communities of Concern, as well as the higher costs of fresher foods. One resident made this comment:

> *There is more fast food around every neighborhood, every city, everywhere you go there is more fast food than anything. It's like they make fast food so cheap for you to buy it, that's why there are so many obese people in the world because it's so easy to get it. It's made so quickly; they make the right food for you to eat so expensive, but like she was saying, you got the dollar store, they do have a lot of unhealthy food there…"* (FG_3).

Another participant in this focus group made this comment: "*None of us are millionaires. We can't afford to eat the way that other people eat*" (FG_3). A community health expert noted the high number of liquor stores relative to fresh food outlets: "*So you have a community that on every corner just about has liquor stores, but no fresh food*" (KI_9). Finally, a community expert in the Ashland area made this comment concerning the impact of a healthy diet on youth:

> *We still have a lot of young people that come in here and we are noticing that there are a lot of behavioral issues [that] result from the fact that they haven't had anything to eat all day. We hear stories of young people who had a bag of Cheetos, went to school, got into a fight, came here, and still haven't had anything else to eat* (KI_2).

Park Access

Access to recreational areas is a contributor to whether or not people will be physically active. Figure 10 shows the percent of the population by ZIP code in the service area that live within one-half mile of a recreational park. The lighter colors denote fewer residents with nearby park access and darker colors show more residents living within one-half mile of a park.

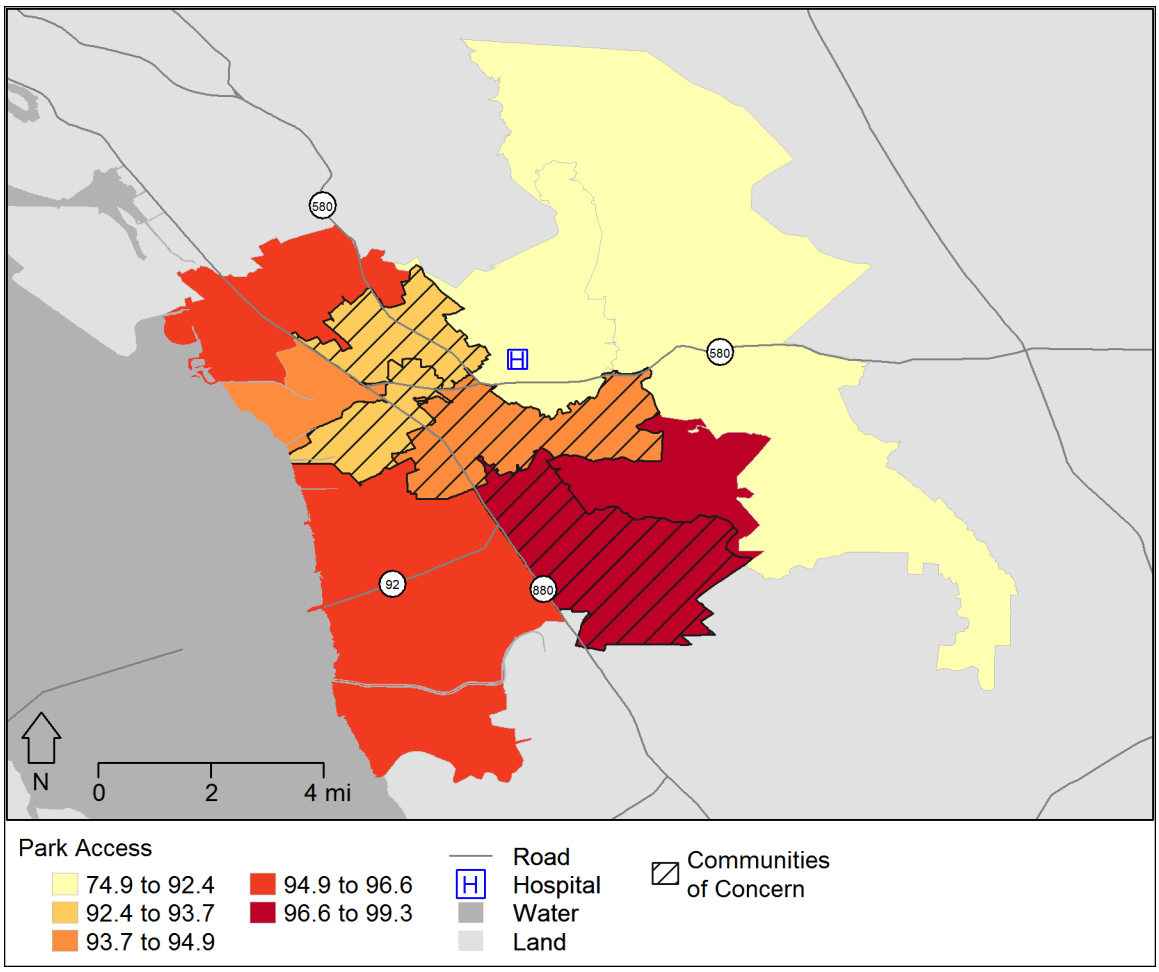

Figure 10: Percent of population in a ZIP code living within ½ mile of a park

Figure 10 shows that two of the four Communities of Concern had moderate access to recreation areas—94578 (Ashland) and 94580 (San Lorenzo/Ashland). Residents in ZIP code 94541

(Hayward) had slightly better access, and those living in 94544 (S. Hayward) had the best access, with virtually all community members living within one-half mile of a recreation area.

While many community residents have access to parks, key informants pointed to crime and safety as a moderator of park use. One key informant described it this way:

> *In terms of exercise there have to be places and open spaces for people to exercise for free. Maybe it's not the gym, because not everybody can afford the gym. And when you say that for particular areas you know that the crime and safety of the area is not well enough for people. They don't feel comfortable out to do exercise* (KI_7).

Community health experts pointed to the condition of many parks as a barrier for park use. One made this comment: "*I think that another thing that's important is more recreational areas, because the parks are just not in good condition or they are not safe for them to go to, so they don't really get exercise*" (KI_3). A focus group participant put it this way: "*A few parks are not safe to go to because of drug use, and a lot of dog poop*" (FG_1).

Alcohol & Drug Use

Adult Binge Drinking

Reported rates of binge drinking are not available at the sub-county level for the EMC. However, CHIS data indicates that the percentage of respondents reporting binge drinking at the county level is below the state level reported for binge drinking in 2014. The Alameda county rate is 23.9% of adult respondents reporting engaging in binge drinking in the past year, in comparison to the state rate of 32.6%.

Table 26: Self-reported adult binge drinking in the past year

Indicator	Percent Binge Drinking
Alameda County	23.9%
CA State	**32.6%**

(Source: California Health Interview Survey, 2014)

Key informant and focus group participants frequently pointed to the availability of alcohol as a key community issue that negatively impacts health. When describing the EMC Communities of Concern, one key informant was succinct: "*There are more liquor stores that there are community-based organizations*" (KI4). Another made this comment: "*So you have a community that on every corner has a liquor store*" (KI_9).

Substance Abuse

Rates of ED visits and hospitalizations related to substance abuse are not direct measures of prevalence of substance abuse in the ZIP codes, but rather provide a peek into the struggle with these issues across the HSA. Table 27 shows the rates for ED visits and hospitalizations by ZIP code due to substance abuse.

Table 27: ED visit and hospitalization rates due to substance abuse issues compared to county and state benchmarks (rates per 10,000 population)

	ZIP Code	ED Visits	Hospitalizations
Mental Health: Substance Abuse	94541	636.9	190.2
	94544	548.9	146.3
	94578	445.1	163.8
	94580	377.2	126.1
	Alameda County	*370.7*	*128.1*
	CA State	*256.3*	*145.8*

(Source: OSHPD, 2011-2013)

EMC Communities of Concern had rates for ED visits and hospitalizations that exceeded both county and state benchmarks in all ZIP codes with only one exception—hospitalizations due to substance abuse in ZIP code 94580 (San Lorenzo/Ashland). Among all Communities of Concern, ZIP code 94541 (N. Hayward/Cherryland) had the highest rates of both ED visits and hospitalizations.

Sexual Activity – Teen Birth Rate and STI Rates (including Chlamydia, Gonorrhea, and HIV/AIDS)

Teen Birth Rate

The teen birth rate (births to women under the age of 20) is an indicator used in this assessment to examine sexual behavior throughout the HSA. The national rate of teen births (age 15-19) currently is 26.5 per 1,000 live births.[31] The California state rate was 28.3 per 1,000 live births, and the Alameda county rate was 19.4 per 1,000 live births. Teenage births pose several health issues. Teen mothers, especially those who are single, are more likely to have dropped out of high school and are less able to support themselves; a high percentage end up on public assistance. In fact, half of all current welfare recipients had their first child as a teenager.[32] Figure 11 shows the teen birth rate for EMC HSA.

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

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

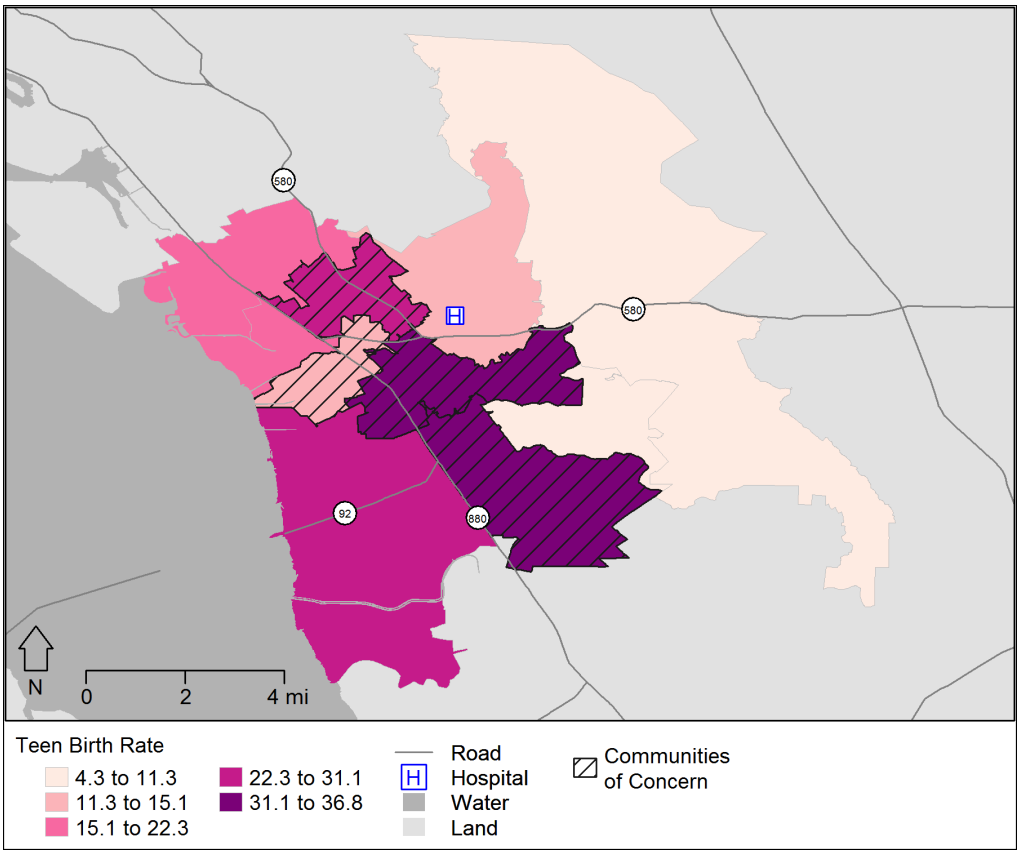

Figure 11: Teen birth rate for 15-19 year olds per 1,000 live births

Figure 11 shows that the highest rates of teen births were found in ZIP codes 94541 and 94544 (S. Hayward), with rates in the 31.1 to 36.8 per 1,000 live births range. ZIP code 94578 (Ashland) followed, with rates in the range of 22.3 to 31.1 per 1, 000 live births. ZIP code 94580 (San Lorenzo/Ashland) had the lowest rates among all Communities of Concern, with rates in the 11.3 to 15.1 per 1,000 live births range.

Several key informants mentioned the teen birth rate as a health issue. Specifically, key informants pointed to Ashland and Cherryland (both in ZIP code 94541) as having high teen birth rates: "*So I think in Cherryland specifically is the county leader in teenage pregnancy and I think that is also a health concern*" (KI_1). Another said: "*So I would say, teen pregnancy is definitely one of the major issues impacting this community*" (KI_2). Other key informants pointed to cultural norms surrounding teen births. One key informant stated: "*...more young Latina women and in [the Ashland and Cherryland] community, teen birth is not a bad thing. It's not seen as a bad thing in general…one has to be very careful going in and assuming that's an undesirable health issue*" (KI_8).

Sexually Transmitted Infections (STIs) and HIV/AIDS

Rates of STIs, including chlamydia, gonorrhea, and HIV, help describe engagement in risky sexual behavior in the Communities of Concern. Given that STIs are largely preventable, knowing which community members are most infected with STIs helps with targeting interventions for treatment and prevention. Table 28 displays prevalence rates for chlamydia and gonorrhea among 10-19 year olds in Alameda County compared to the state benchmark. As the data clearly showed, rates for both conditions were above the state comparative benchmark. Table 29 displays ED visits and hospitalizations

related to STI, and those specific to HIV/AIDS.

Table 28: Prevalence of chlamydia and gonorrhea among 10-19 year olds in Alameda County compared to the state rate (per 10,000)

STI Rates[33]	Chlamydia Rate	Gonorrhea Rate
Alameda County	78.8	21.0
CA State	*68.4*	*11.2*

(Source: CDPH, 2010-2014)

Table 29: 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	94541	13.8	7.2	8.6	5.0
	94544	9.2	5.4	4.1	3.8
	94578	10.1	8.1	4.1	6.4
	94580	4.8	4.1	2.1	2.8
	Alameda County	*11.8*	*6.1*	*7.0*	*4.8*
	CA State	*3.2*	*4.6*	*2.0*	*3.4*

(Source: OSHPD, 2011-2013)
*HIV/AIDS is considered a subcategory of STI in the ICD 9 diagnostic codes

Data displayed in Table 28 show that Alameda County had infection rates for chlamydia and gonorrhea that exceeded the state rate. Further, Table 29 shows that Alameda County had rates that in several instances were significantly higher than state rates. For example, the rate of ED visits due to STIs in Alameda County was 11.8, compared to the state benchmark of 3.2. Likewise, ED visits due to HIV/AIDS had a county rate of 7.0, compared to a state benchmark of 2.0. Rates for ED visits due to STIs for ZIP code 94541 were 13.8, compared to the state rate of 3.2. In sum, rates for the EMC Communities of Concern that exceeded the county benchmark were substantially higher than the state benchmark.

Clinical Care – Access to Care and Quality of Care

Health Professional Shortage Areas— Primary Care, Mental Health, and Dental

Health Professional Shortage Areas (HPSAs) are designated by the US Government Health Resources and Services Administration (HRSA) as having a shortage of primary medical, dental, or mental health Professionals; these shortages may be geographic (e.g., a county or service area); demographic (e.g., low income population) or institutional (e.g., comprehensive health center, federally qualified health center, or other public facility).[34] The data that follows includes HPSAs for primary care, mental health and dental care Professionals in the HSA, and specifically the ZIP code Communities of Concern.

[33] Lucile Packard Foundation for Children's Health. (n.d.). *Sexually Transmitted Infections, by Age Group* (from the California Department of Public Health 2010-2014). Retrieved from: http://www.kidsdata.org
[34] Health Resources and Services Administration. (n.d.). *Primary medical care HPSA: Designation Overview.* Retrieved from: http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/primarycarehpsaoverview.html

Health Professional Shortage Area – Primary Care

There were no federally designated primary care HPSAs in the EMC HSA. However, community residents consistently noted challenges when trying to schedule appointments with providers. Some commented that the implementation of the Affordable Care Act had placed additional burdens on already over-worked community health centers. For example, during a focus group a community member noted: "*…since Obama Care, all of the clinics are saturated. Like the clinics they used to go, they are not available to go regularly anymore because all of the clinics are saturated. They don't have capacity to see everyone*" (FG1). Another noted (via translator): "*They say that the challenge is that the appointments are really far. You have an illness and the doctor says for you to come back in three months. And it just that we are far apart and this is challenging to us*." Other community members noted the costs of accessing care without health insurance as a barrier. Others mentioned cultural competence as a barrier.

Health Professional Shortage Area – Mental Health

Figure 12 portrays the mental health HPSAs for the EMC Communities of Concern. Figure 12 reveals that the central portions of ZIP codes 94541 (N. Hayward/Cherryland) and 94578 (Ashland) are mental health HPSAs, as is a slight portion of ZIP code 94544 (S. Hayward).

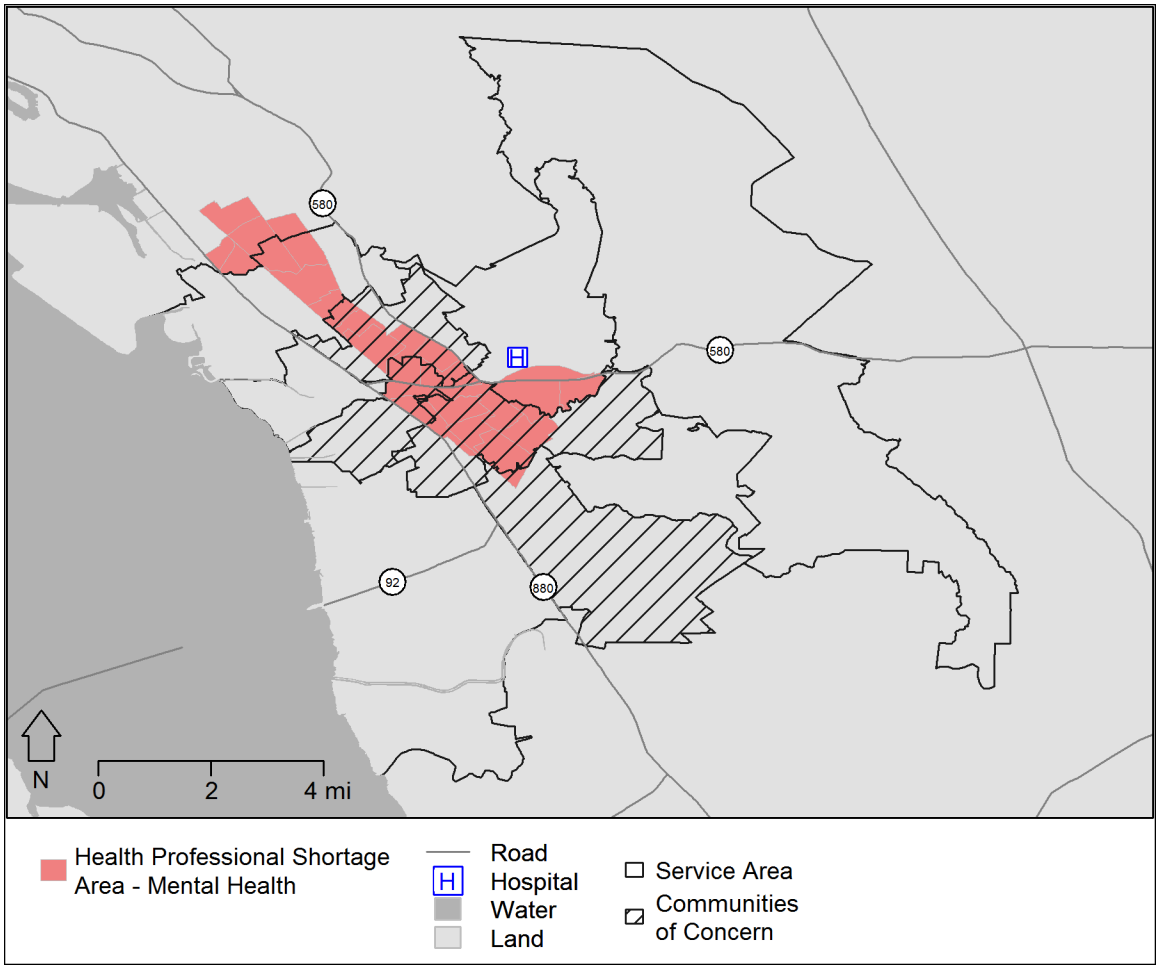

Figure 12: Mental health HPSAs for the EMC HSA

Every focus group and 80% of all key informants pointed to mental health issues as a priority health issue in the EMC Communities of Concern. These mental health needs appeared in many forms. Focus group participants spoke of stress, depression, and anxiety associated with living on the streets, in unsafe and violent conditions, or in situations with limited resources available to meet basic needs. Some mentioned the lingering effects of adverse childhood experiences on the mental well-being of some residents. One focus group participant described how they saw stress manifesting in behavior: "*I think with stress and depression, with people having depression, sometimes they don't eat; they won't eat because they are depressed and stuff like that. So they end up clinging to marijuana for them to be able to eat*" (FG_3). A key informant described the relationship between stress and diet in this way: "…*stress is a main driver of poor nutrition. It's not just access [to healthy food], it's the stress*…" (KI_8).

Another focus group described how an adverse childhood experience of being molested at a young age impacted their well-being:

> *I've been through a lot. I don't tell people, that's why I'm always in the house, I don't feel safe being outside, I don't feel safe in my own room sometimes. I can't go to sleep until 6 in the morning the next day, or 2 in the afternoon the next day because I don't feel safe, I feel like somebody is going to come in my room* (FG_3).

And another focus group participant described how adverse childhood experiences impacted their mental health: "*Kids bullied me until 10th grade. I dealt with that, people they have a hard time saying stuff about that, like me. I don't like to tell people about that. That's why I have psychological problems*…" (FG_3).

A key informant, when asked to describe health issues in the EMC HSA, described how undiagnosed and/or untreated mental health issues manifest in substance abuse:

> *They have the mental health issues. And they have substance abuse issues, and many times the mental health issue wasn't diagnosed when it started to manifest itself and these people started using alcohol or drugs to medicate their anxiety and their depression; and then they did it for many years and then they started to get in trouble with the law*…" (KI_4).

Finally, a key informant described how many traumatic adverse childhood experiences are at the root of problematic behavior: "…*we have to address the underlying trauma that these youths have experienced before we can really address whatever criminal or juvenile behaviors they were involved in*…" (KI_8).

When describing the lack of availability of mental health services, a focus group participant spoke of the challenge in this way: *"[There are] very few places to go for mental health assistance. And there is no place for people to go for rehab, people to go for drug rehab. People who want to get better, but they don't have a place to go to get better*" (FG_1).

Last, when asked of the most significant health needs in the EMC HSA, a key informant made this comment:

> *I just think mental health centers are needed because there's a lot of people in this area that have mental issues. You see them walking up and down the streets, you see them talking to themselves, you see them acting out at the grocery stores or in front of the grocery stores, and*

they have nowhere to go until they get through 5150 to go to a psych ward to get medicated; and they're just sent right out and no follow up. They have nowhere to go (KI_5).

Health Professional Shortage Area – Dental Care

Like primary care, there are no federally designated HPSAs for dental care in the EMC HSA. ED visits and hospitalizations (2013) related to dental care were provided earlier in this report, and clear geographic disparities were seen. However, as mentioned previously, these data were from a period prior to reinstatement of adult dental services under Medi-Cal coverage. The HPSA dental data presented here are from 2015, after the reinstatement of coverage. In addition, very few participants indicated that dental health issues were a significant challenge in the HSA.

Health Insurance Status

With the passage of the ACA, the overall number of Californians without any type of health insurance has decreased. However, many residents living within the EMC HSA remain uninsured, and many of these residents are particularly vulnerable. Table 30 displays the percentage of uninsured residents in the EMC Communities of Concern.

Table 30: Percent uninsured by ZIP code compared to county and state benchmarks

	ZIP Code	Percent Uninsured
Uninsured Rates	94541	17.7
	94544	21.5
	94578	18.4
	94580	12.4
	Alameda County	*12.6*
	CA State	*17.8*

(Source: US Census, 2013)

All ZIP codes except 94580 (San Lorenzo/Ashland) exceed the county rate, and two ZIP codes—94544 (S. Hayward) and 94578 (Ashland)—exceeded the state rate for the percentage of residents without health insurance. ZIP code 94544 (S. Hayward) had the highest rate of uninsured residents at 21.5%.

Quality of Care – Total Hospitalization and Emergency Department Utilization and Prevention Quality Indicators

Emergency Department and Hospital Utilization

Total hospitalization and ED visit rates can shed light on the overall health status of a community, and describe the state of the healthcare system, including access to primary healthcare services. In some instances, community residents are unable to obtain care in an ambulatory setting. Some obtain primary care in local hospital EDs, and others may allow a health condition to become acute, and then seek care in the ED. In some instances residents are hospitalized for these conditions. Figures 13 and 14 show the distribution of ED and hospitalization utilization by EMC HSA residents.

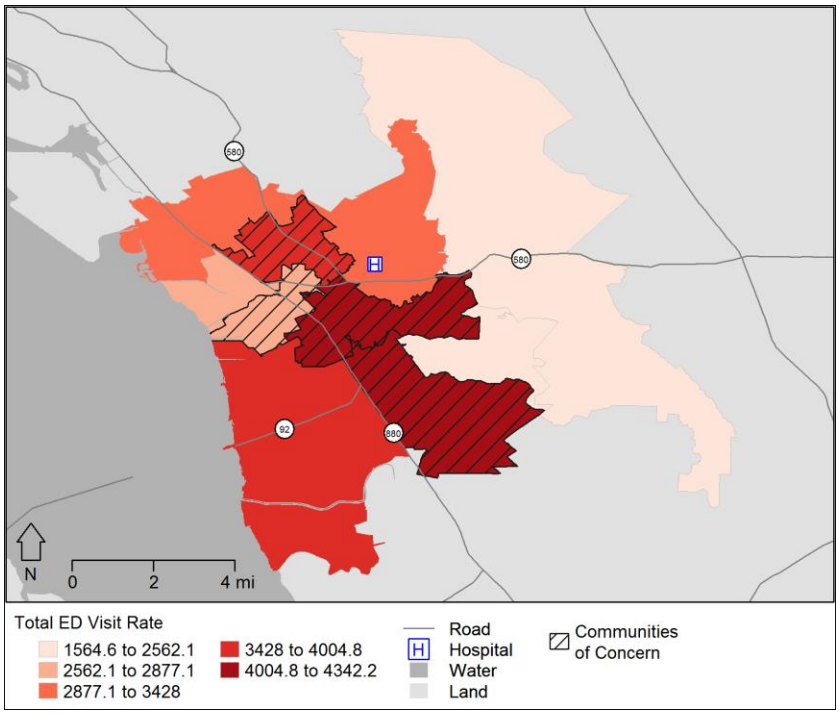

Figure 13: Total ED visit rates for EMC HSA

Figure 14 displays the distribution of total hospitalization rates within the EMC HSA.

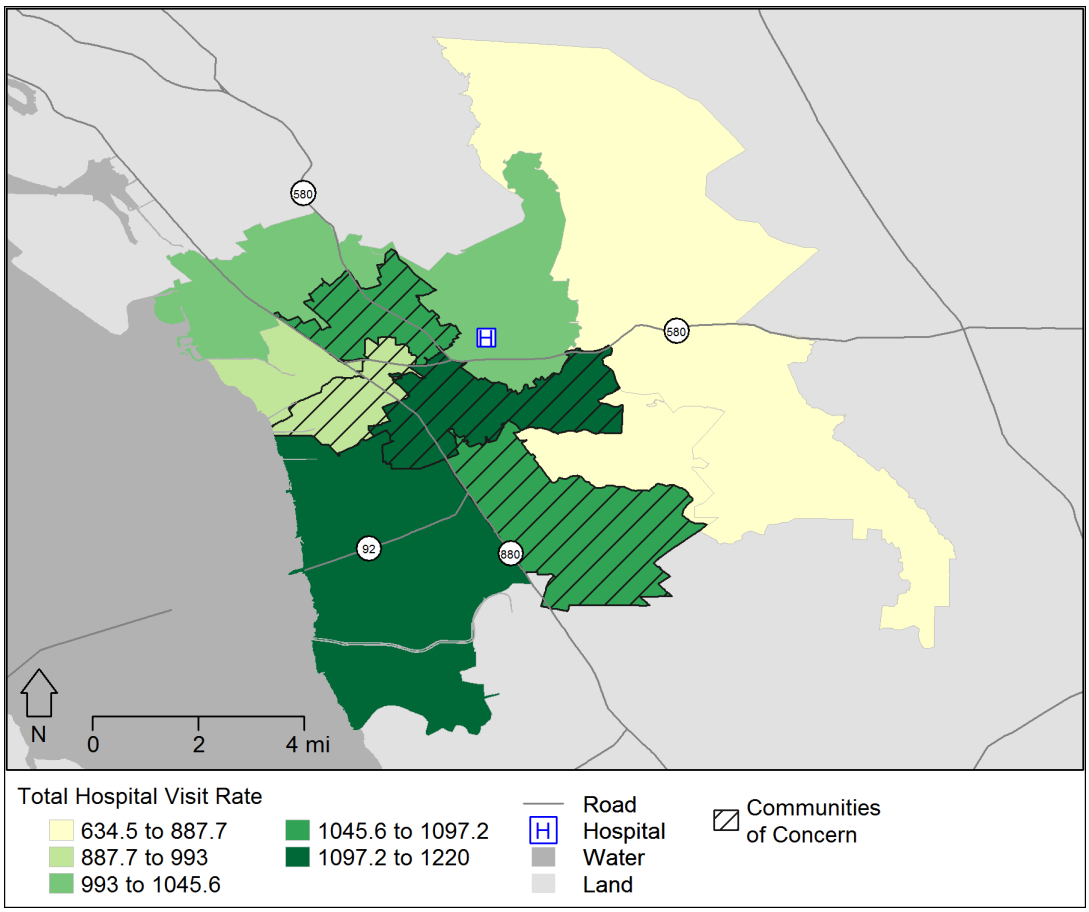

Figure 14: Total hospitalizations for EMC HSA

In a pattern not dissimilar to the total ED utilization noted earlier, ZIP code 94541 had the highest rates for total hospitalizations among all Communities of Concern, falling into a range of 1097.2 to 1220.0. This was followed by ZIP codes 94578 (Ashland) and 94544 (S. Hayward), both falling into the next highest range of 1045.6 to 1097.2. Again, ZIP code 94580 (San Lorenzo/Ashland) had the lowest rates among all Communities of Concern.

Preventable Hospitalizations – Prevention Quality Indicators

The Prevention Quality Indicators (PQIs) were developed by the Agency for Healthcare Research and Quality (AHRQ). The 13 identified PQIs are used to assess the quality of care for conditions for which good outpatient care could prevent the need for hospitalization, or when early intervention could prevent complications or decrease disease severity. These conditions are also known as ambulatory-sensitive conditions (ASCs) and are sometimes referred to as preventable hospitalizations.[35] Based on hospitalization rates, these indicators provide insight on the community health care system or services outside the hospital setting, such as access to quality healthcare and related services. The PQI indicators for each Community of Concern are noted in Table 32. Rates that exceeded any benchmark are highlighted.

Table 31: PQI number with corresponding diagnosis

PQI #	Indicator

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

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

Table 32: PQI for EMC Communities of Concern as rates of hospitalizations per 10,000 of population

ZIP Code	PQI1	PQI2	PQI3	PQI5	PQI7	PQI8	PQI10	PQI11	PQI12	PQI13	PQI14	PQI15	PQI16
94541	6.5	2.8	13.9	69.0	3.3	39.4	8.7	19.5	17.4	2.0	1.5	4.4	1.9
94544	6.2	2.5	14.2	54.5	3.2	33.5	6.9	15.1	15.8	2.1	1.2	3.5	1.6
94578	8.9	2.6	11.3	37.1	2.7	32.2	7.3	12.8	11.6	2.1	n/d	4.6	2.0
94580	4.0	2.5	9.2	22.5	2.4	26.7	8.5	15.2	12.0	n/d	n/d	n/d	n/d
EMC	*6.3*	*2.6*	*12.2*	*41.4*	*2.6*	*34.5*	*7.8*	*16.1*	*14.2*	*1.4*	*0.5*	*3.8*	*1.5*
Alameda	*5.2*	*2.6*	*9.0*	*33.0*	*2.3*	*29.4*	*5.7*	*15.2*	*11.3*	*1.5*	*0.7*	*3.5*	*1.4*
CA	*5.6*	*2.9*	*10.7*	*35.2*	*3.4*	*28.1*	*7.3*	*18.8*	*13.7*	*1.9*	*1.0*	*2.8*	*1.5*

(Source: OSHPD, 2013)

ZIP code 94541 (N. Hayward/Cherryland) exceeded benchmarks in all 13 PQIs, and the PQ15 rate was over twice that seen for the county. ZIP codes 94544 (S. Hayward) and 94578 (Ashland) exceed benchmarks in all but two indicators, PQIs 2 and 11; ZIP code 94578 (Ashland) did not have data available for PQI14. All Communities of Concern exceeded at least one PQI benchmark in PQIs 3, 7, 10, and 12.

Several community members commented on the quality of health care they received when accessing services. Some noted that they had limited time with providers, who often misdiagnosed disease: "*…so the challenge of the community health clinics is that they don't get the right health diagnosis*" (FG_1). Another participant from this same focus group attributed misdiagnoses to the limited time spent with healthcare providers: "*they are rushing trying to see a lot of people, and then they misdiagnose*."

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

Economic Stability – Education and Income

Indicators of economic stability used in the CHNA included percent of residents in each Community of Concern that 1) had no high school diploma, 2) lived below the federal poverty level, 3) were unemployed, 4) received public assistance, as well as the median household income for the area. Table 33 examines economic stability in EMC Communities of Concern.

Table 33: Percent: Adults with no high school diploma, living below 100% federal poverty level, median household income, percent on public assistance, and percent unemployed by ZIP code compared to county and state benchmarks

ZIP Code	Percent Adults with No High School Diploma	Percent Living in Poverty	Median Income	Percent Receiving Public Assistance	Percent Unemployed
94541	21.5	18.4	$56,656	19.2	16.0
94544	23.9	14.4	$60,448	16.7	13.7
94578	22.0	17.1	$51,518	15.6	11.1
94580	18.4	8.4	$71,098	8.9	12.3
Alameda County	*13.6*	*12.5*	*$72,112*	*10.5*	*10.3*
CA State	*18.8*	*15.9*	*$61,094*	*12.1*	*11.5*

(Source: US Census, 2013)

All ZIP codes except 94580 (San Lorenzo/Ashland) exceeded either the county or state benchmark in all indicators associated with economic stability, and some notably so. For example, ZIP code 94541 had nearly one in five residents receiving public assistance compared to the county benchmark of just over one in 10. Furthermore, almost one-quarter of residents in ZIP code 94544 (S. Hayward) did not have a high school diploma compared to the county benchmark of 13.6%.

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

Feeling safe in the community you live in is an important part of overall health. Safety is affected by both the physical and social environment in which community members reside. People who feel safe in their physical environment are more likely to spend time outdoors in a variety of activities.[36] Moreover, violence and crime in a community are related to the social environment of how much community residents feel they can trust the people around them to not engage in violent or criminal activity which may cause harm to themselves, the people they care about or their property. Conversely, repeated exposure to violence and crime could lead residents feeling traumatized and lacking trust in their safety of their community.

Indicators examined included measures of crime and violence, ED visits, and hospitalizations related to assault and intentional injury, as well as factors related to physically navigating the community and feeling safe from traffic related injury.

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

Major Crimes

Criminal activity in a community has a large effect on the community's actual and perceived safety. Major crimes reported to the California Department of Justice were used to create estimated major crime rates for places in the HSA. Crime data were examined for the EMC Communities of Concern areas of Hayward, San Leandro, and San Lorenzo (note: ZIP codes are approximations for these areas).

Table 34: Major crimes by jurisdiction and ZIP codes for EMC Communities of Concern

	ZIP Code	Place	Crimes by Area
Major Crimes	94541	Hayward	377.4
	94544		
	94578	San Leandro	507.2
	94580	San Lorenzo	385.3
	Alameda County		*470.2*
	CA State		*312.7*

(Source: California Department of Justice, 2013)

The crime rate for Alameda County was notably higher that the state rate. Though crime rates for all areas included in EMC Communities of Concern exceeded state benchmarks, only one ZIP code area, 94578 (Ashland), exceeded the county rate.

Assault – Emergency Department Visits and Hospitalizations

Understanding safety in the EMC requires the examination of both crime rates as shown above as well activities of intentional harm. Rates of assault (intentionally harming another person) are included in this assessment to gain a good understanding of violence and safety in the EMC HSA area. Figures 15 and 16 show ED visits and hospitalizations related to assault for the area.

Higher rates of ED visits due to assault are seen in ZIP codes 94541 (N. Hayward/Cherryland) and 94578 (Ashland), with rates falling into the range of 46.3 to 55.0 per 10,000 of the population. Both of these ZIP codes have rates higher than the county benchmark of 42.3 and state benchmark of 30.6 per 10,000. Rates for ZIP code 94544 (S. Hayward) fell into the 40.0 to 46.3 range, and ZIP code 94580 (San Lorenzo/Ashland) was in the third lowest range of 30.9 to 40.0. Rates for both of these ZIP codes, however, were higher than the state benchmark.

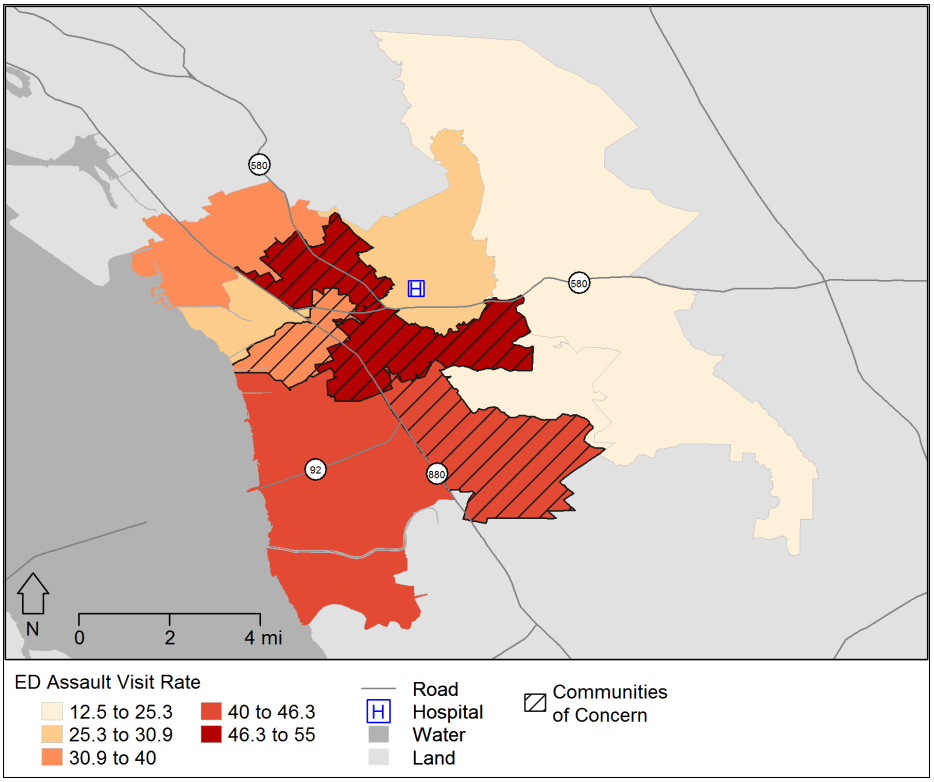

Figure 15: ED visits related to assault

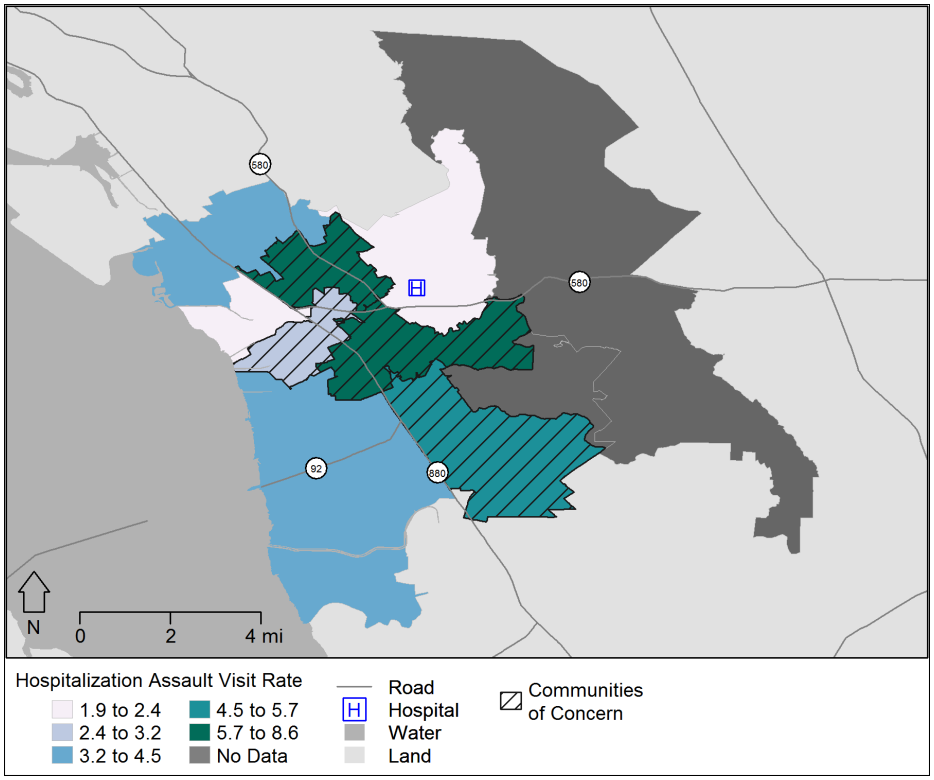

Figure 16: Hospitalizations related to assaults for the EMC HSA

The geographic pattern of hospitalizations due to assault for the EMC HSA mirrored that of ED visits, noted above. The highest rates were found in ZIP codes 94541 (N. Hayward/Cherryland) and 94578 (Ashland), both falling into the 5.7 to 8.6 per 10,000 of population range. These compare to county rate of 5.2 and state rate of 3.9.

Community safety and violence were consistent themes noted by both key informants and community residents throughout this CHNA. Many discussed the negative effects of living in an unsafe environment. For example, community residents noted that being afraid of spending time out-of-doors was often an impediment to an active lifestyle. Others discussed the violence they witnessed in the community and its impact on them:

> *The choices that people make because they don't feel like they can go walking outside because they don't feel safe…the parents are out working and the kids are in front of the TV set playing video games as opposed to being engaged in outdoor activities* (KI_1).

Another pointed to the community-level impact of violence:

> *I mean if you are going to be shot at or experience even the threat of physical violence, this is going to cause a certain amount of stress and family instability. There are usually economic problems around that if you are in a high crime area; you are probably not going to have a lot of businesses that serve healthy food or have good markets*…(KI_10).

Traffic Accidents with Fatalities

An examination of fatal traffic accident data helps us to understand the safety of people as they travel through the area they work and live. Figure 17 shows traffic accidents that resulted in a fatality. Data indicates that traffic accidents resulting in a fatality were spread throughout the EMC HSA.

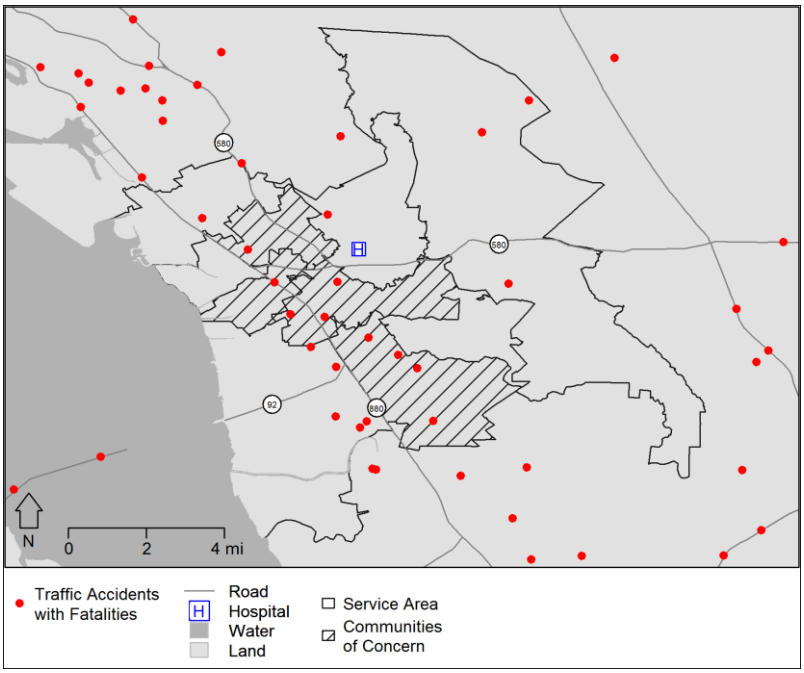

Figure 17: Traffic accidents resulting in a fatality for the EMC HSA and surrounding area

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

Pollution Burden Score

The California Environmental Protection Agency and the Office of Environmental Health Hazard Assessment developed the *California Communities Environmental Health Screening Tool, Version 2.0*.[37] 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, and various population characteristics to produce a "pollution burden" score for each census tract in the state, ranging between a minimum 0 and a maximum of 100, with higher scores indicator a great pollution burden. The pollution factors include ozone and PM2.5 concentrations; diesel PM emissions; pesticide use; toxic releases from facilities; traffic density; drinking water contaminants; cleanup sites; impaired bodies of water; 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 EMC Communities of Concern and is displayed in Figure 18. Each census tract's pollution burden score ranged from 0 to 100 and was assigned to a quintile. This is displayed in the figure using color gradation; in the figure, census tracts with darker colors have higher pollution burden scores.

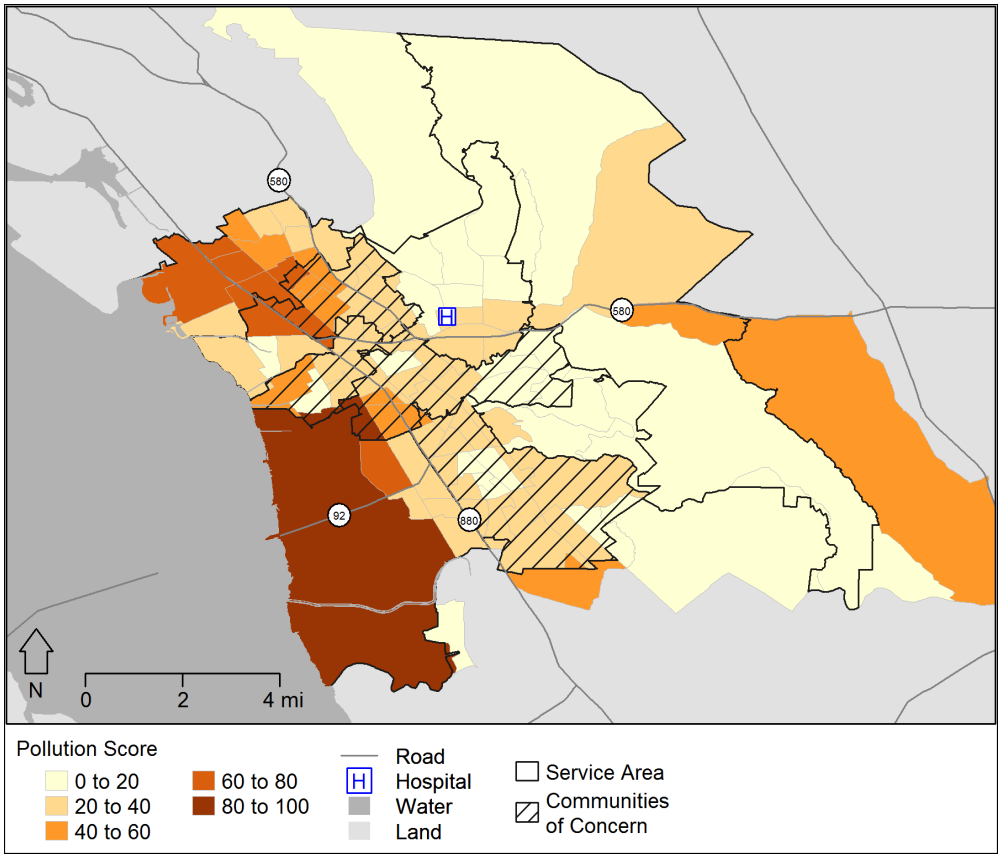

Figure 18: Pollution burden scores for census tracts in the EMC HSA

[37] *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

The figure shows that portions of ZIP code 94541 (N. Hayward/Cherryland) had a pollution burden score in the highest quintile, 80-100. Portions of ZIP code 94578 (Ashland) had census tracts with scores in the second, third, and fourth highest quintiles.

Several key informants and focus group participants spoke of the prevalence of asthma in the EMC Communities of Concern, especially among young people. One key informant, when asked to describe significant health issues in the EMC Communities of Concern, said: *"…asthma…a lot of [community residents] have kids that have been diagnosed with asthma, so that has been another issue*" (KI_3).

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

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

Housing Stability

One of the biggest health needs mentioned in the assessment was clean, stable, and good quality housing. The lack of a stable place to live can have negative health effects on individuals and families. Table 35 shows rates for various housing indicators by ZIP code for the Communities of Concern as indicators of housing stability.

Table 35: Housing vacancy, people living per housing unity and percent of population renting by ZIP code

ZIP Code	Percent Housing Vacancy	People Per Housing Unit	Percent Renting
94541	6.9	3.0	56.5
94544	5.1	3.5	48.6
94578	5.5	2.8	61.6
94580	3.5	3.3	31.7
Alameda County	*6.8*	*2.8*	*46.8*
CA State	*8.6*	*2.9*	*44.7*

(Source: US Census, 2013)

High vacancy rates are indicators of housing market conditions,[38] 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. Table 35 shows that ZIP code 94541 (N. Hayward/Cherryland) had a vacancy rate higher than the county and state benchmarks. ZIP code 94544 (S. Hayward) had the highest number of people per housing unit, exceeding both the county and state benchmarks. ZIP codes 94541 (N. Hayward/Cherryland), 94544 (S. Hayward), and 94578 (Ashland) all had high percentages of residents renting their homes.

Community residents and key informants consistently pointed to housing as a key health concern, specifically affordable and quality housing. Over 80% of all key informant and focus group participants mentioned the challenges of meeting their basic needs, specifically affordable housing. Discussing housing costs, one focus group participant said: "…*housing [cost] has always been a barrier.*

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

You need to make three times the rent. Well, for a two-bedroom being $2,100 and up, three times the rent would be $3,600 a month" (FG_2). Another in the same focus group noted another impact of housing costs, which being high occupancy or people per housing unit as described in the data above: "*Four to six people in a 10 by 10 room, okay? Bunk beds; living on carpet that hasn't been changed in 10 years. It's molded. Using one bathroom, 9, 10, 12 people using one bathroom every day*" (FG_2). Other key informants pointed to rising housing costs and how these have negatively impacted housing availability. As Bay area residents move into the East Bay, housing costs have increased and, in some instances, rent controls have been removed (KI_7). A key informant from an organization providing family services put it this way: "*…housing is a huge, huge, huge problem for our families*" (KI_11).

Distance to Nearest Transit Stop

Research shows that there are limits to the distances community residents are willing and capable of walking to access public transportation services. These distances have been documented in a number studies and vary due to a number of factors such as climate, attractiveness of the area, the amount of traffic on streets, and similar;[39] however, most estimates note that individuals will travel no more than one-fourth to one-third of a mile to access public transportation. Identifying areas that are at least one-half mile from a transit station helps highlight where transportation barriers may be contributing to poorer health outcomes.

Figure 19 shows areas of EMC Communities of Concern that are within one-half mile from a transit stop.

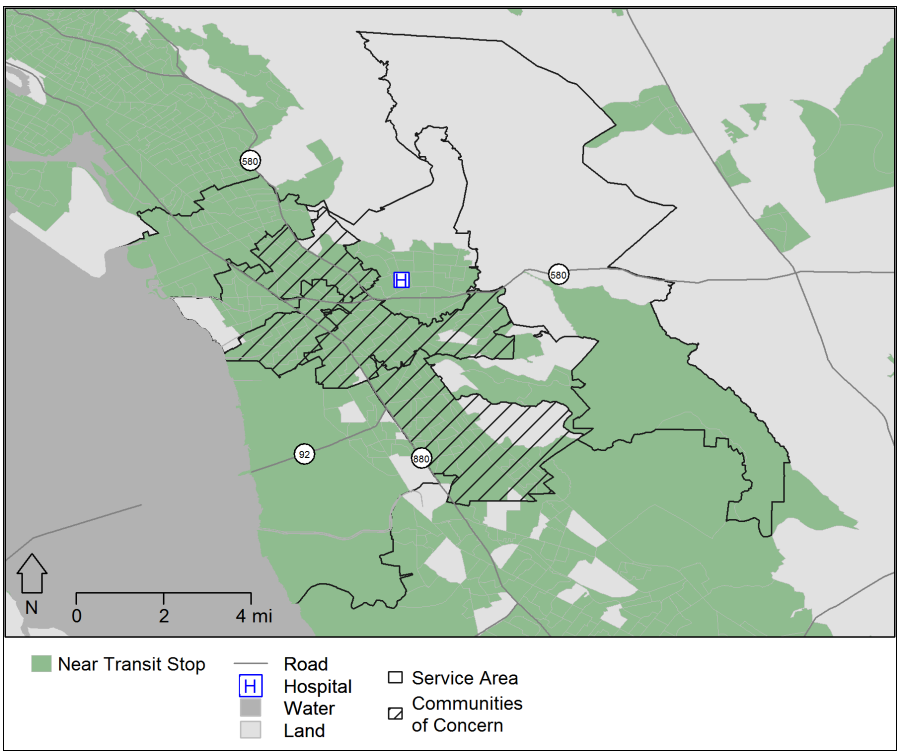

Figure 19: Locations in EMC HSA within one-half mile of a transit stop

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

In Figure 19, areas outside the shaded green portion on the map are located more than a half-mile from a transit stop. There are several of these areas in EMC Communities of Concern where residents have to travel more than one-half mile to access public transportation. These include some portions of 94541 (N. Hayward/Cherryland), 94544 (S. Hayward), and 94578 (Ashland).

One key informant described the difficulty in accessing transportation as a major contributor to stress and anxiety. When asked if transportation challenges contribute to anxiety, they replied: "*Yes, it is. It is because there's no public transportation. Parents who don't drive or don't have access to a car during the day have to push the kids' stroller everywhere* (KI9). Another participant, when asked to describe priority health issues in the EMC HSA, said: "*Transportation, getting from one place to another, and so when you talk about having to get to a doctor's appointment that is a huge challenge*" (KI_11). Yet another made this comment when asked what would improve the health of residents living in the EMC Communities of Concern:

> *I guess just making it easier for folks to actually get to the health, like where the health care is. I think even... the person I knew, the woman that couldn't get out to the bus to go see the doctor, I think it was just the physical infrastructure getting there* (KI_10).

The same key informant described the challenges of transportation and the impact across the HSA this way:

> *I think the active transportation infrastructure missing is big. I mean, kids can't walk to school and that's a big one and adults and seniors trying to get to senior centers have trouble walking to senior centers or to shopping. It's because we don't have good sidewalks or bike lane infrastructure* (KI_10).

Lastly, a focus group participant described the significance of transportation in daily life this way: "*Transportation is a big issue. I just got a car for the first time. Three years ago. I was on public transportation for 20 years. I'd be lost without it. I couldn't get anywhere. Get done what I need to get done in a day*" (FG_4).

Resources Potentially Available to Meet Significant Health Needs

There were 88 resources identified in the Communities of Concern in accordance to the analytical method detailed in Appendix B. The method for resource identification began with the list of resources from the 2013 EMC CHNA, verifying that the resource still existed, and then adding other resources identified in the primary data for the 2016 CHNA. Examination of the resources revealed the following number of resources for each significant health need:

Table 36: Resources available to meet significant health needs in priority order

Significant Health Need (in priority order)	Number of Resources
Access to quality primary care health services	11
Access to affordable, healthy food	7
Health education and literacy	14
Access to mental, behavioral, and substance abuse services	38
Access to basic needs such as housing and employment	28
Safe and violence-free environment	8
Access to specialty care	10
Access to transportation and mobility	0
Pollution-free living environment	1

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

Impact of Actions Taken Since Previous CHNA

The final regulations issued by the Department of Treasury on December 29, 2014, regarding nonprofit hospitals conducting CHNAs require that each hospital's CHNA report include: "… an evaluation of the impact of any actions that were taken since the hospital facility finished conducting its immediately preceding CHNA to address the significant health needs identified in the hospital facility's prior CHNA(s) (p. 78969)."[40] Prior to this report, EMC conducted its most recent CHNA in 2013. The 2013 CHNA identified six specific health needs. Working within its mission and capabilities, EMC identified three of the six needs to address in its community benefit implementation strategy:

1. Lack of access to mental health services/treatment
2. Limited access to quality primary, specialty and preventive health care services
3. Lack of access to nutritious food

A detailed report of the impact of the actions taken by EMC to address the health needs identified in the 2013 CHNA can be found in Appendix I.

Limitations

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

As always with primary data collection, gaining access to participants that best represent the populations needed for this assessment proved to be a challenge. Measures were taken to reach out to

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

area organizations for recruitment, assuming that the organization represented a Community of Concern geographically, racially, ethnically, or culturally. Some key informants and organizations that helped with focus groups participated in the 2013 round of data collection, possibly contributing to assessment fatigue. To help with recruitment, focus group participants were offered incentives such as food and refreshments. Additionally, data collection of health resources in the hospital service areas was challenging; though an effort was made to verify all resources (assets) collected in the 2013 round via web search, we recognize that ultimately some resources may not be listed that exist in the HSA.

Conclusion

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

Appendices

Appendix A: Secondary Data Dictionary and Processing

The secondary data supporting the 2016 Community Health Needs Assessment were collected from a variety of sources, and was processed in multiple stages before it was used for analysis. This document details those stages. It begins with a list of the secondary indicators collected, organized according to the conceptual model used in the CHNA. Next, the approaches used to define ZIP code boundaries and integrate P.O. box records into the analysis are described. General data sources are then listed, followed by a description of the basic processing steps applied to most indicators. It concludes by detailing additional specific processing steps used to generate a subset of more complicated indicators.

Secondary Indicators

The conceptual model illustrated in Figure A1 below guided the selection of secondary indicators. This model organizes individual health-related characteristics of populations in terms of how they relate to up- or down- stream factors of health and health disparities. Specific secondary indicators were selected to represent these characteristics in the needs assessment. Table A1 below lists these indicators, and identifies which health-related characteristic they are primarily used to represent.

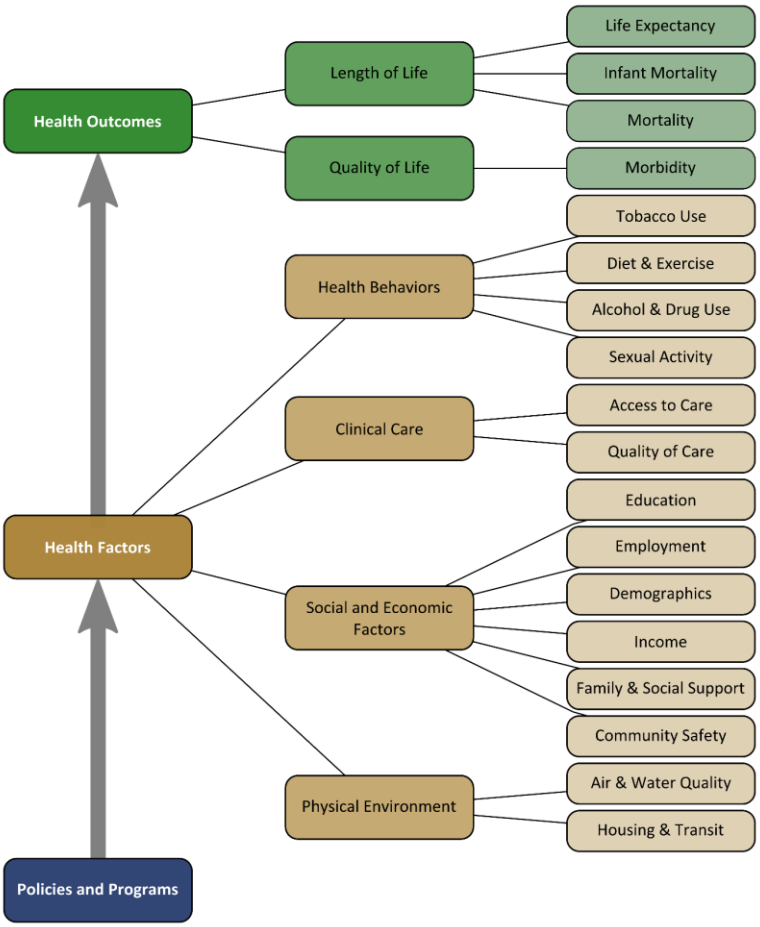

Figure A1: EMC Community Health Assessment Conceptual Model as modified from the County Health Rankings Model, Robert Wood Johnson Foundation, and University of Wisconsin, 2015

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

Conceptual Model			
Main Area	Sub Area	Concept	Indicator
Health Outcomes	Length of Life	Infant Mortality	Infant Mortality Rate
		Life Expectancy	Life Expectancy at Birth
		Mortality	Age-Adjusted All-Cause Mortality
			All Other Causes
			Alzheimer's Disease
			Cerebrovascular Disease (Stroke)
			Chronic Liver Disease and Cirrhosis
			Chronic Lower Respiratory Disease
			Diabetes Mellitus
			Diseases of the Heart
			Essential Hypertension & Hypertensive Renal Disease
			Female Mortality Rate
			Influenza and Pneumonia
			Intentional Self Harm (Suicide)
			Male Mortality Rate
			Malignant Neoplasms (Cancer)
			Years Potential Life Lost (75)
			Nephritis, Nephrotic Syndrome and Nephrosis (Kidney Disease)
			Unintentional Injuries (Accidents)
	Quality of Life/ Morbidity	Cancer	Breast Cancer
			Colorectal Cancer
			Lung Cancer
			Prostate Cancer
		Chronic Disease	Diabetes
			Heart Disease
			Hypertension
			Nephritis, Nephrotic Syndrome and Nephrosis (Kidney Disease)
			Stroke
		Infectious Disease	HIV/AIDS
			STIs
			Tuberculosis
		Injuries	Assault
			Self-Inflicted Injury
			Unintentional Injury
		Mental Health	Mental Health
		Respiratory	Asthma
			Chronic Obstructive Pulmonary Disease (COPD)
		Other Indicators	Hip Fractures
			Oral Cavity/Dental
			Low Birth Weight
			Total ED Discharge Rate
			Total H Discharge Rate

Conceptual Model			
Main Area	Sub Area	Concept	Indicator
Health Factors	Health Behavior	Tobacco Use	Current Smokers
		Alcohol and Drug Use	Binge Drinking
			Mental Health, Substance Abuse
		Diet & Exercise	Obesity
			Food Deserts
			Modified Retail Food Environment Index (mRFEI)
			Park Access
		Sexual Activity	Teen Birth Rate
	Clinical Care	Access to Care	Health Professional Shortage Areas (Primary Care, Dental, Mental Health)
			Percent Uninsured
		Quality of Care	Prevention Quality Indicators (PQI)
	Social and Economic Factors	Community Safety	Major Crime Rate
			Traffic Accidents Resulting in Fatalities
		Demographics	Percent Asian (Not Hispanic)
			Percent Black (Not Hispanic)
			Percent Hispanic (Any Race)
			Percent American Indian (Not Hispanic)
			Percent Pacific Islander (Not Hispanic)
			Percent White (Not Hispanic)
			Percent Other Race or Two or More Races (Not Hispanic)
			Percent Minority (Hispanic or Non-White)
			Racial/Ethnic Diversity Index
			Population 5 Years or Older Who Speak Limited English
			Population by Age Group: 0-4, 5-14, 15-24, 25-34,45-54, 55-64, 65-74, 75-84, and 85 and over
			Median Age
			Percent Non-Citizen
			Percent Female
			Percent Foreign-Born
			Percent Male
			Percent Civilian Noninstitutionalized Population with a Disability
			Total Population
			Percent Over 18 Who are Civilian Veterans
		Education	Percent 25 or Older Without a High School Diploma
		Family and Social Support	Percent Single Female-Headed Households
		Employment	Percent Unemployed
		Income	GINI Coefficient
			Median income
			Percent Families with Children in Poverty
			Percent Households 65 years or Older in Poverty
			Percent Single Female Headed Households in Poverty

Conceptual Model			
Main Area	Sub Area	Concept	Indicator
			Percent with Public Assistance
			Percent with Income Less Then Federal Poverty Level
	Physical Environment	Air & Water Quality	Pollution Burden
		Housing	Average Population per Housing Unit
			Percent Renter-Occupied Housing Units
			Percent Vacant Housing Units
		Transit	Percent Households with No Vehicle
			Population Living Near a Transit Stop

ZIP Code Definitions

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

First, it should be understood that ZCTAs are approximate representations of ZIP codes, rather than exact matches. While this is not ideal, it is nevertheless the nature of the data being analyzed. Secondly, not all ZIP codes have corresponding ZCTAs. Some PO Box ZIP codes or other unique ZIP codes (such as a ZIP code assigned to a single facility) may not have enough addressees residing in a given census block to ever result in the creation of a ZCTA. But residents whose mailing addresses correspond to these ZIP codes will still show up in reported health outcome data. This means that rates cannot be calculated for these ZIP codes individually because there are no matching ZCTA population figures. In order to incorporate these patients into the analysis, the point location (latitude and longitude) of all ZIP codes in California[41] were compared to ZCTA boundaries[42]. Because various health outcome data sources were available in different years, this comparison was made between the ZCTA boundaries and the point locations of ZIP codes in April of the year (or the central year in the case of indicators aggregated over multiple years) for which the health outcome indicators were reported. All ZIP codes (whether PO Box or unique ZIP code) that were not included in the ZCTA dataset were identified. These ZIP codes were then assigned to either ZCTA in which they fell, or in the case of rural areas that are not completely covered by ZCTAs, the ZCTA to which they were closest. Health outcome information associated with these PO Box or unique ZIP codes were then assigned added to the ZCTAs to which they were assigned.

For example, 94540 is a PO box located in Hayward. ZIP Code 94540 is not represented by a ZCTA, but it could have patient data reported as health outcome indicators. Through the process identified above, it was found that 94540 is located within 94544, which does have an associated ZCTA. Health outcome data for ZIP codes 94540 and 94544 were therefore assigned to ZCTA 94544, and used to calculate rates. All ZIP code level health outcome indicators given in this

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

[42] US 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

report are therefore reporting approximate rates for ZCTAs, but for the sake of familiarity of terms they are presented in the body of the report as ZIP code rates.

Data Sources

The majority of health factor and health outcome indicators were collected from three main data sources: the US Census Bureau (Census), the California Office of Statewide Health Planning and Development (OSHPD), and the California Department of Public Health (CDPH). Census data was collected both to provide descriptions of population characteristics for the study area, as well as to calculate rates for health outcome indicators. Table A2 below lists the 2013 population characteristic indicators and sources. Table A3 below lists sources for indicators used to calculate health outcome indicator rates, which were collected for 2012, 2013, and 2014. These demographic indicators were collected variously at the Census blocks and tracts, ZCTA, county, and state levels. In urban areas, Census blocks are roughly equivalent to a city block, and tracts to a neighborhood.

Table A2: Demographic indicators collected from the US Census Bureau[43]

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

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

Median Income	Estimate; Median household income in the past 12 months (in 2013 inflation-adjusted dollars)	2013 American Community Survey 5-year Estimate Table B19013
GINI Coefficient	Gini Index	2013 American Community Survey 5-year Estimate Table B19083
Average Population per Housing Unit	Total population in Occupied Housing Units	2013 American Community Survey 5-year Estimate Table B25008
Percent with Income Less Then Federal Poverty Level	Total: - Under .50; Total: - .50 to .99	2013 American Community Survey 5-year Estimate Table C17002
Percent Foreign Born	Total population - Foreign born	2013 American Community Survey 5-year Estimate Table DP02
Percent Non-Citizen	Foreign-born population - Not a U.S. citizen	2013 American Community Survey 5-year Estimate Table DP02
Percent Over 18 Who are Civilian Veterans	VETERAN STATUS - Civilian population 18 years and over - Civilian veterans	2013 American Community Survey 5-year Estimate Table DP02
Percent Civilian Noninstitutionalized Population with a Disability	DISABILITY STATUS OF THE CIVILIAN NONINSTITUTIONALIZED POPULATION - Total Civilian Noninstitutionalized Population	2013 American Community Survey 5-year Estimate Table DP02
Percent on Public Assistance	INCOME AND BENEFITS (IN 2013 INFLATION-ADJUSTED DOLLARS) - With cash public assistance income; INCOME AND BENEFITS (IN 2013 INFLATION-ADJUSTED DOLLARS) - With cash public assistance income	2013 American Community Survey 5-year Estimate Table DP03
Percent on Public Insurance	HEALTH INSURANCE COVERAGE - Civilian noninstitutionalized population - With health insurance coverage - With public coverage	2013 American Community Survey 5-year Estimate Table DP03
Percent Renter- Occupied Households	Occupied housing units - Renter-occupied	2013 American Community Survey 5-year Estimate Table DP04
Percent Vacant Housing Units	Total housing units - Vacant housing units	2013 American Community Survey 5-year Estimate Table DP04
Percent Households with No Vehicle	Occupied housing units - No vehicles available	2013 American Community Survey 5-year Estimate Table DP04
Total Population	Total Population	2013 American Community Survey 5-year Estimate Table DP05
Percent Asian (Not Hispanic)	Total Population - Not Hispanic or Latino - Asian alone	2013 American Community Survey 5-year Estimate Table DP05
Percent Black (Not Hispanic)	Total Population - Not Hispanic or Latino - Black or African American alone	2013 American Community Survey 5-year Estimate Table DP05

Percent Hispanic (Any Race)	Total population - Hispanic or Latino (of any race)	2013 American Community Survey 5-year Estimate Table DP05
Percent American Indian (Not Hispanic)	Total population - Not Hispanic or Latino - American Indian and Alaska Native alone	2013 American Community Survey 5-year Estimate Table DP05
Percent Pacific Islander (Not Hispanic)	Total population - Not Hispanic or Latino - Native Hawaiian and Other Pacific Islander alone	2013 American Community Survey 5-year Estimate Table DP05
Percent White (Not Hispanic)	Total population - Not Hispanic or Latino - White alone	2013 American Community Survey 5-year Estimate Table DP05
Percent Other or Two or More Races (Not Hispanic)	Total population - Not Hispanic or Latino - some other race alone; Total population - Not Hispanic or Latino - Two or More Races	2013 American Community Survey 5-year Estimate Table DP05
Percent Female	Total population - Female	2013 American Community Survey 5-year Estimate Table DP05
Percent Male	Total population - Male	2013 American Community Survey 5-year Estimate Table DP05
Median Age	Median age (years)	2013 American Community Survey 5-year Estimate Table DP05
Population by Age Group	Under 5 years; 5 to 9 years; 10 to 14 years; 10 to 14 years; 20 to 24 years; 25 to 34 years; 35 to 44 years; 5 to 54 years; 55 to 59 years; 60 to 64 years; 65 to 74 years; 75 to 84 years; 85 years and over	2013 American Community Survey 5-year Estimate Table DP05
Percent Single Female-Headed Households	Female householder, No Husband Present, Family Household	2013 American Community Survey 5-year Estimate Table S1101
Percent 25 or Older Without a High School Diploma	100 - Percent High School Graduate Or Higher	2013 American Community Survey 5-year Estimate Table S1501
Percent Families with Children in Poverty	All families - Percent Below Poverty Level; Estimate; With Related Children Under 18 years	2013 American Community Survey 5-year Estimate Table S1702
Percent Single Female-Headed Households in Poverty	Female householder, No Husband Present - Percent Below Poverty Level; Estimate; With Related Children Under 18 years	2013 American Community Survey 5-year Estimate Table S1702

Percent Unemployed	Unemployment rate; Estimate; Population 16 years and over	2013 American Community Survey 5-year Estimate Table S2301
Percent Uninsured	Percent Uninsured; Estimate; Total civilian Noninstitutionalized Population	2013 American Community Survey 5-year Estimate Table S2701

Table A3: Census indicators Used for Health Outcome Rate Calculations[43,44]

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

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

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

Collected health outcome data included the number of emergency department (ED) discharges, hospital (H) discharges[45], and mortalities associated with a number of conditions. Aggregated 2011 – 2013 ED and H discharge data were obtained from the Office of Statewide Health Planning and Development (OSHPD). Table A4 lists the specific indicators collected by ZIP code and county. These values report the total number of ED or H discharges that listed the corresponding ICD9 code as either a primary or any secondary diagnosis, or a principal or other E-code, as the case may be. In addition to reporting the total number of discharges associated with the specified codes per ZIP code/county, these data were also broken down by sex (male and female), age (under 1 year, 1 to 4 years, 5 to 14 years, 15 to 24 years, 25 to 34 years, 35 to 44 years, 45 to 54 years, 55 to 64 years, 65 to 84 years, and 85 years or older), and normalized race and ethnicity (Hispanic of any race, non-Hispanic White, non-Hispanic Black, non-Hispanic Asian or Pacific Islander, non-Hispanic Native American). In addition to the hospitalization and emergency department discharge data shown in Table A4, aggregated 2011 – 2013 Prevention Quality Indicators (PQI) (Version 4.5a) data were also obtained from OSHPD at the ZIP code and county levels.

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

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

Category	**Indicator Name**	**ICD9/E-Codes**
Cancer	Breast Cancer	174, 175
	Colorectal Cancer	153, 154
	Lung Cancer	162, 163

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

	Prostate Cancer	185
Chronic Disease	Diabetes	250
	Hypertension	401-405
	Ischemic Heart Disease	410-414
	Chronic Kidney Disease	580-589
	Stroke	430-438
Infectious Disease	HIV/AIDS	042-044
	STIs	042-044, 090-099, 054.1,079.4
	Tuberculosis	010-018, 137
Injuries[46]	Assault	E960-E969, E999.1
	Self-Inflicted Injury	E950-E959
	Unintentional Injury	E800-E869, E880-E929
Mental Health	Mental Health	290, 293-298, 301-302, 310-311
	Mental Health: Substance Abuse	291-292, 303-305
Respiratory	Asthma	493
	Chronic Obstructive Pulmonary Disease (COPD)	490-492, 494, 496
Other	Hip Fractures	820
	Oral Cavity/Dental	520-529
	Osteoporosis	733
Overall Discharges	Total Discharges	All Codes

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

Table A5: CDPH Birth and Mortality Data by ZIP Code

Indicator Name	**ICD10 Code**	**Years Collected**
Total Deaths		2012
Male Deaths		2012
Female Deaths		2012
Deaths by Age Group: Under 1, 1-4, 5-14, 15-24, 25-34,45-54, 55-64, 65-74, 75-84, and 85 and over		2010 - 2012
Diseases of the Heart	I00-I09, I11, I13, I20-I51	2012
Malignant Neoplasms (Cancer)	C00-C97	2012
Cerebrovascular Disease (Stroke)	I60-I69	2012
Chronic Lower Respiratory Disease	J40-J47	2012

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

Alzheimer's Disease	G30	2012
Unintentional Injuries (Accidents)	V01-X59, Y85-Y86	2012
Diabetes Mellitus	E10-E14	2012
Influenza and Pneumonia	J09-J18	2012
Chronic Liver Disease and Cirrhosis	K70, K73-K74	2012
Intentional Self Harm (Suicide)	U03, X60-X84, Y87.0	2012
Essential Hypertension & Hypertensive Renal Disease	I10, I12, I15	2012
Nephritis, Nephrotic Syndrome and Nephrosis	N00-N07, N17-N19, N25-N27	2012
All Other Causes	Residual Codes	2012
Total Births		2010 - 2012
Births with Infant Birthweight Under 1500 Grams, 1500-2499 Grams		2010 - 2012
Births with Mother's Age at Delivery Under 20		2010 - 2012

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

Table A6: Remaining Secondary Indicators

Indicator	Year	Definition	Reporting Unit	Data Source
Binge Drinking	2014	Adult Binge Drinking in the Past Year	County	2014 California Health Interview Survey http://ask.chis.ucla.edu/AskCHIS/tools/_layouts/AskChisTool/home.aspx#/geography (last accessed 9 Oct 2015)
Current Smokers	2014	Current Smoking Status: Adults and Teens	County	2014 California Health Interview Survey http://ask.chis.ucla.edu/AskCHIS/tools/_layouts/AskChisTool/home.aspx#/geography (last accessed 9 Oct 2015)
Food Deserts	2010	USDA Defined Food Desert; Low Access 1 mile Urban 10 Mile rural	Tract	USDA http://www.ers.usda.gov/data-products/food-access-research-atlas/download-the-data.aspx (Last Accessed 9 Oct 2015)
Modified Retail Food Environment Index (mRFEI)	2013	Table 00CZ2 for the following NAICS codes: 445120, 722513, 445230, 452910, 445110	ZCTA	US Census Bureau 2013 County Business Patterns
Park Access	2010	Percent of 2010 ZCTA Population in blocks Located Within 1/2 Mile of a Park	ZCTA	2010 Decennial Census SF1; ESRI U.S. Parks 2014, park_dtl.gdb Series Name Data and Maps for ArcGIS® Issue 2014 - World, Europe, and United States
Health Professional Shortage Areas (Primary Care, Dental, Mental Health)	2015	Current Primary Care, Dental Health, and Mental Health Professional 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)

Traffic Accidents Resulting in Fatalities	2013	Traffic Accidents Resulting in Fatalities	Point Locations	National Highway Traffic Safety Administration Fatality Analysis Reporting System (FARS) ftp://ftp.nhtsa.dot.gov/fars/2013/DBF/ (lass accessed 8 Sep 2015)
Pollution Burden	2014	Cal EnviroScreen Pollution Burden Scores Indicator (based on ozone and PM2.5 concentrations, diesel PM emissions, drinking water contaminants, pesticide use, toxic releases from facilities, traffic density, cleanup sites, impaired water bodies, groundwater threats, hazardous waste facilities and generators, and solid waste sites and facilities)	Tract	California Office of Environmental Health Hazard Assessment CalEnviroScreen Version 2.0 http://oehha.ca.gov/ej/ces2.html
Obesity	2014	Children Overweight for age (does not factor height); Body Mass Index – 4 level (teen only); Body Mass Index – 4 level (adult only)	County	2014 California Health Interview Survey http://ask.chis.ucla.edu/AskCHIS/tools/_layouts/AskChisTool/home.aspx#/geography (last accessed 12 Jan 2015)
Population Living Near a Transit Stop	2012	Population Weighted Centroid Distance to the Closest Fixed Public Transit Stop	Census Block Group	US EPA Smart Location Database https://edg.epa.gov/data/Public/OP/SLD/SmartLocationDb.zip (last accessed 29 Aug 2015)

General Processing Steps

Rate Smoothing

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

The next step in the analysis process was to calculate rates for each of these indicators. However, rather than calculating raw rates, empirical Bayes smoothed rates (EBR) were created for all indicators possible[47]. Smoothed rates are considered preferable to raw rates for two main reasons. First, the small population of many ZCTAs, particularly those in rural areas, meant that the rates calculated for these areas would be unstable. This problem is sometimes referred to as the small number problem. Empirical Bayes smoothing seeks to address this issue by adjusting the calculated rate for areas with small populations so that they more closely resemble the mean rate for the entire study area. The amount of this adjustment is greater in areas with smaller populations, and less in areas with larger populations.

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

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

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

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

[47] 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 adjustment[48] was performed on the all-cause mortality indicator. Because the occurrence of mortality varies as a function of the age of the population, differences in the age structure between ZCTAs could obscure the true nature of the variation in its pattern. For example, it would not be unusual for a ZCTA with an older population to have higher rate mortality than a ZCTA with a younger population. In order to accurately compare the experience of mortality between these two populations, the age profile of the ZCTA needs to be accounted for. Age adjusting the rates allows this to occur.

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

Benchmark Rates

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

County benchmark rates were calculated as raw rates for each county, or in the case of small counties, group of counties, using the relevant population values. State rates were calculated as raw rates by first summing all county level values (treating NA values 0), and then dividing these values by the relevant population value. HSA, county, and state benchmark rates were also provided for CDPH data. HSA benchmarks were calculated in a process similar to that described above for OSHPD HSA benchmarks: the total number of cases and relevant populations were summed for each indicator across all ZCTAs in the HSA, and used to calculate smoothed EBR rates using a broader set of HSAs.

County and state benchmark rates were either calculated using CDPH data reported at the county and state level[49,50], or else obtained from the County Health Status Profiles 2014[51]. The resulting benchmark values for CDPH and OSHPD indicators were all reported as rates per 10,000 unless the original indicator was reported using some other standard, as described below.

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[48] 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.

[49] 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

[50] 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/

[51] 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

Processing for Specific Indicators

Additional processing was needed to create the Community Health Vulnerability Index (CHVI), the CDPH-derived health outcome indicators, as well as some of the other health factor indicators. The process used to calculate these indicators 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 Barsi and Roth[52]. The CHVI uses the same basic set of demographic indicators to address health care disparities as outlined in the CNI, but these indicators are aggregated in a different manner to create the CHVI. For this report, the following nine indicators were obtained from the 2013 American Community Survey 5-year Estimate dataset at the census tract level:

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

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

CDPH-derived Health Outcome Indicators

Infant Mortality Rate

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

Teen Pregnancy Rate

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

Life Expectancy at Birth

[52] 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 R[53] using the Human Ecology, Evolution, and Health Lab's[54] example period life table function. This function was modified to calculate life tables for each ZCTA, and to allow the life table to be calculated from pre-calculated, smoothed, age-stratified mortality rates based on mortality reported in given age categories from the years 2010 – 2012.

Years Potential Life Lost (75)

Years Potential Life Lost (75) is a metric that can be used to compare health status across populations that better accounts for premature loss of life than many other metrics[55]. It was calculated here following the method described by Dranger and Remington[55]. In brief, this involved calculating EBR smoothed age stratified death rates using CDPH data from 2010 – 2011. For each age stratification group under 75 years of age, the midpoint age of the group was subtracted from 75, and the resulting value was multiplied by the smoothed age stratified rate. The resulting values for each age stratification were then age-adjusted using a 2010 California base population. These values were then individually multiplied by 10,000 and summed across all age groups to estimate the years of potential life lost before age 75 out of 10,000 people.

Health Factors

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

Diversity Index

The diversity index was calculated to measure the racial and ethnic diversity of geographic regions within the HSA. It was calculated using concepts from Iceland[56], but using Shannon's evenness index[57] rather than the specific methodology described therein. The diversity index represents how evenly the population within a given geographic unit is divided between the following seven racial/ethnic groups (described previously): Asian, Black, Hispanic, American Indian, Pacific Islander, White, and Other or Two or More Races. Diversity index values range between 0 and 1, with a value of 0 in areas where the entire population belongs to just one racial/ethnic group and a value of 1 in areas with population evenly divided between the seven groups. Readers interested in the specifics of index calculation are referred to the previously listed sources.

Major Crime Rates

Major crimes reported in the State of California Department of Justice's Crime Data reports are listed by reporting police agency. In order to estimate major crime rates, these values need to be associated with particular geographic areas, and then divided by those area populations. This was done for this report by comparing the names of police agencies to

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[53] 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.

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

[55] 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

[56] 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

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

populations reported for "places" (including both incorporated and unincorporated areas) by the US Census. Both crime and population data were obtained for 2013.

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

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

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

Park Access

The park access indicator reports the percentage of the 2010 population residing within each ZCTA that lives in a Census block that intersects a one-half mile buffer around the closest park. Esri's US Parks data set[58], which includes the location of local, county, regional, state, and national parks and forests, was used to determine park locations.

Modified Retail Food Environment Index (mRFEI)

The Modified Retail Food Environment Index (mRFEI) indicator reports the percentage of the total food outlets in a ZCTA that are considered healthy food outlets. Values below 0 are given for ZCTAs with no food outlets. The mRFEI indicator was calculated using a modification of the methods described by the National Center for Chronic Disease Prevention and Health Promotion[59] using ZIP code-level data obtained from the US Census Bureau's 2013 County Business Pattern datasets. Healthy food retailers were defined based on North American Industrial Classification Codes (NAICS), and included:

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

Food retailers that were considered less healthy included:

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

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

[59] 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

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

Appendix B: Detail Analytic Methodology

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

Overview

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

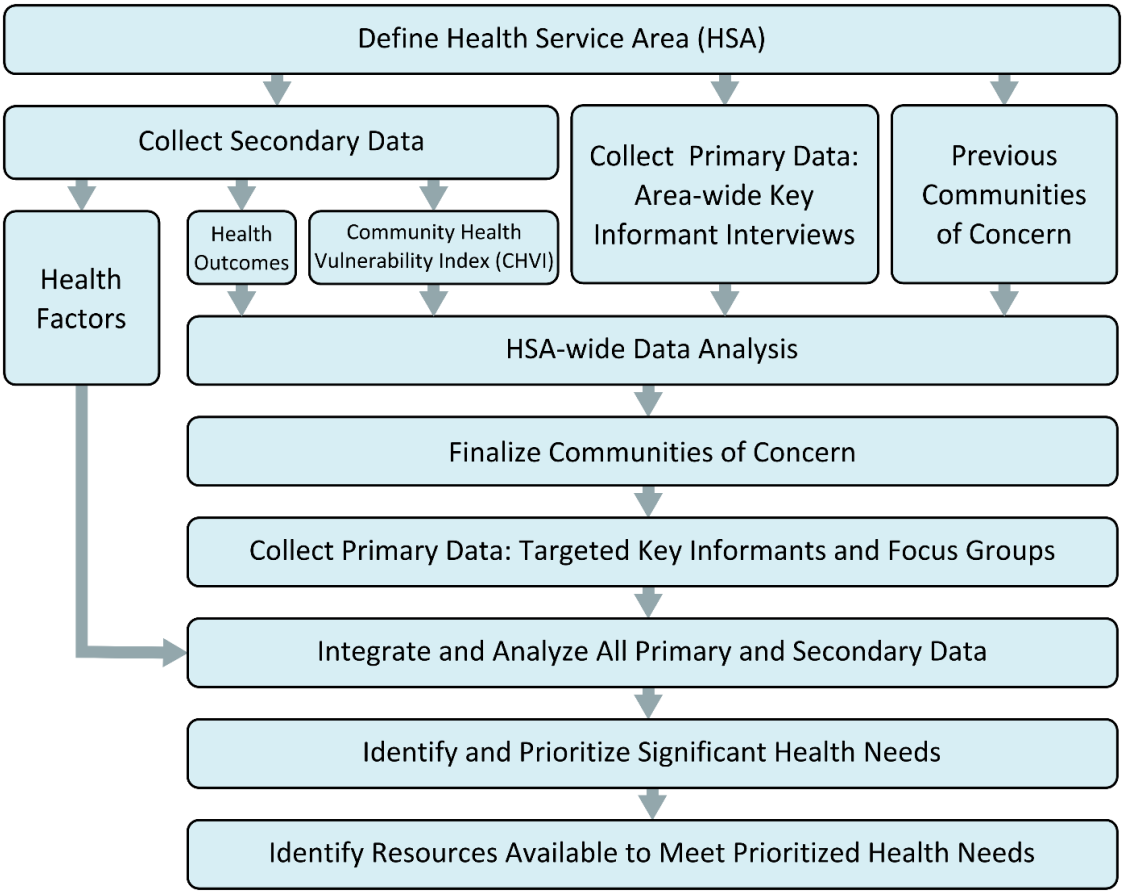

Figure B1: 2016 CHNA process model

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

The 2016 Communities of Concern were then used to identify what are referred to as “targeted” key informants and focus groups. These targeted primary data sources were selected based on their ability to speak to the needs of

particular geographic locations or subgroups experiencing disparities. Overall primary data, and secondary data for the Communities of Concern, were then integrated to identify the significant health needs for the HSA. Significant health needs were then prioritized based on analysis of the primary data. Finally, resources available within the HSA to address health needs were identified.

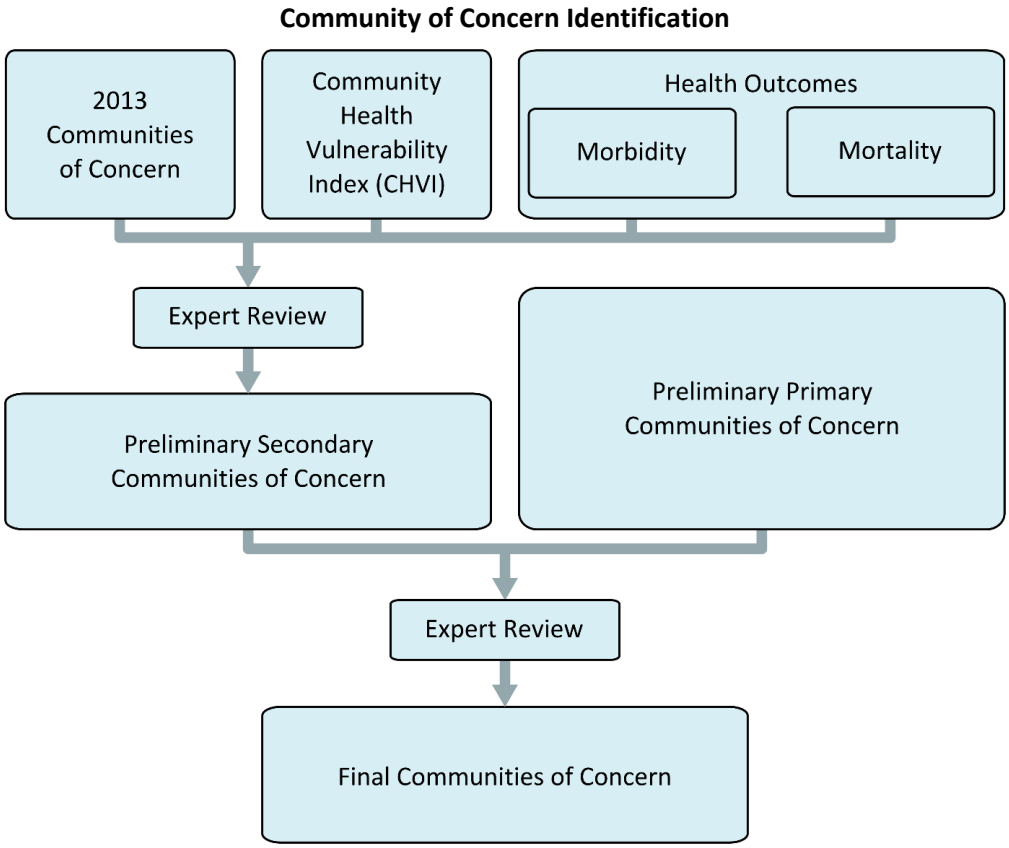

Figure B2: Community of Concern Identification Process

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

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

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

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

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

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

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

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

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

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

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

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

Expert judgment weights were developed using an Analytical Hierarchy Approach (AHP)[60]. This approach used a comparison matrix completed by an internal Community Health Insight subject area expert to rate the relative importance between each pair of mortality indicators in the analysis. These pair-wise importance comparisons were then processed to generate a priority matrix used to weight the mortality indicators. Indicators receiving a higher

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

prioritization value had more weight in determining which ZCTAs would be included as preliminary secondary Communities of Concern.

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

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

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

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

When the preliminary primary and secondary Communities of Concern were compared, it was noted that all Preliminary Secondary Communities of Concern were also identified as Preliminary Primary Communities of Concern except for 94545. When this ZCTA was compared to the CHVI values, it was found that only a small portion of the ZCTA contained a population that was likely experiencing significant health disparities, so this ZCTA was removed from the final Communities of Concern.

Significant Health Need Identification

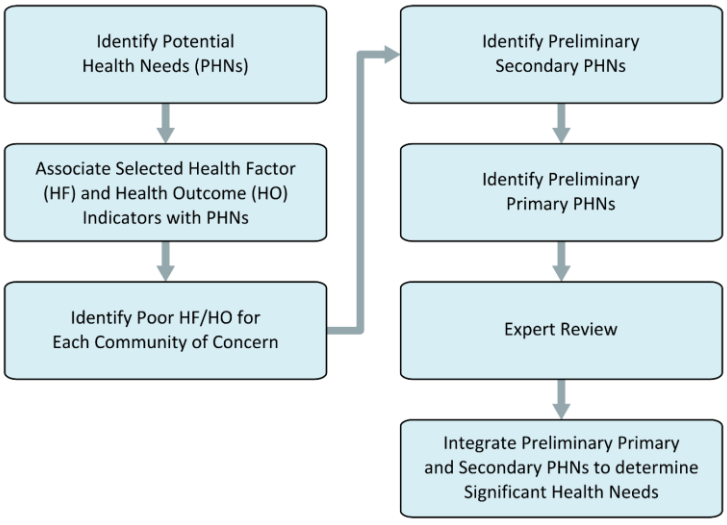

Figure B3: Significant Health Need identification process

The general methods through which significant health needs (SHNs) were identified are shown in Figure B3 above and described here in greater detail. The first step in this process was to identify a set of potential health needs (PHNs) from which significant health needs could be selected. This was done by reviewing the health needs identified in the Sutter

East Bay region during the 2013 CHNA, and then supplementing this list based on a preliminary analysis of the primary qualitative data collected for the 2016 CHNA. This resulted in a list of 10 PHNs for the HSA, shown in Table B2 below.

Table B2: Potential health needs

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

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

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

	Health Need	**Quantitative Indicators**	**Qualitative Indicators**
PHN1	Access to mental/behavioral/substance abuse services	• CDPH – Suicide • OSPHD – Mental Health (ED/H) • Mental Health – Substance Abuse (ED/H) • OSHPD – Intentional Self-Injury (ED/H) • Health Professional Shortage Area: Mental Health	• Self-injury • Mental health and coping issues • Substance abuse • Smoking • Stress • Mentally ill homeless • PTSD
PHN 2	Access to quality primary care health services	• OSHPD – Total ED Discharge Rate • OSHPD – Female Breast Cancer (ED/H) • OSHPD – Colorectal Canter (ED/H) • OSHPD – Male Prostate Cancer (ED/H) • OSHPD – Total Hospital Discharge Rate • OSHPD – PQI • Health Professional Shortage Area – Primary Care • Uninsured	• Quality of care • Access to care • Health insurance • Care for cancer/cancer occurrence • Indicators in PQI: diabetes, COPD, CRLD, HTN, HTD, asthma, pneumonia
PHN 3	Access to affordable, healthy food	• CDPH – Cancer • CDPH – Diabetes • CDPH – Heart Disease	• Food access/insecurity • Community gardens

		• CDPH – Hypertension • CDPH – NEP • CDPH – Stroke • OSHPD – Diabetes (ED/H) • OSHPD – Heart Disease (ED/H) • OSHPD – Hypertension (ED/H) • OSHPD – NEP (ED/H) • OSHPD – Stroke (ED/H) • USDA-defined Food Deserts • Modified Retail Food Environment Index	• Fresh fruits and veggies • Distance to grocery stores • Food swamps • Chronic disease outcomes related to poor eating • Diabetes, HTD, HTN, stroke, kidney issues, cancer
PHN 4	Safe and violence-free environment	• OSHPD – Assault (ED/H) • OSHPD – Mental Health (ED/H) • OSHPD – Mental Health: Substance Abuse (ED/H) • CHIS – Binge Drinking • Traffic Accidents with Fatalities • Major Crimes • Park Access	• Crime rates • Violence in the community • Feeling unsafe in the community • Substance abuse: alcohol and drugs • Access to safe parks • Pedestrian safety • Safe streets • Safe places to be active
PHN 5	Access to dental care and preventive services	• OSHPD – Dental (ED/H) • Health Professional Shortage Area: Dental	• Any issues related to dental health • Access to dental care
PHN 6	Pollution-free living environment	• CDPH – Cancer • CDPH – Chronic Lower Respiratory Disease • OSHPD – Asthma (ED/H) • OSHPD – COPD (ED/H) • OSHPD – Lung Cancer (ED/H) • CHIS: Adult and Teen Current Smokers • Pollution Score	• Smoking • Unhealthy air, water, housing, • Health issues: asthma, COPD, CLRD, lung cancer
PHN 7	Access to basic needs, such as food, housing, jobs	• CDPH – Age-adjusted all-cause mortality • CDPH – Infant mortality rate • CDPH – Life expectancy at birth • People per occupied housing unit • Housing unit vacancy rate • Percent with no diploma • Median Household Income	• Employment and unemployment • Poverty • Housing issues • Homelessness • Education access • Community quality of life

		• Percent below the federal poverty level • Public assistance • Renters • Unemployed	
PHN 8	Access to transportation and mobility	• Households with no vehicle • Distance to transit stop greater than ½ mile	• Physical access issues • Cost of transportation • Ease of transportation access • No car
PHN 9	Access to specialty care	• OSHPD – Diabetes (H) • OSHPD – Heart disease (H) • OSHPD – Hypertension (H) • OSHPD – Stroke (H) • OSHPD - Nephritis, nephrotic syndrome and nephrosis (H) • OSHPD – PQI • CDPH – Diabetes • CDPH – Heart disease • CDPH – Hypertension • CDPH - Nephritis, nephrotic syndrome and nephrosis	• Seeing a specialist for health conditions • Diabetes related specialty care • Specialty care for: HTD, HTN, stroke, kidney diseases
PHN 10	Health education and health literacy	• CHIS – Adult and teen current smokers • CHIS – Binge drinking • CDPH – Influenza and pneumonia • CDPH – Unintentional injury • CDPH – Diabetes • CDPH – Heart disease • CDPH – Hypertension • CDPH – Stroke • CDHP – Nephritis, nephrotic syndrome and nephrosis • CDPH – Teen birth rate • OSHPD – HIV (ED/H) • OSHPD – STI (ED/H) • OSHPD – TB (ED/H) • OSHPD – Unintentional injuries (ED/H) • OSHPD – Diabetes (ED/H) • OSHPD – Heart disease (ED/H)	• Factors related to preventing disease or injury • Unintentional injury • Smoking and alcohol/drug abuse • Teen pregnancy • HIV/STD • TB • Influenza and Pneumonia • Health classes • Health promotion teams and interventions • Need for health literacy

		• OSHPD – Hypertension (ED/H • OSHPD – Stroke (ED/H) • OSHPD – Nephritis, nephrotic syndrome and nephrosis (ED/H)	

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

Table B4: ZCTA measure for PHN identification and benchmark comparisons

Indicator	ZCTA Measure for PHN Identification	Benchmark Comparison
Life Expectancy at Birth	ZCTA Rate	Less than
Age-Adjusted All-Cause Mortality	ZCTA Rate	Greater than
Infant Mortality Rate	ZCTA Rate	Greater than
Malignant Neoplasms (Cancer) (Mortality)	ZCTA Rate	Greater than
Chronic Lower Respiratory Disease (Mortality)	ZCTA Rate	Greater than
Diabetes Mellitus (Mortality)	ZCTA Rate	Greater than
Diseases of the Heart (Mortality)	ZCTA Rate	Greater than
Essential Hypertension & Hypertensive Renal Disease (Mortality)	ZCTA Rate	Greater than
Unintentional Injuries (Mortality)	ZCTA Rate	Greater than
Chronic Kidney Disease (Mortality)	ZCTA Rate	Greater than
Influenza and Pneumonia (Mortality)	ZCTA Rate	Greater than
Cerebrovascular Disease (Stroke) (Mortality)	ZCTA Rate	Greater than
Intentional Self Harm (Suicide) (Mortality)	ZCTA Rate	Greater than
Traffic Accidents Resulting in Fatalities	Number in ZCTA	Greater than 0
Assault (ED/H)	ZCTA Rate	Greater than
Asthma (ED/H)	ZCTA Rate	Greater than
Breast Cancer (ED/H)	ZCTA Rate	Greater than
Colorectal Cancer (ED/H)	ZCTA Rate	Greater than
COPD (ED/H)	ZCTA Rate	Greater than
Diabetes (ED/H)	ZCTA Rate	Greater than
Oral Cavity/Dental (ED/H)	ZCTA Rate	Greater than

Indicator	ZCTA Measure for PHN Identification	Benchmark Comparison
HIV/AIDS (ED/H)	ZCTA Rate	Greater than
Heart Disease (ED/H)	ZCTA Rate	Greater than
Hypertension (ED/H)	ZCTA Rate	Greater than
Lung Cancer (ED/H)	ZCTA Rate	Greater than
Mental Health (ED/H)	ZCTA Rate	Greater than
Mental Health: Substance Abuse (ED/H)	ZCTA Rate	Greater than
Chronic Kidney Disease (ED/H)	ZCTA Rate	Greater than
Prostate Cancer (ED/H)	ZCTA Rate	Greater than
Intentional Self-Injury (ED/H)	ZCTA Rate	Greater than
STIs (ED/H)	ZCTA Rate	Greater than
Stroke (ED/H)	ZCTA Rate	Greater than
Tuberculosis (ED/H)	ZCTA Rate	Greater than
Unintentional Injuries (ED/H)	ZCTA Rate	Greater than
Total ED Discharges	ZCTA Rate	Greater than
Total H Discharges	ZCTA Rate	Greater than
PQI	ZCTA Rate	Greater than
Teen Pregnancy Rate	ZCTA Rate	Greater than
Binge Drinking	County Rate	Greater than state
Current Smokers	County Rate	Greater than state
Food Deserts	Does ZCTA intersect a food desert?	Yes/No
Modified Retail Food Environment Index	ZCTA Rate	Less than
Health Professional Shortage Area: Dental	Does ZCTA intersect shortage area?	Yes/No
Health Professional Shortage Area: Mental Health	Does ZCTA intersect shortage area?	Yes/No
Health Professional Shortage Area: Primary Care	Does ZCTA intersect shortage area?	Yes/No
Major Crime Rate	Crime rate of jurisdiction associated with ZCTA by Alameda County	Greater than
Park Access	ZCTA Rate	Less than
Pollution Burden	Does the ZCTA intersect Census tract with pollution burden score in the top 20% of the state?	Yes/No
Population Living Near a Transit Stop	Does the ZCTA intersect a Census block group for which the population weighted centroid distance to the closest public transit stop was 805 meters (approx. 1/2 mile) or more?	Yes/No
Median Income	ZCTA Rate	Less than
Percent Unemployed	ZCTA Rate	Greater than
Percent Uninsured	ZCTA Rate	Greater than
Percent Vacant Housing Units	ZCTA Rate	Less than

Indicator	ZCTA Measure for PHN Identification	Benchmark Comparison
Percent Renter-Occupied Housing Units	ZCTA Rate	Greater than
Percent with Income Less Then Federal Poverty Level	ZCTA Rate	Greater than
Percent 25 or Older Without a High School Diploma	ZCTA Rate	Greater than
Percent Households with No Vehicle	ZCTA Rate	Greater than
Percent with Public Assistance	ZCTA Rate	Greater than
Average Population per Housing Unit	ZCTA Rate	Greater than

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

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

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

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

For this report, any indicator above the benchmark in at least 75% of the Communities of Concern was identified as poor performing. A PHN was selected as a Preliminary Secondary Significant Health need only if 50% of the associated indicators were identified as performing poorly. A PHN was identified as a Preliminary Primary Significant Health Needs only if it was mentioned by 50% or more of the sources as performing poorly.

Significant Health Need Prioritization

Once identified for the HSA, the final set of SHNs could be prioritized. To reflect the voice of the community, SHNs were prioritized using an analysis of the primary qualitative data, based on two approaches to quantifying the primary data: the percent of all primary data sources that referenced the SHN, and the average number of times the SHN was

referenced across all data sources. These measures were developed for each SHN using NVIVO 10 Qualitative Analytical Software.

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

Resource Identification Process

The following process was followed in identifying resources and cataloging them for inclusion in the final CHNA report:

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

Appendix C: Informed Consent

Purpose

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

Procedures

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

Potential Risks or Benefits

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

Participants' Rights

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

Confidentiality

If you agree to participate, you will receive a copy of this consent form. The information you provide and anything you share with us will be kept in the strictest confidence. If a direct quote from your interview is used in the final report, a non-identifying coding system will be used.

How to Obtain Additional Information

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

_____ _____

Participant Print and Sign Date

_____ _____

Interviewer Print and Sign Date

Appendix D: Key Informant and Focus Group Interview Guide

Key Informant Interview Guide

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

Focus Group Interview Guide

1) Please tell me about the community that you live in?
      i) Probe for:

(1) Specific geographic areas?
(2) Specific populations that live there?
(a) How would you describe the people that live there?
(b) How would you describe the physical layout of the land?

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

Appendix E: Project Summary Sheet

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

Sutter Health East Bay Region affiliated hospitals, including Sutter Alta Bates Medical Center (three campuses) in Berkeley and Oakland, Eden Medical Center, Castro Valley, and Sutter Delta Medical Center, Antioch, have contracted with Community Health Insights (www.communityhealthinsights.com) to conduct the CHNAs. Community Health Insights is a Sacramento-based, research-oriented consulting firm dedicated to improving the health and well-being of communities across Northern California.

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

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

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

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

Dale Ainsworth, PhD
530-417-1770 (cell)

Appendix F: List of Key Informants

Organization	Number of participants	Area of Expertise	Populations Served	Date of Interview
Alameda County Department of Public Health (2 separate interviews)	4	Public health, population health	Alameda County residents	6/24/15 & 8/10/15
Supervisor Nate Miley's District Office (2 separate interviews)	3	General living conditions of population residing in jurisdiction	Residents in Castro Valley and surrounding area	6/24/15 & 7/16/15
United Seniors of Oakland and Alameda County	1	Community organizer; Senior services	Senior citizens residing primarily in the Ashland and Cherryland areas	7/16/16
Tiburcio Vasquez Health Centers	1	Primary care, dental, behavioral & mental health services; family support services	Low-income populations in San Leandro, Hayward, Union City, Fremont, and surrounding areas	8/5/15
Lincoln Child Services	3	Mental health, social support; family social support	Youth and families impacted by trauma and poverty	8/6/15
Abode Services, Fremont Shelter (2 separate interviews)	2	Housing	Homeless populations	8/17/15 & 9/1/15
Padres Unidos, Eden Church	1	Parent & community education to promote health and safety; immigration rights; quality healthcare for all	Hispanic/Latino immigrant populations primarily in the Cherryland area	9/2/15
San Lorenzo Ecumenical Food Pantry (Focus Group)	4	Food bank for community residents in need	Food insecure residents primarily residing in the San Lorenzo area	9/15/15
Second Chance	1	Substance abuse addiction and recovery	Individuals struggling with substance abuse & addiction	9/22/15
Alameda County Sheriff's Office, Youth & Family Services Bureau	1	At-risk youth; family and support services; individuals engaged with the criminal justice system	Youth primarily in central and south county, including those living in the Ashland/Cherryland areas	9/24/15
REACH Program, Ashland Youth Center	1	Youth education, health/wellness; career resources	Youth ages 11-24 years living primarily in the Ashland area	9/30/15
City of San Leandro, Recreation and Human Services	1	Services to community residents, including health education	Citizens of San Leandro	9/30/15
Hayward Adult School	1	Adult education services; GED; career development	Hayward area residents	10/7/15

Appendix G: List of Focus Groups

Location	Date	Number of Participants	Demographic Information
Padres Unidos, Eden Church	9/2/15	16	Community residents, primarily Spanish language
San Lorenzo Ecumenical Food Pantry (Focus Group)	9/15/15	4	Food-insecure residents primarily residing in the San Lorenzo area
Second Chance (Key Informant Interview & Focus Group)	9/22/15	12	Individuals recovering from substance abuse & addiction
Hayward Adult School	10/7/15	12	Hayward area residents, primarily young adults

Appendix H: Resources Potentially Available to Meet Significant Health Needs

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Abode Services: Project Independence	94541	Homeless prevention; foster youth	http://fosteryouthalliance.org/?point_of_contact=project-independence-of-abode-services	Homeless prevention program for youth leaving the Alameda County foster care system; Subsidized housing and comprehensive services	x						x			
Alzheimer's Services of the East Bay (ASEB)- Adult Day Health Care Program - Hayward Center	94541	Adult Day Health Care (ADHC)	http://aseb.org/daytime-care/	Adult Day Health Care (ADHC) Center	x						x			
Bay Area Community Services (BACS) - Hedco House Wellness Center	94541	Mental Health; chronic mental illness	http://alamedaco.info/Resource-Finder/Resource-Finder-Results-Details-Eden.asp?Prog=PG000287&web=e; https://www.bayareacs.org/wellness-services/	evaluation, prevention, diagnosis, and treatment of mental, emotional and behavioral health issues	x									

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Building Opportunity for Self Sufficiency (BOSS) - South County Homeless Proj.	94541	homeless mentally ill; emergency shelter	https://self-sufficiency.org/programs/south-county-homeless-project/	6 month long housing for homeless /mentally ill families; 24 beds	x						x			
Building Opportunity for Self Sufficiency (BOSS) - South County Sober Housing	94541	transitional housing	https://self-sufficiency.org/programs/south-county-sober-housing/	provides transitional housing and on-site case management to homeless individuals overcoming drug/alcohol issues							x			
East Bay Agency for Children- Child Assault Prevention (CAP) Training Center	94541	child abuse prevention; mental health services for children	http://www.ebac.org/programs/school/cap.asp	child abuse prevention workshops and trainings for children and parents; provides school-based therapeutic and rehabilitative mental health services to children; Nurturing Parenting Programs	x			x						

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
East Bay Commmunity Recovery Project (EBCRP)-Hayward Outpatient Division	94541	substance abuse treatment and services; mental health services	http://www.ebcrp.org/services/substance-use-recovery	treatment facility in Hayward, California which specializes in mental health and substance abuse services. They provide outpatient and partial hospitalization / day treatment options for those who enroll.	x						x			
ECHO Housing	94541	housing	http://www.echofairhousing.org/	promote equal access in housing and provide support services which would aid in the prevention of homelessness and promote permanent housing conditions.							x			
Eden I&R, Inc./ 211 Alameda County	94541	gaining information and access to	http://www.edenir.org/aboutUs.html	Linking people and resources, assist people in attaining information as well as gaining access to, community resources							x			

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Eden United Church of Christ	94541	church	http://edenucc.com/	a diverse and growing congregation where people of all ages and backgrounds join together to grow spiritually, do good in the world, and develop healing and nurturing relationships.							x			
Family Paths - 24- hour Parent Support Hotline	94541	parenting support- hotline	http://familypaths.org/what-we-do/24-hour-parent-support/	provides free and confidential counseling, information and referrals to anyone in need of parenting support	x									x
Family Paths - Counseling Services	94541	mental health therapy services	http://familypaths.org/what-we-do/mental-health-therapy/	wide variety individual, couple and family counseling	x									
HAART- Humanistic Alternative to Addiction, Research and Treatment - Methadone Maintenance & Detox Program	94541	substance abuse; opiate detoxification program	http://www.haarthayward.org/6520.html	Provides individualized outpatient care for users dependent on opiates, including heroin and prescription analgesics such as Vicodin and Oxycodone.	x									

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Hope for the Heart - Food Distribution	94541	access to food	http://www.hope4theheart.org/about-us/	providing food, produce, diapers, and household items to local families who are experiencing food insecurity							x			
Horizon Services, Inc. - CommPre	94541	substance abuse and enviornmental awareness	http://www.horizonservices.org/commpre.html	to reduce and prevent problems occurring in environments where alcohol and other drugs are used, sold and/or advertised and promoted						x				
Horizon Services - Project Eden	94541	Substance abuse	http://horizonservices.org/project-eden.html	substance abuse prevention, intervention, and treatment services to children, adolescents, adults, families, and communities in the Hayward and San Lorenzo Area; improve quality of life for individuals, families and community affected by substance abuse and mental health	x									

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
La Familia - Community Services	94541	access to resources	http://lafamiliacounseling.org/index.php/community-services/	build strong families, meet the needs of struggling parents, to increase self sufficiency, and promote youth development through positive peer and adult relationships, Neighborhood resource center,							x			
La Familia - Developmental Services	94541	access to resources	http://lafamiliacounseling.org/index.php/developmental-services/	few of the services provided: counseling, individualized program plan, assitance in access to community resources and care, training and education, community education and developmental disabilities							x			x
Planned Parenthood Mar Monte - Hayward Health Center	94541	health center	http://www.plannedparenthood.org/health-center/california/hayward/94541/hayward-health-center-4150-90130	vital reproductive health care, sex education, and information to millions of women, men, and young people		x								

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Ruby's Place	94541	homeless	http://www.rubysplace.org	provide prevention and supportive services to the community and people impacted by domestic violence, human trafficking or homelessness	x			x			x			
Salvation Army - Hayward Corps Community Center	94541	community center	http://www.alamedasalarmy.org/alameda_county/hayward	Food and nutritional programs, music and arts programs, Clothing and Donation Services, senior lunch program, Christion outreach services			x				x			
Seneca Center for Children and Families - Public School Therapeutic and Behavioral Services for HUSD - Hayward High School	94541	mental health; behavioral and therapeutic services	http://www.senecafoa.org/seneca_test_environment/publicschools	Seneca provides fee-for-service behavioral and therapeutic services for Hayward Unified School District special education students in various public schools and classroom types within Hayward	x									

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Telecare Corp. - Morton Bakar Center	94541	elderly mental health services	http://www.telecarecorp.com/programs/28	providing psychosocial rehabilitation and skills-building support for older adults (ages 65+) with a primary diagnosis of severe mental illness.	x									
Tiburcio Vasquez Health Center - Dental Department	94541	Dental Care	http://www.tvhc.org/ProgramsServices/Dental.aspx	variety of dental care for children and adults using state-of-the-art offices and equipment					x					
Tiburcio Vasquez Health Center - Family Support Services	94541	Support Services	http://www.tvhc.org/ProgramsServices/FamilySupportServices.aspx	comprehensive case management services to pregnant and parenting teens and young adults.							x			x
Tiburcio Vasquez Health Center - Hayward Clinic	94541		http://www.tvhc.org/ProgramsServices/PrimaryCare.aspx	Primary care	x	x								

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Tiburcio Vasquez Health Center - WIC	94541		http://www.tvhc.org/ProgramsServices/WIC.aspx	provides nutrition education, breast feeding support and referrals to other community services. Participants receive checks for healthy food items that are very important sources of nutrients for optimum growth and development, especially for children and expectant mothers during the early part of their pregnancy.			x							x
Women On The Way Recovery Center	94541	substance abuse, recovery, counseling, coaching	http://www.wotwrc.org/id7.html	provides a safe and loving home where women can regain their health, mental stability and dignity through a program of recovery and education	x									

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
California State University East Bay - CSUEB - Community Counseling Center	94542	mental health; counseling	http://www20.csueastbay.edu/cas/departments/epsy/CCC%20Center.html	provide counseling services that contribute to mental health and welfare to individuals and families in the community	x									
California State University East Bay - CSUEB - Speech, Language and Hearing Clinic	94542	speech and language	http://www20.csueastbay.edu/class/departments/commsci/clinic/index.html	speech, hearing and language screening, evaluations, and treatment, including the development of home programs									x	
Tiburcio Vasquez Health Center-Silva Pediatric Medical Clinic	94544	youth medical services	http://www.tvhc.org/PatientInformation/LocationsHours.aspx	clinic offers affordable, quality health and dental care to children and young people, ages 0-20 years.		x			x					x
Abode Services: HOPE Project Mobile Health Clinic	94544	mental health; mobile clinic	http://www.abodeservices.org/writable/tinymce/AbodeServices%20HOPE%20Brochure%206.23.15.pdf	Mental Health, Employment Support, Substance Abuse		x					x			
Afghan & International Refugee Support	94544	refugee support	http://www.manta.com/c/mmfsrb3/afghan-international-refugee-support	International Refugee Support							x			

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Alameda County Behavioral Health Services-ACBHCS - Crisis Response Program	94544	mental health	http://www.acbhcs.org/Contact%20Us/contacts.htm	suicide and crisis intervention and prevention	x									
Alameda County Housing and Community Development Shelter + Care	94544	housing (HIV& AIDS), homeless, medication services	https://www.acgov.org/cda/hcd/index.htm	plays a lead role in the development of housing and programs to serve the county's low and moderate income households, homeless, and disabled populations							x			
Alameda County public Health Department - ACPHD - WIC	94544	access to food	http://www.acphd.org/wic.aspx	Nutritional advice, help access healthy food			x							x

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Eden Youth and Family Center	94544	community	http://www.eyfconline.org/contact-us/	providing and supporting a comprehensive array of services and advocacy for the children, youth and families of Hayward, Eden Youth and Family Center enhances the economic, social, educational, and healthy well-being of the community.							x			
Eden Youth Family Center - New Start Tattoo Removal	94544	Youth care	http://www.eyfconline.org/programs/new-start-tattoo-removal-program/	provides the removal of visible gang and drug related tattoos to youth in the Eden and Tri-Cities geographical areas. The services include tattoo removal, goal setting and group support of young people, 13-25 years of age, who are seeking positive change.							x			

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Hayward Day Labor Center	94544	employment and community services	http://daylaborcenter.org	enable low-income, predominantly migrant workers in the East Bay Area, reach self-sufficiency through employment and community integration programs.							x			
Hayward Area Recreation & Parks District - HARPD - Matt Jimenez Community Center	94544	exercise, community	http://www.haywardrec.org/353/Matt-Jimenez-Community-Center-MJCC	improve quality of life, providing recreational activities, special events, services that encourage life-long learning, fitness and fun				x						
La Familia - Outpatient Counseling Clinic	94544	mental health	http://lafamiliacounseling.org/index.php/counseling-services	community mental health clinic, adults with serious mental illness, and children	x									
Lincoln Child Center	94544	mental health; child and family services	http://www.lincolnchildcenter.org/	provide a continuum of care for children, youth and families	x									

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Second Chance - Hayward Center	94544	Anger management, Substance abuse and recovery	http://secondchanceinc.com	Programs are 26-52 weeks. abstinence support groups, individual counseling, treatment planning, programs to help participants learn alternatives to aggressive behavior, PC 1000 Drug Diversion: counsel on alcoholism and drug abuse.	x									
South Hayward Parish - Emergency Food Pantry	94544	Access to food	http://southhaywardparish.org	Our food pantry or food bank provides emergency food for individuals and families. Short term food supplies available for individuals/families in need of assistance.			x				x			

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
South Hayward Parish - Hayward Community Action Network	94544	Access to resources	http://southhaywardparish.org/category/hcan/	A collaboration of individuals who are homeless and members of the faith, business, law enforcement, and social service communities who are working together to develop sustainable solutions.							x			
St. Rose Hospital - Women's Center	94544	access to medical services	http://www.wcsrh.org	provides comprehensive OB/GYN services and offers a unique experience designed to accommodate each woman's needs									x	
St. Rose Hospital - Women's Imaging Center	94544	medical services	http://www.strosehospital.org/patients-visitors/st-rose-clinics-resources/womens-imaging-center/	provides better images for doctors to examine and better diagnose breast cancer									x	

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Terra Firma Diversion/Educational Services - Court Ordered Drug Diversion Program (PC1000)	94544	substance abuse treatment	http://www.terrafirmadiversion.com	meets the needs of court mandated individuals who require additional professional assistance in maintaining a drug-free lifestyle, while avoiding the stigma of a criminal record.	x									
Terra Firma Diversion/Educational Services - Domestic Violence Treatment Program	94544	Domestic Violoence	http://www.terrafirmadiversion.com/programs.html	52 week Certified Domestic Violence Batterer's Treatment;	x			x						
Terra Firma Diversion/Educational Services - Anger Management	94544	Anger Managemnet	http://www.terrafirmadiversion.com/programs.html	This program is designed for individuals who need additional assistance in understanding how anger is affecting their lives	x			x						

Organization Information					Health Need Potentially Met by Organization (X)									
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Tiburcio Vasquez Health center - School based health services - Tennyson Health Center	94544	access to resources for overall well-being	http://www.tvhc.org/ProgramsServices/YouthHealthServices.aspx	medical and mental health services; advocate holistic health care, paying careful attention to the dynamic relationship between mind, body, and spirit. Our primary objective is to make important health and wellness information more readily accessible to youth and provide an effective tool for them to take control of their own well-being.	x	x					x			
Victory Outreach - Prison Counseling and Services; Residential Rehab Program - Hayward	94544	mental health; substance abuse counseling	http://voheart.org/recovery.html	Christian Recovery Homes- provides counseling for inmates and placement in the Victory Home after release, if requested by the individual.	x									
Alameda Health System-Hayward Wellness Center	94545	medical center	www.wintonahs.org	Family Medicine Services, Internal, Pediatric, OB/GYN, Midwifery Services		x							x	

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Chabot - Las Positas Community College District - Dental Hygiene Clinic	94545		http://www.chabotcollege.edu/dhyg/ClinicInfo.asp	Dental hygiene services in the comminity					x					
Chabot - Women in Transition	94545	course	http://www.chabotcollege.edu/Counseling/pscn.asp	Class at Chabot University							x			
Christian Counseling Centers, Inc. Hayward Christian Counseling Center	94545	mental health	http://www.christiancounseling.net/offices/offices.aspx?cmd=collection&collectionId=8	Christian counseling and psycotherapy services	x									
Horizon Services - Cronin House	94545	Substance abuse	http://www.horizonservices.org/HomePage/Programs.html	residential treatment program for adult males and females experiencing problems with alcohol or other drugs	x									

Organization Information					Health Need Potentially Met by Organization (X)									
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Seneca Center for Children and Families - Public School Therapeutic and Behavioral Services for HUSD - Mt. Eden High School	94545	mental health; behavioral and therapeutic services	http://www.senecafoa.org/seneca_test_environment/publicschools	Seneca provides fee-for-service behavioral and therapeutic services for Hayward Unified School District special education students in various public schools and classroom types within Hayward	x									
Spectrum Community Services, Inc. - Senior Nutrition and Activities Program	94545	access to food	http://www.spectrumcs.org/senior-services/senior-meals	healthy and convenient alternative to cooking, and offers freshly prepared, nutritious meals at nearly 30 Alameda County locations			x							
St. Rose Hospital- Main	94545	medical services	http://www.strosehospital.org	outstanding cardiology, emergency, diagnostics and women's services									x	
Eden Medica Center	94545	hospital; medical center	http://www.edenmedicalcenter.org/			x							x	

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Castro Valley High School-Padres Unidos	94546	parental education	http://www.cv.k12.ca.us/cvhs/students/parent-organizations/padres-unidos	It is intended to be a bridge between the parents and school to improve communication and address any issues related to student success at Castro Valley High School.										x
Kaiser - San Leandro Medical Center	94577	emergency and pharmacy services	https://healthy.kaiserpermanente.org/health/care/!ut/p/a0/FcdNCoAgEAbQs3iA-JI21q5TlLMbrGzAP0IKb1-93QNhBSW-xXOVnDh8twc7CVLbtLXEURwWEEg22KHXo9H_ysU-MmzKnWN37igxmmdW6gXUTg-O/	see website link for detailed services list								x	

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Interfaith Homeless Network- April Showers (located at Boys and Girls Club of San Leandro	94577	basic needs; shower faacilites; homless	http://www.ihnaprilshowers.org/	Shower opportunities. Shavers, soap, towels, wash cloths, combs tooth paste, toothbrushes, deodorant and other items supplied for showers. Clean new under clothing.							x			
Alameda County Behavioral Health Services -ACBHCS - Eden Children's Center	94578	mental health	http://www.acbhcs.org/Contact%20Us/contacts.htm	Mental Health, Crisis Support	x									
Alameda County Deputy Sherriffs' Activity League (at REACH Ashland Youth Center)	94578	activities; fitness; healthy lifestyle	http://acdeputysal.weebly.com/dsal-programs.html	exercise through recreation				x						x

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Alameda Health System-Fairmont Hospital	94578	rehabilitation services	www.fairmontahs.org	provides comprehensive and effective rehabilitation services to a diverse and complex patient population									x	
Alameda Health System: John George Psychiatric Hospital	94578	mental health	www.johngeorgeahs.org	psychiatric services										
City of San Leandro - Recreation and Human Services - Senior Community Center	94578		http://www.sanleandro.org/depts/rec/facilities/senior_community_center/	facility rental/ health and fitness				x						
Deaf Counseling Advocacy and referral Agency	94578	deaf community	http://www.dcara.org	advocacy provide programs for deaf or hard of hearing, peer counseling, employment assistance, community education, family connections department							x			x

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Dig Deep Farms	94578	farm; fresh producs; produce markets	http://digdeepfarms.com/	Using an economically and ecologically sustainable model, Dig Deep Farms employs local residents in Ashland and Cherryland to grow fresh, organically produced fruits and vegetables to meet the needs of the community			x							
Eden Medical Center - Outpatient Rehab	94578	Rehabilitation Services	http://www.edenmedicalcenter.org/services/pmr.html	highest level of rehabilitation, problems ranging from simple mobility issues to complex cognitive concerns									x	

Organization Information					Health Need Potentially Met by Organization (X)									
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EdenFit Supervised Exercise Program	94578	mental health	http://www.edenmedicalcenter.org/services/edenfit.html	supervised exercise program ideal for those who have just completed physical or occupational therapy, cardiac or pulmonary rehabilitation, and for those with a health condition such as cardiovascular disease, obesity, high blood pressure, diabetes or arthritis. A personal plan of exercise can help address specific health concerns.										x
George Mark Children's Home	94578	medical services	http://www.georgemark.org	serve families with children and young adults who have a serious medical illness and who are seeking family-centered medical care that emphasizes quality of life in a compassionate, supportive atmosphere.									x	

Organization Information					Health Need Potentially Met by Organization (X)									
Name	Zip Code	Key Words	Website	Specialty	1. Access to mental/behavioral/substance abuse services	2. Access to quality primary care health services	3. Access to affordable, healthy food	4. Safe and violent free environment	5. Access to dental care and preventive services	6. Pollution-free living environment	7. Access to basic needs, such as food, housing, jobs	8. Access to transportation and mobility	9. Access to specialty care	10. Health Education and Health Literacy
Horizon Services, Inc. - Cherry Hill Detox	94578	Substance abuse	http://www.horizonservices.org/HomePage/Programs.html	social model detoxification program for men and women withdrawing from alcohol and other drug (AOD) use who are also experiencing co-occurring mental disorders (COD	x									
REACH Ashland Youth Center	94578	youth center; medical services, recreational services, educational resources	http://reachashland.org/	honors youth power and builds community resilience	x	x		x	x					x

Organization Information					Health Need Potentially Met by Organization (X)									
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Seneca Center for Children and Families - Public School-Based Outpatient Counseling for HUSD	94578	mental health	http://www.senecafoa.org/publicschools	Individual behavioral and therapeutic students for special education students; Individual 1:1 behavioral intervention in the classroom; individual and family therapy, including home visits; behavior assessments, including FAA and PBIP preparation; mental health assessment and evaluation; case management	x									
Seneca Center for Children and Families - Willow Rock Center 23-Hour Crisis Stabilization and Outpatient Services	94578	mental health	http://www.senecafoa.org/	psychiatric crisis response programs for youth	x									

Organization Information					Health Need Potentially Met by Organization (X)									
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The Youth and Family Service Bureau	94578	mental health	http://acsoyfsb.org/	rograms to support community members who are facing serious life challenges or who are in contact with the criminal justice system	x						x			
Telecare Corp. - Villa Fairmont Short Stay Program	94578	mental health	http://www.telecarecorp.com/programs/45	stay in recovery center providing psychosocial rehabilitation and emphasizes skill building and linkage to community supports. Services include individual treatment, therapeutic group activities, medication support, pre-vocational and social work support.	x									
Telecare Corp. - Willow Rock Center	94578		http://www.telecarecorp.com/programs/96	psychiatric crisis stabilization and initial psychiatric treatment for adolescents ages 12-17	x									
Terra Firma Diversion/Educational Services - Drug Relapse	94578	Substance abuse	http://www.terrafirmadiversion.com	10 to 20 week program to assist substance and alcohol abusers who have relapsed,										

Organization Information					Health Need Potentially Met by Organization (X)									
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Prevention, Drug Testing and Youth Services				or those seeking to obtain sobriety										
TVHC -WIC	94578		http://www.tvhc.org/ProgramsServices/WIC.aspx				x							x
Al-Anon/ Alateen - District 15 - Oakland/Hayward Area	94580		https://www.ncwsa.org/d15/meetings.html	Substance abuse (alcohol)	x									
Ashland Free Medical Clinic	94580	Medical services	https://www.afmconline.org	Free basic non-emergency medical services to the uninsured , both acute and chornic conditions		x								x
Birthright of San Lorenzo	94580	Women	http://www.birthrightofsanlorenzo.com/	crisis pregnancy center		x								
La Clinica de la Raza, Inc. - Healthy Start Clinic - San Lorenzo HS Health Center	94580	student services	http://www.laclinica.org/SanLorenzo/	reproductive health services, sports physicals, prevention and treatment of STIs, health education and behavioral health services	x	x								x

Organization Information					Health Need Potentially Met by Organization (X)									
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San Lorenzo Family Help Center - Ecumenical Food Pantry	94580	Food Insecurity	https://www.facebook.com/SanLorenzoFamilyHelpCenter/timeline	Provides food to income-eligible individuals and families, emergency food programs							x			

Sutter Health
Eden Medical Center

Community Health Needs Assessment Impact Report

Responding to the 2013 Community Health Needs Assessment

20103 Lake Chabot Road
Castro Valley, CA 94546
www.edenmedcenter.org

This document serves as a report of the impact from community benefit programs, initiatives and activities put in place to address the needs identified by the 2013 – 2015 Community Benefit Plan for Eden Medical Center.

2013 – 2015 Implementation Strategy

On December 12, 2013, the Board of Directors of Sutter Medical Center Castro Valley passed resolution #13-12002 approving this Community Benefit IRS Implementation Strategy designed to respond to community health needs, defined as health drivers and health outcomes. Different than past community health needs assessments, the 2013 assessment focused on identifying specific vulnerable ZIP codes as communities most in need of support. While Sutter Health East Bay Region has many community benefit programs and services, this 2013-2015 implementation strategy is focused on responding to specific health needs of specific zip codes, including, but not limited to, those most vulnerable ZIP codes in the unincorporated areas of Ashland and Cherryland. (For a complete list of community benefit programs, please visit our website at www.edenmedicalcenter.org.)

All Sutter Health East Bay Region Community Benefit initiatives align with the following pillars:

1) Connect patients to the right care, place and time through access to primary care and mental health services
2) Invest in vulnerable areas to ensure capacity of care meets demands of vulnerable populations
3) Collaborate to influence behavior to utilize preventive care, chronic disease management and community services
4) Build community capacity and improve health

This implementation strategy describes how Eden Medical Center plans to address significant health needs identified in its 2013 Community Health Needs Assessment and consistent with its charitable mission. The strategy describes:

- Actions the hospital intends to take, including programs and resources it plans to commit;
- Anticipated impacts of these actions and a plan to evaluate impact; and
- Any planned collaboration between the hospital and other organizations.

Access to Health Resources

Name of Program, Initiative or Activity	**ED Utilization and Care Transitions**
Description:	The goal of the ED Utilization and Care initiative is to establish stronger working relationships with Winton Wellness Center and Tiburcio Health Center that will 1) improve care transitions of targeted patients between Eden and these health centers; 2) decrease level 1 and level 2 emergency department visits; 3) decrease readmission of patients from these clinics; and 4) provide access for uninsured and underinsured patients.
2013 - 2015 Impact	In June of 2014, Eden Medical Center entered into a care transitions collaboration with Tiburcio Vasquez Health Center. Community Benefit dollars funded the placement of a Nurse Practitioner to expand capacity for patients referred from Eden. In addition, a new Care Transitions Nurse (CTRN) and Medical Assistant were placed at Tiburcio for the purpose of ensuring connection to a medical home and a primary care follow up appointment for both inpatients and those visiting the Emergency Department. Due to issues with EPIC access and other logistics, there were challenges with start up. Since program inception, 823 patients have been identified and appointments requested. Of those appointments made, 80% of patients kept the appointments. A clerk was hired to assist the CTRN.

Mechanism(s) Used to Measure Impact	The Care Transitions Nurse completes a monthly worksheet with pertinent data related to appointments requested and kept. This is noted in the Electronic Health Record.

Name of Program, Initiative or Activity	**Provide taxi voucher to those with no means of transportation upon discharge from the hospital.**
Description	Transportation can be a problem for those who are discharged from the hospital and have no means of returning home. Funding will be allocated to provide transportation to bridge the gap to access care.
2013 - 2015 Impact	Taxi vouchers were provided to patients who were discharged from various departments and did not have a safe means of transportation to their home.
Mechanism(s) Used to Measure Impact	Patient logs are maintained and patient length of stay decreased.

Name of Program, Initiative or Activity	**Prescription Program for the Indigent**
Description	Through an agreement with Walgreens and Safeway, Eden Medical Center provides funding for prescription drugs for up to the first three days of a patient's discharge for people who otherwise would be unable to pay for their prescriptions.
2013 - 2015 Impact	A total of 84 community members would not have received appropriate pharmaceutical treatment without access to this program.
Mechanism(s) Used to Measure Impact	Patient logs are kept to document the number of patients who received medication.

Name of Program, Initiative or Activity	**Support professional education to ensure health care workers receive the skills, training, and experience they need to build a sustainable workforce and improve access to health care.**
Description	The program provides exposure, training, and experience to students working towards healthcare degrees. Working with various professional education institutions and schools, such as Samuel Merritt Nursing

	School, Touro University, the preceptorship and internship programs allow students the ability to work alongside staff to gain valuable clinic experience in a multi-disciplinary environment.
2013 - 2015 Impact	Education and training managed through Eden Medical Center led to job placement in the community for approximately 60% of the transition to practice students. In addition, Eden expanded its efforts in collaboration with Alta Bates Summit's Youth Bridge program and provided mentoring and paid summer internship placements for nine high school students—from some of the most vulnerable zip codes in our communities.
Mechanism(s) Used to Measure Impact	Some were hired at Sutter facilities and others were tracked as they left the program to accept work in the community at non-Sutter facilities.

Health Literacy

Name of Program, Initiative or Activity	**Chronic Disease Management: Risk reduction and prevention education to reduce chronic health problems in the Cherryland/Ashland area.**
Description	Increase community's awareness and understanding of importance of prevention and management of chronic disease to improve health outcomes for not only themselves, but their families. Begin exploring and identifying community partners (such as Tiburcio Vasquez Health Center) to offer language appropriate health education programs focusing on diabetes management and stroke, two diseases that experience high mortality and hospitalization rates, and find the most suitable place in the Ashland/Cherryland area to meet that would allow ease of access. Explore opportunities to work with Tiburcio Vasquez in helping educate clinicians and physicians to improve continuum of care for diabetic patients.
2013 - 2015 Impact	A plan was developed in collaboration with Tiburcio Vasquez Health Center to expand their promotora program to include English-speaking promotoras, as diabetes and heart disease are prevalent in the English-speaking community. These promotoras are increasing education efforts in Ashland and Cherryland specific to diabetes and stroke as well as providing information about access to primary care to families that need it.
Mechanism(s) Used to Measure Impact	The promotoras are being trained and will be placed in the community in the second quarter of 2016. They will keep records of the number of families with whom they interact and track their activities, and number and type of referrals.

Name of Program, Initiative or Activity	**Community Health Education**

Description	Utilizing Eden's Speakers Bureau (physicians, nurses, and professional staff), increase community awareness and understanding of the importance of prevention and management of diseases (hypertension, stroke, cancer, and respiratory diseases) and the importance of maintaining healthy lifestyles (diet, physical activity) by offering programs in the Communities of Concern.
Anticipated Impact and Plan to Evaluate	Generating more awareness regarding the prevention and management of chronic disease can lead to greater accountability and self-advocacy for one's health. The hospital will track the number of classes offered in the areas of concern, the number of people and the organizations served, and will conduct pre and post evaluation of patient knowledge.
2013 - 2015 Impact	The following classes and presentations relevant to chronic disease prevention were given between 2013 and 2015 : • Fall Prevention Fair • A Matter of Balance (senior injury prevention) • Childbirth Preparation • Childbirth Preparation Express • Baby Care • Breastfeeding Basics • Maternity Tour in Spanish • Childbirth Preparation in Spanish • Cancer Symposium • Keys to Living Well with Diabetes • The diabetes self-management education program • Gestational Diabetes Drop Ins • Diabetic Foot Health • Diabetes Management • Smoking Cessation • Cancer Awareness • Stroke Awareness • Hypertension/Heart Disease • Early Cancer Detection
Mechanism(s) Used to Measure Impact	Attendees signed in to each presentation. Pre and Post evaluation forms were given with positive feedback from participants.

Nutrition

Name of Program, Initiative or Activity	**Nutrition Education**
Description	Explore collaborative opportunities with Alameda County Office of Education, Kaiser Permanente, and other community organizations to assist with nutrition education and the development of obesity prevention strategies and programs for Shape Up Hayward.

2013 - 2015 Impact	In 2015 we entered into a collaborative relationship with the Alameda County Deputy Sheriff's Activities League and their "Dig Deep Farms & Produce" program. The program increases access to healthy food in the Ashland and Cherryland community, as well as provides nutrition education and nutrition-related activities to these vulnerable families. In 2015, 611 bags of produce were provided to families. Each bag comes with written nutrition information and recipes for the produce contained therein. Of these 611, 441 were given to clients of La Clinica's Fuente Wellness Center along with nutrition classes and recipes and 170 were given to formerly incarcerated members of the community, who were also given nutrition education and recipes.
Mechanism(s) Used to Measure Impact	Logs were kept by both the Fuente Wellness Center and by the Deputy Sheriff's Activities League documenting the recipients of the bags of produce.

Mental Health: Improving Health Drivers that Impact Mental Health (Safety)

Name of Program, Initiative or Activity	**Violence/Injury Prevention Education & Reduction Programs**
Description	This program is coordinated by the Eden Trauma Department staff in collaboration with local first responders, Eden staff, and city and county government agencies to reduce unintentional injury, reduce injury from motor vehicle accidents, and reduce violence in youth to improve safety in our community. These three programs include membership in the Senior Injury Prevention Program of Alameda County, Every 15 Minutes program for junior/senior high school students, and Caught in the Crossfire program - a gang diversion program.
2013 - 2015 Impact	The 2014 and 2015 Every 15 Minutes program videos, which highlight the dangers of drinking and driving, have reached over 1,330,000 people on YouTube. The mock crash and assembly were carried out in front of approximately 1,500 high school juniors and senior each year. Free educational fall prevention fairs were offered community seniors, these provided information on how to prevent a fall including medication management and exercise. We also held an 8-session "Stepping On" fall prevention class for about 14 people and focused on medication management, balance and strengthening exercises, home hazards and vision.
Mechanism(s) Used to Measure Impact	Pre and post tests were conducted with the students who participated in the Every 15 Minutes program and a post meeting was held to measure attitudes on drinking and driving. Attendees of the Fall Prevention Fair signed in and completed post event surveys. 100% of participants of the fair stated they learned helpful information on how to prevent a fall. A referral list is kept for violence prevention patients made to Youth Alive's Caught in the Crossfire program.

Mental Health: Behavioral Health and Substance Abuse

Name of Program, Initiative or Activity	**Investment in Davis Street Family Resource Center to increase capacity for providing behavioral health services**
Description	Davis Street Family Resource Center has been providing services to underserved families in the Eden area, including San Leandro, Ashland, Cherryland and San Lorenzo since 1970. Davis Street received FQHC status in 2015 and we entered a partnership to enable them to increase their capacity to provide mental health services to the community. Eden staff will connect with Davis Street clinicians to provide a warm handoff to patients that need non-emergent mental health so that they can get services quickly. Davis Street's capacity to provide services to the community will also increase.
2013 - 2015 Impact	Davis Street Family Resource Center was increasing their capacity to care for more behavioral health patients by the end of 2015, so no measurable impact was made in 2015.
Mechanism(s) Used to Measure Impact	The program was funded in the last quarter of 2015, so has not been evaluated yet. We will be tracking the number of behavioral health patients seen at Davis Street; those having been referred from Eden and those having self-referred or been referred through other Davis Street channels.