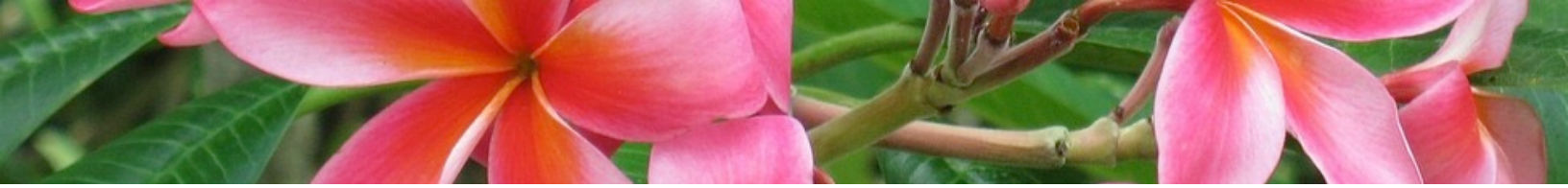

Healthcare Association of Hawaii

Hawaii County

Community Health Needs Assessment

North Hawaii Community Hospital

— November 2015 —

Healthy Communities INSTITUTE

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Executive Summary

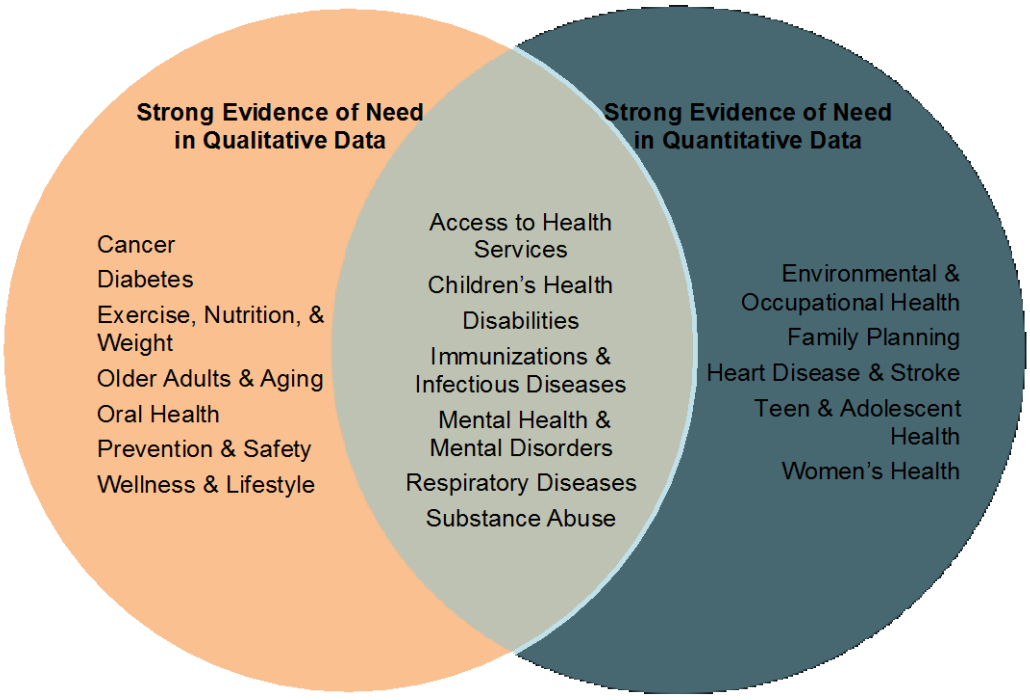
Introduction

The Healthcare Association of Hawaii and its member hospitals are pleased to present the 2015-2016 Hawaii County Community Health Needs Assessment (CHNA). This CHNA report was developed through a collaborative process and provides an overview of the health needs in Hawaii County. The Healthcare Association of Hawaii partnered with Healthy Communities Institute to conduct the CHNA for Hawaii County.

The goal of this report is to offer a meaningful understanding of the health needs in Hawaii County, as well as to guide the hospitals in their community benefit planning efforts and development of implementation strategies to address prioritized needs. Special attention has been given to identify health disparities, needs of vulnerable populations, unmet health needs or gaps in services, and input from the community. Although this report focuses on needs, community assets and the *aloha* spirit support expanded community health improvement.

Summary of Findings

The CHNA findings are drawn from an analysis of an extensive set of quantitative data (over 300 secondary data indicators) and in-depth qualitative data from key community health leaders and experts from the Hawaii Department of Public Health and other organizations that serve and represent vulnerable populations and/or populations with unmet health needs.



In qualitative data, topic areas demonstrating "strong evidence of need" were those discussed in at least two key informant interviews. In quantitative data, topic areas with "strong evidence of need" were those with secondary data scores in the top half of the distribution.

The most severe health needs, based on the overlap between quantitative data (indicators) and qualitative data (interviews), include Access to Health Services; Children's Health; Disabilities; Immunizations & Infectious Diseases; Mental Health & Mental Disorders; Respiratory Diseases; and Substance Abuse. Other significant health needs are based on strong evidence from either quantitative or qualitative data, and span a range of topic areas.

Though Hawaii County fares well in many health, wellbeing, and economic vitality indicators compared to other counties in the U.S., major themes emerged from the needs identified in this report:

- **Access to Care**: Hawaii County has significant unmet healthcare access needs due to provider shortages, limited oral health services and coverage, and inadequate coordination in mental health care. Residents also face substantial rates of poverty and challenges in transportation, further exacerbating access issues.
- **Chronic Diseases:** Many Hawaii County residents are at greater risk of chronic diseases due to relatively low access to healthy foods and exercise opportunities and high rates of food insecurity. There are many issues associated with diabetes: a high rate of prediabetes, inadequate diabetes management and education, and a correspondingly high rate of complications. Hawaii County also has a high prevalence of cardiovascular risk factors and diseases. Sub-optimal early responses to stroke and heart attack symptoms increase the likelihood of disability. Other areas of need include arthritis and cancer.
- **Environmental Health & Respiratory Diseases:** Volcano activity negatively impacts air quality and lava flow may threaten infrastructure and services on the Big Island. Asthma impacts much of the population, from children to older adults.
- **Mental Health & Health Risk Behaviors:** Access to mental health services and substance abuse treatment is limited. Rates of both suicide deaths and substance abuse are high across Hawaii County, but disproportionately impact residents of Native Hawaiian descent. Substance abuse is also an area of concern for teens and pregnant women. Risky behaviors lead to high rates of avoidable injuries and motor vehicle collisions. Intimate partner violence and abuse are also issues in Hawaii County.
- **Women's, Infant, & Reproductive Health:** There are high rates late or no prenatal care and substance abuse among mothers in Hawaii County, as well as high rates of poor birth outcomes. Rates of condom usage are low among teen girls, and teen birth rate is high, especially among Native Hawaiian and Other Pacific Islander teens.
- **Highly Impacted Populations:** The cross-cutting major themes are even more acute in certain geographical areas and subpopulation groups. These highly impacted populations tend to experience poorer health status, higher socioeconomic need, and/or cultural and linguistic barriers. For the highly impacted populations, a focus on the core determinants of health in addition to topic specific needs is likely to lead to the most improvement in health status.

Geographies with High Socioeconomic Need
Kau
Puna
South Hilo

Subpopulation Groups of High Need			
Native Hawaiian	Pacific Islander	Filipino	Hispanic/Latino
Children, teens, and adolescents	Older adults	People with disabilities	Rural communities
Low-income population	People from Micronesian regions*	Homeless population	

**This is intended to be a respectful reference that includes, but is not limited to, individuals from Micronesian states, Marshall Islands, Palau, Nauru, and other islands in the region. These individuals may have come to Hawaii through a Compact of Free Association agreement and may be provided healthcare benefits.*

The isolation of many subpopulations and geographies presents spatial and/or cultural/social challenges leading to the recommendations to increase the continuity of care and leverage telemedicine. Opportunities to prevent and intervene early with mental health issues, substance abuse, and the development of chronic disease are needed.

Upstream interventions to address the determinants of health are important for all health improvement approaches, but especially crucial for the highest-need geographies and populations that experience the greatest health inequities. Together, Hawaii County hospitals and health stakeholders are working towards a community where safety, wellness, and community support exist for all residents.

Selected Priority Areas

In the 2012 study, the CHNA identified 20 areas of community health needs. The Queen's Health Systems recognizes the importance of these needs and has supported efforts to address many of them. One of the major themes presented in the 2015-2016 report is *access to care***.** Hawaii County has significant unmet healthcare access needs due to provider shortages, limited oral health services and coverage, and inadequate coordination in mental health care. Residents also face substantial rates of poverty and challenges in transportation, further exacerbating access issues.

To promote and improve *access to care* for the people of Hawai'i Island, North Hawaii Community Hospital will focus on access through outreach, education, technology, and physician recruitment.

1 Introduction

1.1 Summary of CHNA Report Objectives and Context

In 2013, Hawaii community hospitals and hospital systems joined efforts to fulfill the new requirements of the Affordable Care Act, with guidelines from the IRS. Three years later, the group came together to repeat this process, in accordance with the final IRS regulations issued December 31, 2014, and re-assess the needs of their communities. The Healthcare Association of Hawaii (HAH) led both of these collaborations to conduct state- and county-level assessments for its members.

1.1.1 Healthcare Association of Hawaii

HAH is the unifying voice of Hawaii's healthcare providers and an authoritative and respected leader in shaping Hawaii's healthcare policy. Founded in 1939, HAH represents the state's hospitals, nursing facilities, home health agencies, hospices, durable medical equipment suppliers, and other healthcare providers who employ about 20,000 people in Hawaii. HAH works with committed partners and stakeholders to establish a more equitable, sustainable healthcare system driven to improve quality, efficiency, and effectiveness for patients and communities.

1.1.2 Member Hospitals

Fifteen Hawaii hospitals,[1] located across the state, participated in the CHNA project:

Castle Medical Center
Sutter Health Kahi Mohala Behavioral Health
Kaiser Permanente Medical Center
Kapiolani Medical Center for Women & Children
Kuakini Medical Center
Molokai General Hospital
North Hawaii Community Hospital*
Pali Momi Medical Center
Rehabilitation Hospital of the Pacific
Shriners Hospitals for Children - Honolulu
Straub Clinic & Hospital
The Queen's Medical Center
The Queen's Medical Center – West Oahu
Wahiawa General Hospital
Wilcox Memorial Hospital
**located in and serves Hawaii County*

1.1.3 Advisory Committee

The CHNA process has been defined and informed by hospital leaders and other key stakeholders from the community who constitute the Advisory Committee. The following individuals shared their insights and knowledge about healthcare, public health, and their respective communities as part of this group.

Kurt Akamine, Garden Isle Rehabilitation & Healthcare Center
Marc Alexander, Hawaii Community Foundation
Gino Amar, Kohala Hospital
Maile Ballesteros, Stay At Home Healthcare Services
Joy Barua, Kaiser Permanente Hawaii
Dan Brinkman, Hawaii Health System Corporation, East Hawaii Region
Rose Choy, Sutter Health Kahi Mohala Behavioral Health
Kathy Clark, Wilcox Memorial Hospital
R. Scott Daniels, State Department of Health
Thomas Driskill, Spark M. Matsunaga VA Medical Center

[1]Tripler Army Medical Center, the Hawaii State Hospital, and the public hospital system of Hawaii Health Systems Corporation (HHSC) are not subject to the IRS CHNA requirement and were not a part of this initiative.

Tom Duran, CMS
Laurie Edmondson, North Hawaii Community Hospital
Lynn Fallin, State Department of Health
Brenda Fong, Kohala Home Health Care of North Hawaii Community
Andrew Garrett, Healthcare Association of Hawaii
Beth Giesting, State of Hawai, Office of the Governor
Kenneth Graham, North Hawaii Community Hospital
George Greene, Healthcare Association of Hawaii
Robert Hirokawa, Hawaii Primary Care Association
Mari Horike, Hilo Medical Center
Janice Kalanihuia, Molokai General Hospital
Lori Karan, MD; State Department of Public Safety
Darren Kasai, Kula and Lanai Hospitals
Nicole Kerr, Castle Medical Center
Peter Klune, Hawaii Health Systems Corporation, Hawaii Region
Tammy Kohrer, Wahiawa General Hospital
Jay Kreuzer, Kona Community Hospital
Tony Krieg, Hale Makua
Eva LaBarge, Wilcox Memorial Hospital
Greg LaGoy, Hospice Hawaii, Inc.
Leonard Licina, Sutter Health Kahi Mohala Behavioral Health
Wesley Lo, Hawaii Health Systems Corporation, Hawaii Region
Lorraine Lunow-Luke, Hawaii Pacific Health
Sherry Menor-McNamara, Chamber of Commerce of Hawaii
Lori Miller, Hawaii Hospice
Pat Miyasawa, Shriners Hospitals for Children – Honolulu
Ramona Mullahey, U.S. Department of Housing and Urban Development
Jeffrey Nye, Castle Medical Center
Quin Ogawa, Kuakini Medical Center
Don Olden, Wahiawa General Hospital
Ginny Pressler, MD, State Department of Health
Sue Radcliffe, State Department of Health, State Health Planning and Development Agency
Michael Robinson, Hawaii Pacific Health
Linda Rosen, MD, Hawaii Health Systems Corporation
Nadine Smith, Ohana Pacific Management Company
Corinne Suzuka, CareResource Hawaii
Brandon Tomita, Rehabilitation Hospital of the Pacific
Sharlene Tsuda, The Queen's Medical Centers
Stephany Vaioleti, Kahuku Medical Center
Laura Varney, Hospice of Kona
Cristina Vocalan, Hawaii Primary Care Association
John White, Shriners Hospitals for Children – Honolulu
Rachael Wong, State Department of Human Services
Betty J. Wood, Department of Health
Barbara Yamashita, City and County of Honolulu, Department of Community Services
Ken Zeri, Hospice Hawaii

1.1.4 Consultants

Healthy Communities Institute

Based in Berkeley, California, Healthy Communities Institute was retained by HAH as consultants to conduct foundational community health needs assessments for HAH's member hospitals. The Institute, now part of Midas+, a Xerox Company, also created the community health needs assessments for HAH member hospitals in 2013, to support hospitals in meeting the first cycle of IRS 990 CHNA reports.

The organization provides customizable, web-based information systems that offer a full range of tools and content to improve community health, and developed www.HawaiiHealthMatters.org in partnership with the Hawaii Department of Health. The organization is composed of public health professionals and health IT experts committed to meeting clients' health improvement goals. To learn more about Healthy Communities Institute please visit www.HealthyCommunitiesInstitute.com.

Report authors from Healthy Communities Institute:

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Florence Reinisch, MPH
Jennifer M. Thompson, MPH
Rebecca Yae
Diana Zheng, MPH

Storyline Consulting

Dedicated to serving and enhancing Hawaii's nonprofit and public sectors, Storyline Consulting assisted with collecting community input in the form of key informant interviews. Storyline is based in Hawaii and provides planning, research, evaluation, grant writing, and other organizational development support and guidance. By gathering and presenting data and testimonies in a clear and effective way, Storyline helps organizations to improve decision-making, illustrate impact, and increase resources.

To learn more about Storyline Consulting please visit www.StorylineConsulting.com.

Key informant interviewers from Storyline Consulting:

Lily Bloom Domingo, MS
Kilikina Mahi, MBA

1.2 About the Hospital

North Hawaii Community Hospital is a 35 bed, full-service, acute-care hospital located in the heart of Kamuela on Hawaii Island, at an altitude of 2,600 feet and at the base of the often snow-topped Mauna Kea. As a non-profit hospital, North Hawaii Community Hospital serves more than 30,000 residents in North Hawaii, as well as the many visitors to the island.

North Hawaii Community Hospital opened in 1996. Our mission is to improve the health of the people of North Hawaii by improving access to care. In January 2014, North Hawaii Community Hospital became part of The Queen's Health Systems. Our focus is on the patient, the family

and the culture of healing the whole person. North Hawaii Community Hospital delivers excellent quality health care service within a total healing environment. North Hawaii Community Hospital's physical environment includes:

- Amply sized single patient rooms
- Natural lighting and garden views in all rooms
- Operable lanai doors in all rooms
- Skylights and windows in common areas
- Landscaped gardens
- Courtyards with water features
- Interior design with warm colors and art

North Hawaii Community Hospital offers a spectrum of high quality services, including emergency services, general surgical services, critical care, obstetrics, gastroenterology, orthopedic services, cardiology, diabetes counseling, home health care, holistic services and more. We also offer in-patient and out-patient laboratory, imaging, cardiopulmonary, rehabilitation, and dialysis services.

1.2.1 Hospital Community Benefit Team and Goals

North Hawaii Community Hospital will be focusing on "Access to Care" as it was selected by Queen's Health System as a system-wide priority.

1.2.2 Definition of Community + Map

The county serves as the unit of analysis for the Community Health Needs Assessment and the health needs in this assessment pertain to individuals living within this geographic boundary. The specific area served by North Hawaii Community Hospital is indicated in Figure 1.1.

2 Selected Priority Areas

In the 2012 study, the CHNA identified 20 areas of community health needs. The Queen's Health Systems recognizes the importance of these needs and has supported efforts to address many of them. One of the major themes presented in the 2015-2016 report is *access to care.* North Hawaii Community Hospital will be focusing on "Access to Care" as it was selected by Queen's Health System as a system-wide priority.

Hawaii County has significant unmet healthcare access needs due to provider shortages, limited oral health services and coverage, and inadequate coordination in mental health care. Residents also face substantial rates of poverty and challenges in transportation, further exacerbating access issues.

To promote and improve *access to care* for the people of Hawai'i Island, North Hawaii Community Hospital will focus on access through outreach, education, technology, and physician recruitment.

- Improve access to underserved populations by increasing the number of new patients and decreasing wait time for first appointments.
- Increase physician recruiting, specifically for primary care, OBGYN and general surgery.
- Shorten the length of time between diagnosis of cancer and initiation of treatment.
- Increase translation services to improve cultural competency and to strengthen care.

3 Evaluation of Progress since Prior CHNA

3.1 Impact since Prior CHNA

Priority Area	Strategy: Objectives	Activity	Outcome *(Metrics of Success)*
Exercise	**Community outreach/education** **Support for and creation of opportunities**	**Keiki** **Promote increasing physical activity** Served as catalyst for community exercise activities [buddy systems, exercise contracts, walking groups, etc.] Helped schools empower students with the knowledge, skills and attitudes that support and maintain healthy exercise behavior by providing educational materials. . Supported integration of school-based activity programs with family and community life by providing family oriented activities. Utilized community/school	Provided one or more community exercise promoting activities per year. Created and provided educational materials to multiple schools. Created and provided at least one family based interactive activity.

		organized sporting events as an opportunity for education **Adults/Seniors** **Promote increasing physical activity** Radio PSAs with varying focused messages Served as catalyst for community exercise activities. Participated in efforts to improve activity among the NHCH employee community.	Attended and provided educational materials at at least one keiki event. Aired radio spots focused on promoting exercise. Provided one or more community exercise promoting activities per year. Promoted and provided access to NHCH gym
Weight	**Community outreach/education** **Support for and Creation of opportunities**	**Keiki** **Educate and promote healthy weight** Educated keiki about healthy weight Supported community efforts to assess healthy weight indices among students and to align any intervention activities *(not done due to privacy)* Providers to educate patients about the effect of weight on chronic disease. **Adult / Senior** **Educate and promote healthy weight** Radio PSAs with varying focused messages Supported community efforts to assess healthy weight indices among target populations, and	Created and provide educational material relating to healthy weight at at least one school. Provided educational materials at at least one keiki event. Provided education material that communicates the effect of weight on chronic disease. Aired radio spots promoting exercise and health. Attended and provide educational materials at community classes.

		to align any intervention activities Participate in efforts to improve healthy BMI among the NHCH employee community. Providers to educate patients about the effect of weight on chronic disease.	 Employee nurse educated employees about healthy weight. Provided education materials that communicates the effect of weight on chronic disease
Nutrition	**Community outreach/education** **Support for and Creation of opportunities**	**Keiki** **Educate and promote healthy eating** Provided healthy cooking demonstrations. Supported schools to provide students with opportunities to engage in healthy eating Helped schools empower students with the knowledge, skills and attitudes that support and maintain healthy eating behavior by providing educational materials Supported integration of school-based activity programs with family and community life by providing family oriented activities. Promoted fruit and vegetable consumption. Medical and community-based providers provided opportunity to	 Developed and shared at least one cooking demonstration to keiki. Created and provided healthy eating ideas to at least one school. Created and provided educational materials to at least one school. Provided at least one family based interactive activity. Created and provided materials to at least one school/community reflecting the benefit of consuming fruits and vegetables. Provided education material that communicates the effect of weight on chronic disease.

		educate patients and families re: healthy nutrition through handouts and referral opportunities	
		Identification of and interventions with diabetics in the community who require support for healthy food purchases	Provider to educate patients who cannot afford fruits/vegetables with referral sources to acquire these items. (*did not complete due to limited resources and lack of community interest)*
		Adult/Senior **Educate and promote healthy eating**	
		Radio PSAs with varying focused messages.	Aired radio spot focused on eating healthy
		Promotion of breastfeeding	Provided educational materials to expectant and new mothers of the nutritional importance of breast feeding. Became Baby Friendly designated.
		Promotion of Community Supported Agriculture	Provide educational materials for farmers to hand out at the markets and to include in the CSA boxes distributed throughout the community. (*did not complete due to limited resources and lack of community interest)*
		Promote fruit and vegetable consumption.	Provided materials to at least one school/community activity reflecting the benefit of consuming fruits and vegetables.
		NHMG & community-based providers provide opportunity to educate patients & families re: healthy nutrition through handouts and referral opportunities.	Provided educational materials to communicate the effect of weight on chronic disease to patients.
		Create opportunities for education with partners'	

		community support activities. Identification of & interventions with diabetics in the community who require support for healthy food purchases. Participate in efforts to improve healthy eating among the NHCH employee community.	Provided educational flyer to be included in the CSA boxes distributed throughout the community by the Food Basket. Provider to educate patients who cannot afford fruits/vegetables with referrals to resources so they acquire these items. (*did not complete due to limited resources and lack of community interest)* NHCH Café provided healthy eating options to employees.

3.2 Community Feedback on Prior CHNA or Implementation Strategy

North Hawaii Community Hospital did not receive any written comments or feedback on the prior CHNA process however, North Hawaii Community Hospital has received positive feedback with increased attendance at community activities and demand for additional community outreach, particularly in the schools.

4 Methods

Two types of data were analyzed for this Community Health Needs Assessment: quantitative data (indicators) and qualitative data (interviews). Each type of data was analyzed using a unique methodology, and findings were organized by health or quality of life topic areas. These findings were then synthesized for a comprehensive overview of the health needs in Hawaii County.

4.1 Quantitative Data Sources and Analysis

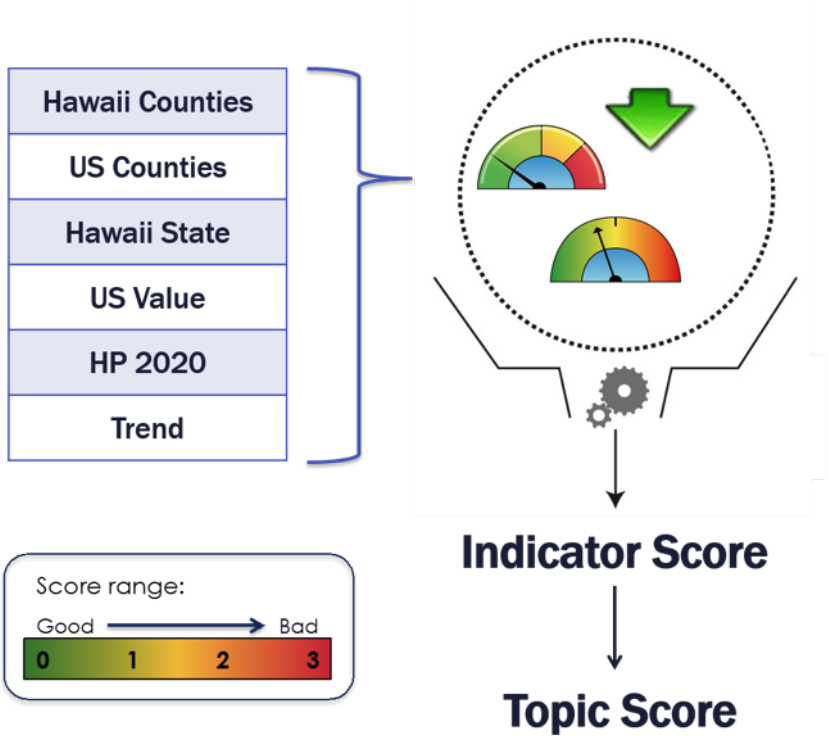
All quantitative data used for this needs assessment are secondary data, or data that have previously been collected. The main source for the secondary data is Hawaii Health Matters,[2] a publicly available data platform that is maintained by the Hawaii Department of Health, the Hawaii Health Data Warehouse, and Healthy Communities Institute. As of March 31, 2015, when the data were queried, there were 327 health and health-related indicators on the Hawaii Health Matters dashboard for which the analysis outlined below could be conducted. For each indicator, the online platform includes several ways (or comparisons) by which to assess Hawaii County's status, including comparing to other Hawaii counties, all U.S. counties, the Hawaii state value, the U.S. value, the trend over time, and Healthy People 2020 targets.

[2] http://www.hawaiihealthmatters.org

For this analysis, we have summarized the many types of comparisons with a secondary data score for each indicator. The indicator scores are then averaged for broader health topics. The score ranges from 0 to 3, with 0 meaning the best possible score and 3 the worst possible score, and summarizes how Hawaii County compares to the other counties in Hawaii and in the U.S., the state value and the U.S. value, Healthy People 2020 targets, and the trend over the four most recent time periods of measure.

Please see Appendix A for further details on the quantitative data scoring methodology.

Figure 4.1: Secondary Data Methods



4.1.1 Race/Ethnicity Disparities

Indicator data were included for race/ethnicity groups when available from the source. The race/ethnicity groups used in this report are defined by the data sources, which may differ in their approaches. For example, some sources present data for the Native Hawaiian group alone, while other sources include this group in the larger Native Hawaiian or Other Pacific Islander population.

The health needs disparity by race/ethnicity was quantified by calculating the Index of Disparity[3] for all indicators with at least two race/ethnic-specific values available. This index represents a standardized measure of how different each subpopulation value is compared to the overall population value. Indicators for which there is a higher Index of Disparity value are those where there is evidence of a large health disparity.

4.1.2 Preventable Hospitalization Rates

In addition to indicators available on Hawaii Health Matters, indicators of preventable hospitalization rates were provided by Hawaii Health Information Corporation (HHIC). These Prevention Quality Indicators (PQI),[4] defined by the Agency for Healthcare Research and Quality (AHRQ) to assess the quality of outpatient care, were included in secondary data scoring. Unadjusted rates of admission due to any mental health condition are also presented as an assessment of the relative utilization of services among subpopulations due to mental health conditions.

[3] Pearcy JN, Keppel KG. A summary measure of health disparity. *Public Health Reports*. 2002;117(3):273-280.
[4] For more about PQIs, see http://qualityindicators.ahrq.gov/Modules/pqi_resources.aspx

4.1.3 Shortage Area Maps

Access to care findings are supplemented with maps illustrating the following types of federally-designated shortage areas and medically underserved populations[5]:

- Primary care health professional shortage areas
- Mental health professional shortage areas and/or populations

4.1.4 External Data Reports

Finally, several health topic areas were supplemented with quantitative data collected from previously published reports. This additional content was not incorporated in secondary data scoring due to the limited number of comparisons possible, but is included in the narrative of this report for context.

4.2 Qualitative Data Collection and Analysis

The qualitative data used in this assessment consist of key informant interviews collected by Storyline Consulting. Key informants are individuals recognized for their knowledge of community health in one or more health areas, and were nominated and selected by the HAH Advisory Committee in September 2014. Fifteen key informants were interviewed for their knowledge about community health needs, barriers, strengths, and opportunities (including the needs for vulnerable and underserved populations as required by IRS regulations). In many cases, the vulnerable populations are defined by race/ethnic groups, and this assessment will place a special emphasis on these findings. Interview topics were not restricted to the health area for which a key informant was nominated.

Key Informants from:		
County of Hawaii, Dept. of Research & Development	Hui Mālama Ola Nā ʻŌiwi	Puna Community Medical Center
Department of Health	Ka'u Community Rural Health Association	UH-Hilo, Daniel K. Inouye College of Pharmacy
Department of Health, Office of Rural Health	North Hawaii Community Hospital	West Hawaii Community Health Center
Hamakua Health Center	North Hawaii Hospice	
Hilo Medical Center	North Hawaii Outcomes Project	

Excerpts from the interview transcripts were coded by relevant topic areas and other key terms using the qualitative analytic tool Dedoose.[6] The frequency with which a topic area was discussed in key informant interviews was one factor used to assess the relative urgency of that topic area's health and social needs.

[5] Criteria for medically underserved areas and populations can be found at: http://www.hrsa.gov/shortage/ Data included in this report were accessed June 9, 2015.

[6] Dedoose Version 6.0.24, web application for managing, analyzing, and presenting qualitative and mixed method research data (2015). Los Angeles, CA: SocioCultural Research Consultants, LLC (www.dedoose.com).

Please see Appendix A for a list of interview questions.

4.3 Prioritization

In the 2012 study, the CHNA identified 20 areas of community health needs. The Queen's Health Systems recognizes the importance of these needs and has supported efforts to address many of them. One of the major themes presented in the 2015-2016 report is *access to care* and this was selected for North Hawaii Community Hospital**.** Hawaii County has significant unmet healthcare access needs due to provider shortages, limited oral health services and coverage, and inadequate coordination in mental health care. Residents also face substantial rates of poverty and challenges in transportation, further exacerbating access issues.

To promote and improve *access to care* for the people of Hawai'i Island, North Hawaii Community Hospital will focus on access through outreach, education, technology, and physician recruitment.

4.4 Data Considerations

Several limitations of the data should be considered when reviewing the findings presented in this report. Although the topics by which data are organized cover a wide range of health and health-related areas, within each topic there is a varying scope and depth of quantitative data indicators and qualitative findings. In some topics there is a robust set of quantitative data indicators, but in others there may be a limited number of indicators for which data is collected, or limited subpopulations covered by the indicators. The breadth of qualitative data findings is dependent on who was nominated and selected to be a key informant, as well as the availability of selected key informants to be interviewed during the time period of qualitative data collection. Since the interviews were conducted, some policies may have changed and new programs may have been implemented. The Index of Disparity is also limited by data availability: for some indicators, there is no subpopulation data, and for others, there are only values for a select number of race/ethnic groups. For both quantitative and qualitative data, efforts were made to include as wide a range of secondary data indicators and key informant expertise areas as possible.

Finally, there are limitations for particular measures and topics that should be acknowledged. Measures of income and poverty, sourced from the U.S. Census American Community Survey, do not account for the higher cost of living in Hawaii and may underestimate the proportion of residents who are struggling financially. Additionally, many of the quantitative indicators included in the findings are collected by survey, and though methods are used to best represent the population at large, these measures are subject to instability—especially among smaller populations.

5 Demographics

The demographics of a community significantly impact its health profile. Different race/ethnic, age, and socioeconomic groups may have unique needs and require varied approaches to health improvement efforts. All estimates are sourced from the U.S. Census Bureau's American Community Survey unless otherwise indicated.

5.1 Population

In 2013, Hawaii County had a population of 190,821. As measured by the decennial Census,[7] its population density is lower than the U.S. average and is the lowest among counties in Hawaii. Between 2010 and 2013, Hawaii County's population grew more quickly than the national average, as shown in Table 5.1.

Table 5.1: Population Density and Change

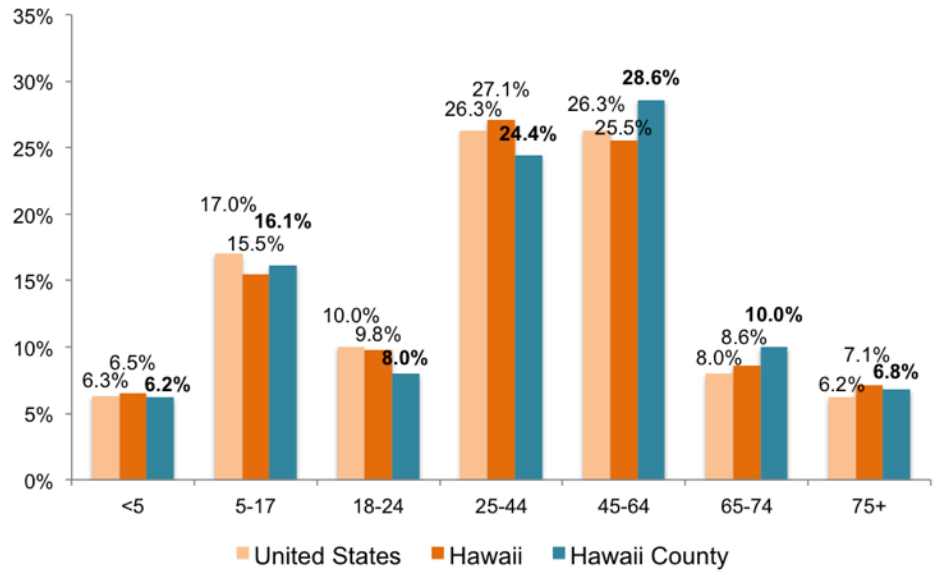
	U.S.	Hawaii	Hawaii County
Population, 2013	316,128,839	1,404,054	190,821
Pop. density, persons/sq mi, 2010*	87	212	46
Population change, 2010-2013	2.4%	3.2%	3.1%

*2010 U.S. Census

5.1.1 Age

Hawaii County's population is older on average than the rest of the state and the country, with a median age of 41.0 in 2013, compared to 38.1 and 37.5, respectively. As shown in Figure 5.1, children under 18 made up 22.3% of the county's population (compared to 22.0% in the state and 23.3% in the U.S.), and adults over 65 made up 16.8% of the population (compared to 15.7% in Hawaii and 14.2% in the U.S.).

Figure 5.1 Population by Age, 2013



5.1.2 Racial/Ethnic Diversity

The race/ethnicity breakdown of Hawaii County is significantly different from the rest of the country. In Figure 5.2, racial identity is displayed to the left of the line, while Hispanic/Latino ethnicity (of any race) is shown to the right. Over one in four residents identifies as two or more races, a proportion higher than both Hawaii and the nation as a whole.

[7] United States Census Bureau. (2010). *2010 Census Demographic Profiles.* Available from http://www.census.gov/2010census/data/

Figure 5.2: Population by Race/Ethnicity, 2013

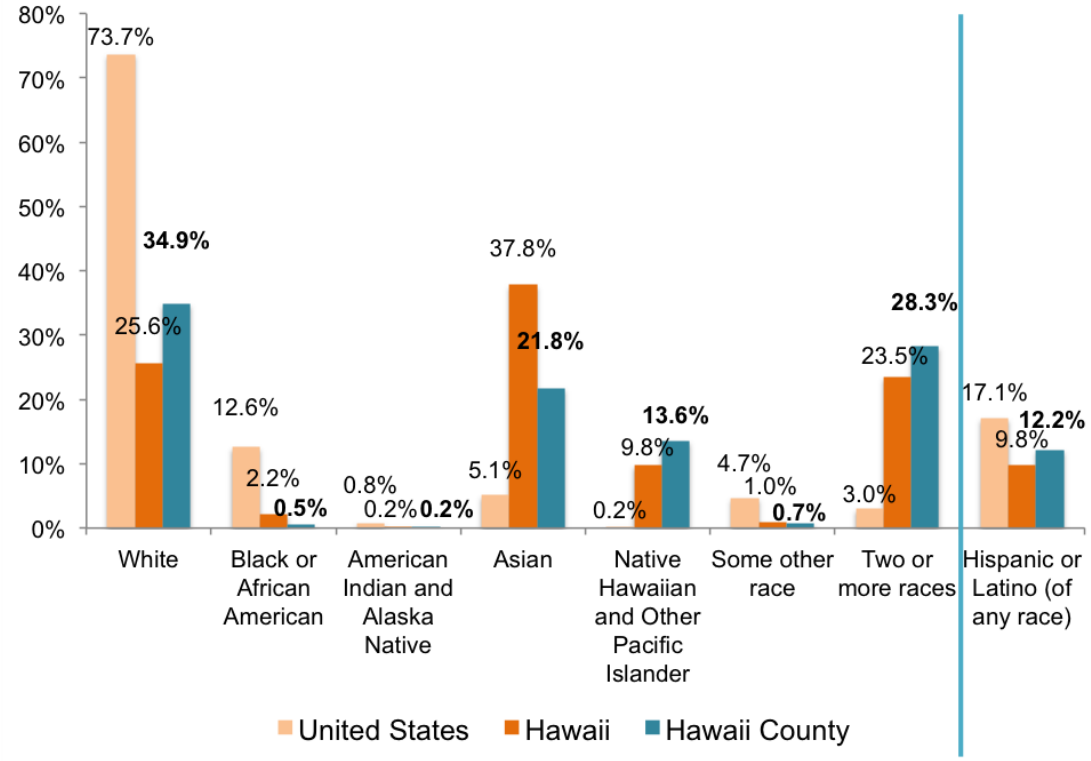
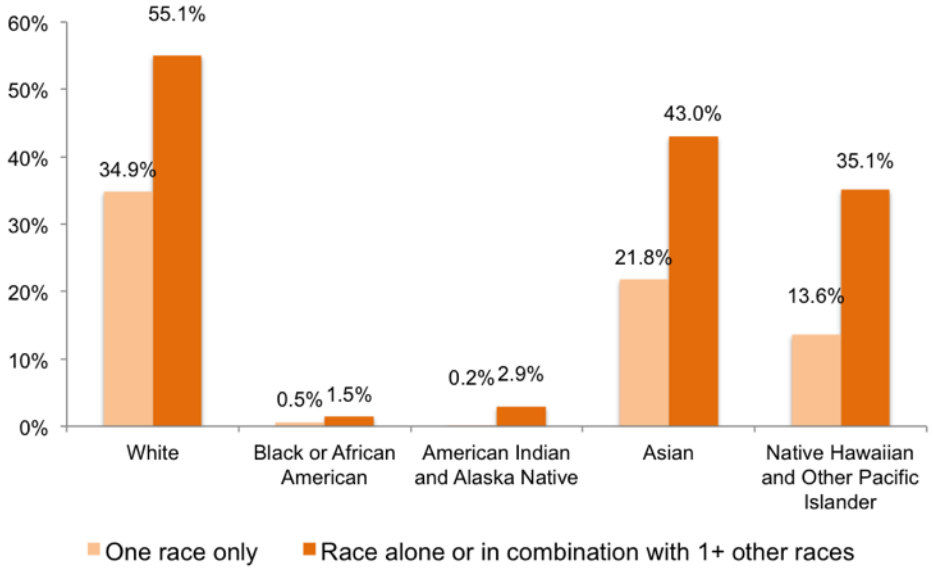


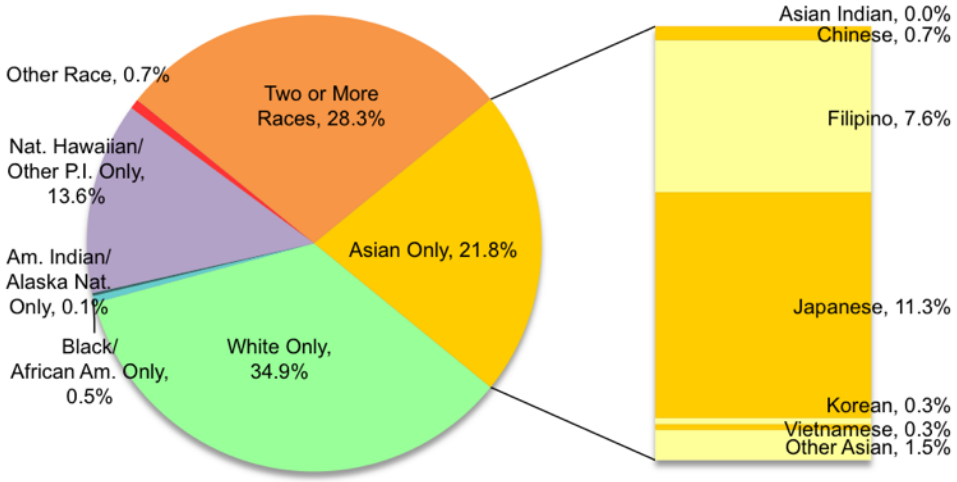
Figure 5.3: Population by One Race Alone or in Combination with Other Races in Hawaii County, 2013

A closer examination of the multiracial population in Figure 5.3, in addition to the single-race populations, sheds more light on the diversity of the county. Within Hawaii County, 35.1% of the population identified as any part Native Hawaiian or Pacific Islander, 43.0% as any part Asian, and 55.1% as any part White.



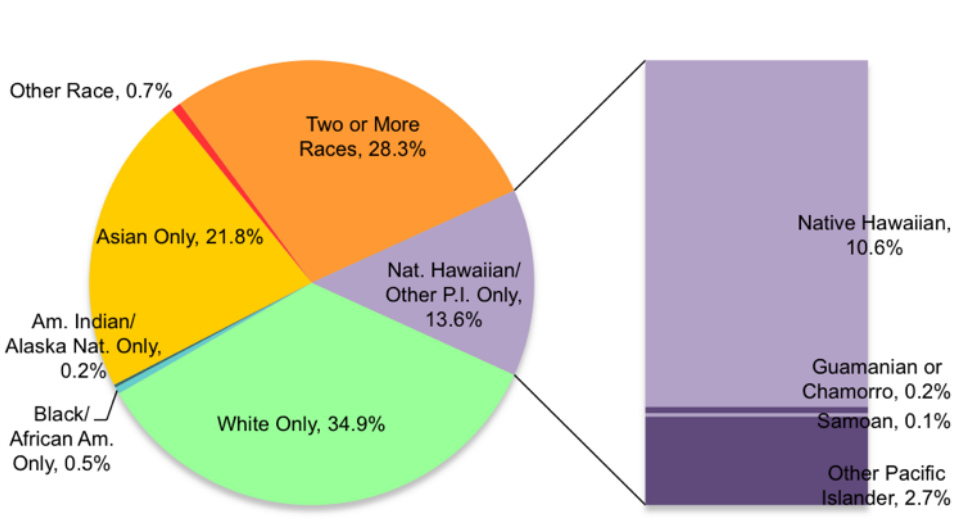
Of county residents identifying as one race only in 2013, 34.9% (the largest group) were White only, compared to 25.6% of the state and 73.7% of the nation. Similar to Hawaii overall, Black/African American and Other race/ethnic groups were smaller compared to the national average. While the Hispanic/Latino population was also smaller than the U.S. average, this group made up a larger share of the population in the county than in the state overall. The second-largest single race group in the county was Asian, of which the majority comprised Japanese (11.3%) and Filipino (7.6%) populations (Figure 5.4).

Figure 5.4: Population by Race in Hawaii County: Breakdown of Asian Population, 2013



Among the Native Hawaiian and Other Pacific Islander group, the majority identify as Native Hawaiian (Figure 5.5).

Figure 5.5: Population by Race in Hawaii County, 2013: Breakdown of Native Hawaiian and Other Pacific Islander Population, 2013



In 2009-2013, 10.9% of Hawaii County was foreign-born, compared to 17.9% of the state and 12.9% of the U.S. In addition, fewer county residents speak a foreign language compared to Hawaii and the U.S.: in 2009-2013, 18.7% of Hawaii County's population aged 5 and older spoke a language other than English at home, lower than Hawaii's 25.4% and the U.S.'s 20.7%.

5.2 Social and Economic Determinants of Health

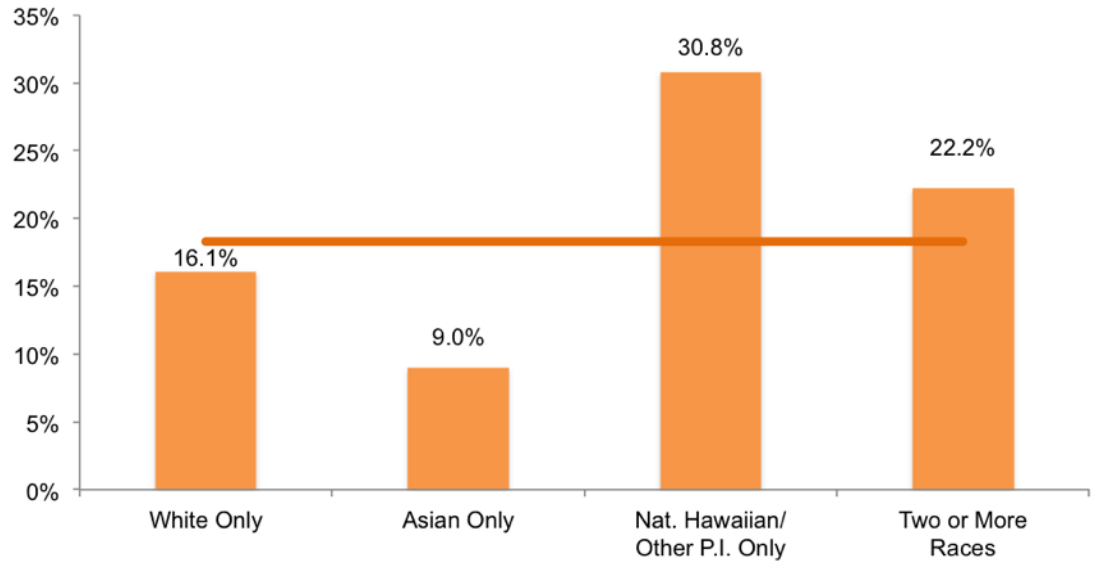
5.2.1 Income

The overall income in Hawaii County is low relative to both the state and the nation. The county's median household income in 2009-2013 was $51,250, compared to $67,402 in the state and $53,046 in the nation. At $24,635, per capita income was also lower in Hawaii County than the U.S. ($28,155) and Hawaii overall ($29,305).

5.2.2 Poverty

Hawaii County experiences a high rate of poverty overall, and Figure 5.6 shows that certain race/ethnic groups are even more acutely affected. 18.3% of Hawaii County's population lived below poverty level in 2009-2013, substantially higher than both the State of Hawaii (11.2%) and the U.S. average (15.4%). Even given these high rates of poverty, however, it is important to note that federal definitions of poverty are not geographically adjusted, so the data may not adequately reflect the proportion of Hawaii County residents who struggle to provide for themselves due to the high cost of living across the State of Hawaii. For instance, the 2013 median gross monthly rent was $905 in the U.S. but $1,414 in the State of Hawaii.

Figure 5.6: Persons Below Poverty Level by Race/Ethnicity, 2009-2013



Note: Populations making up <1% of the total population are not included in this graph

5.2.3 Education

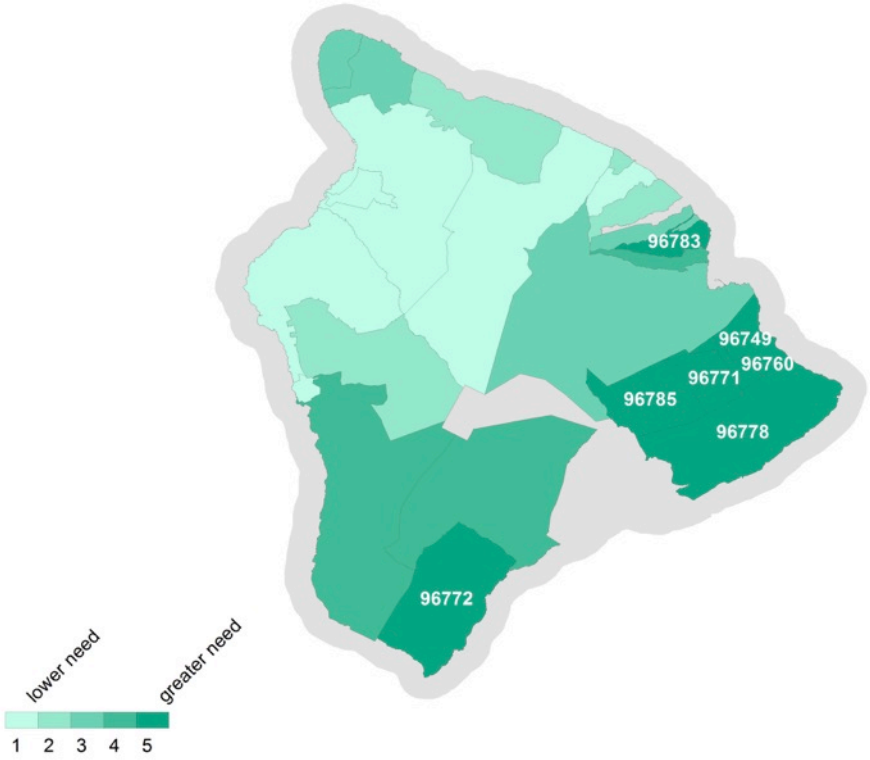
In 2009-2013, 91.0% of the county's residents aged 25 and older had at least a high school

degree, higher than the Hawaii average of 90.4% and the U.S. average of 86.0%. At the same time, however, a smaller proportion of Hawaii County residents aged 25 and older had at least a bachelor's degree (25.6%) than the state (30.1%) and the nation (28.8%).

5.2.4 SocioNeeds Index®

Healthy Communities Institute developed the SocioNeeds Index® to easily compare multiple socioeconomic factors across geographies. This index incorporates estimates for six different social and economic determinants of health that are associated with health outcomes. The data, which cover income, poverty, unemployment, occupation, educational attainment, and linguistic barriers, are then standardized and averaged to create one composite index value for every zip code in the United States with a population of at least 300. Zip codes have index values ranging from 0 to 100, where zip codes with higher values are estimated to have the highest socioeconomic need and are correlated with poor health outcomes, including preventable hospitalizations and premature death. Within Hawaii County, zip codes are ranked based on their index value to identify the relative level of need within the state, as illustrated by the map in Figure 5. lue to low popu

Figure 5.7: 2015 SocioNeeds Index® for Hawaii County



The zip codes with the highest levels of socioeconomic need are found in Puna, Kau, and North and South Hilo. These areas are more likely to experience poor health outcomes.

6 Findings

Together, qualitative and quantitative data provided a breadth of information on the health needs of Hawaii County residents. Figure 6.1 shows where there is strong evidence of need in qualitative data (in the upper half of the graph); in quantitative data (towards the right side of the graph); or in both qualitative and quantitative data (in the upper right quadrant).

Figure 6.1: Strength of Evidence of Need

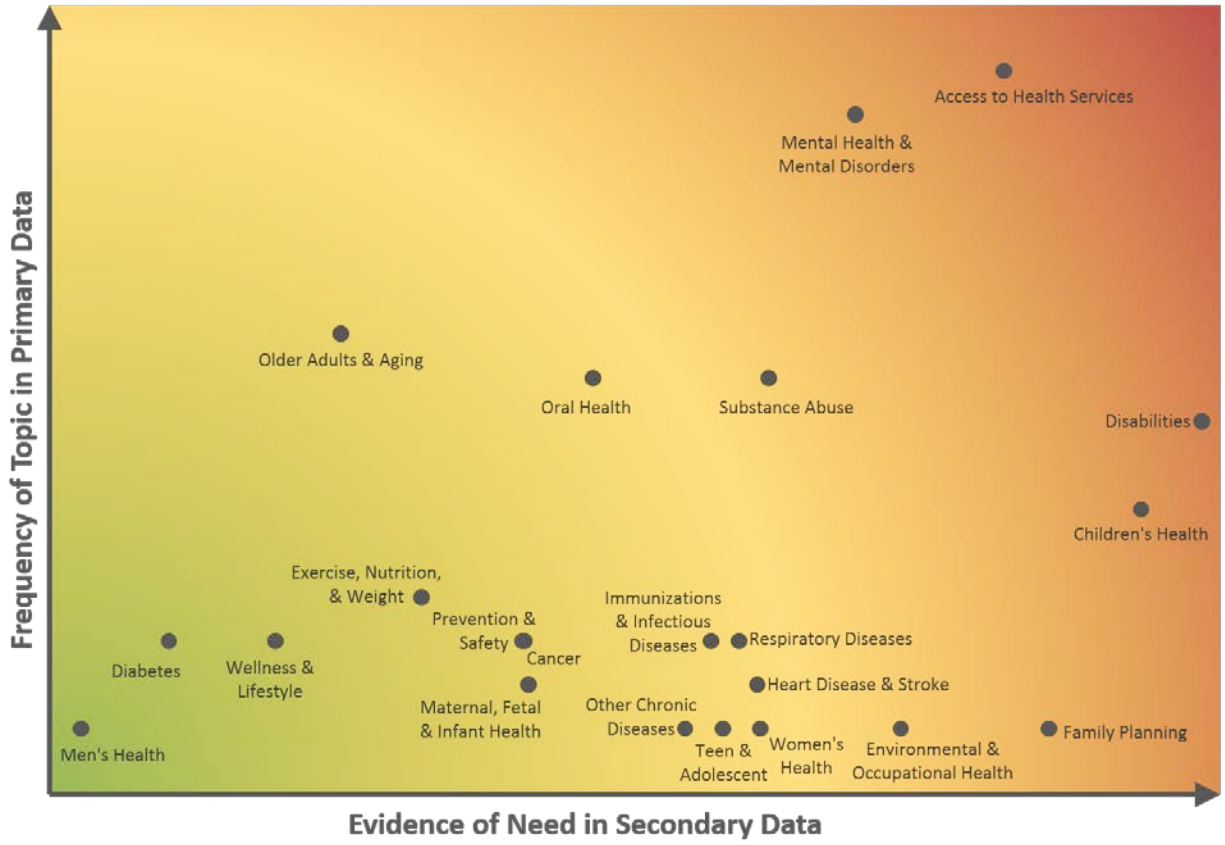
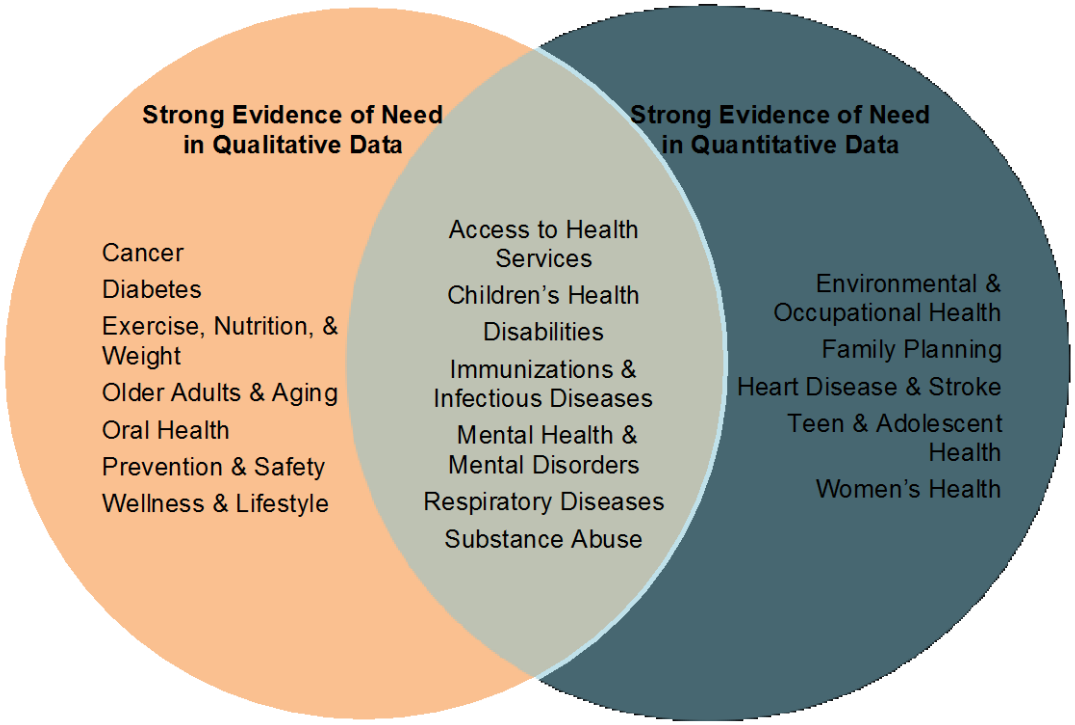


Figure 6.2: Topic Areas Demonstrating Strong Evidence of Need



In qualitative data, topic areas demonstrating "strong evidence of need" were those discussed in at least two key informant interviews. In quantitative data, topic areas with "strong evidence of need" were those with secondary data scores in the top half of the distribution.

Across both data types, there is high evidence of need in the areas of Access to Health Services and Mental Health & Mental Disorders. Although key informants gave Oral Health a high level of importance, the topic did not score high in quantitative data, which is likely due to the poor data availability in this area. Several indicators in the topics Environmental & Occupational Health and Family Planning contributed to a high quantitative score, but were not mentioned by key informants due to the specific nature of the health topics.

Each type of data contributes to the findings. Typically, there is either a strong set of secondary data indicators revealing the most dire health needs, or powerful qualitative data from key informant interviews providing great insight to the health needs of the community. On rare occasion, because quantitative data and qualitative data have their respective strengths and weaknesses, there can be both a strong set of secondary data indicators and qualitative data from interviews enhancing and corroborating the quantitative data. Findings are discussed in detail in the report by theme.

Below are tables that list the results of the secondary data scoring, for both Health and Quality of Life topic areas. Topics with higher scores indicate poor comparisons or greater need.

Table 6.1: Secondary Data Scoring for Health Topic Areas

Health Topic	Secondary Data Score
Disabilities	1.89
Children's Health	1.85
Family Planning	1.80
Access to Health Services	1.77
Environmental & Occupational Health	1.71
Mental Health & Mental Disorders	1.68
Substance Abuse	1.63
Women's Health	1.63
Heart Disease & Stroke	1.62
Respiratory Diseases	1.61
Teen & Adolescent Health	1.60
Immunizations & Infectious Diseases	1.60
Other Chronic Diseases	1.58
Oral Health	1.53
Disabilities	1.89
Children's Health	1.85
Maternal, Fetal & Infant Health	1.49
Prevention & Safety	1.48
Cancer	1.48
Other Conditions	1.48
Exercise, Nutrition, & Weight	1.42
Older Adults & Aging	1.37
Wellness & Lifestyle	1.34
Diabetes	1.27
Men's Health	1.22

Table 6.2: Secondary Data Scoring for Quality of Life Topic Areas

Quality of Life Topic	Secondary Data Score
Economy	2.11
Transportation	1.82
Education	1.79
Environment	1.62
Social Environment	1.62
Public Safety	1.62

Please see Appendix A for additional details on indicators within these Health and Quality of Life topic areas.

Below is a word cloud, created using the tool Wordle.[8] The word cloud illustrates the themes that were most prominent in the community input. Themes that were mentioned more frequently are displayed in larger font. Key informants discussed the areas of Access to Health Services, Mental Health and Mental Disorders, Transportation, Low-Income/Underserved, and Cultural Barriers most often.

Figure 6.3: Word Cloud of Themes Discussed by Key Informants

"People from Micronesian regions" is used throughout this report and intended to be a respectful reference that includes, but is not limited to, individuals from Micronesian states, Marshall Islands, Palau, Nauru, and other islands in the region. These individuals may have come to Hawaii through a Compact of Free Association agreement and may be provided healthcare benefits.

Note to the Reader

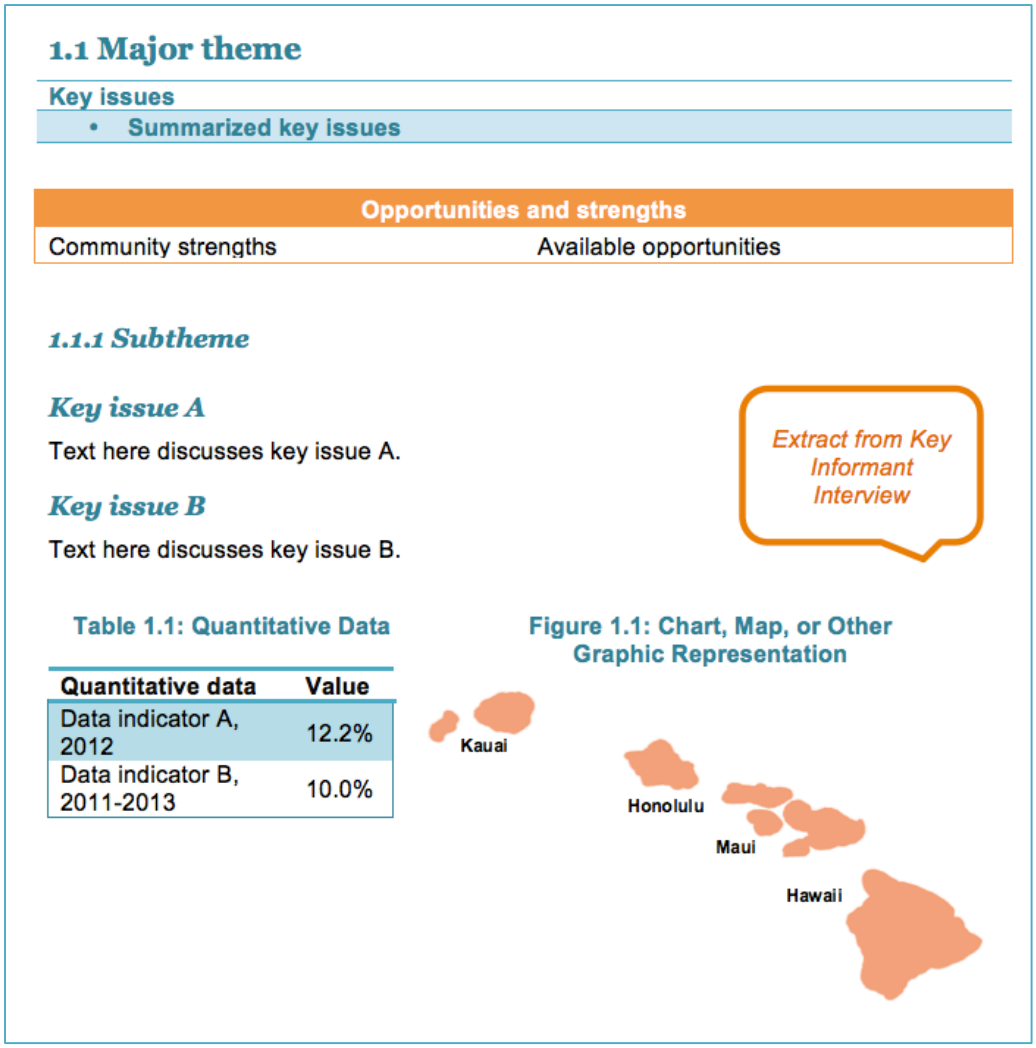
Readers may choose to study the entire report or alternatively focus on a specific major theme. Each section reviews the qualitative and quantitative data for each major theme and explores the key issues and underlying drivers within the theme. Due to the abundance of quantitative data, only the most pertinent and impactful pieces are discussed in the report. For a complete list of quantitative data included in the analysis and considered in the report, see Appendix A.

Navigation within the themes

At the beginning of each thematic section, key issues are summarized and opportunities and strengths of the community are highlighted. The reader can jump to subthemes, which correspond with the topic area categories, or to the key issues within each subtheme, as illustrated in Figure 6.4.

[8] Wordle [online word cloud applet]. (2014). Retrieved from http://www.wordle.net

Figure 6.4: Layout of Topic Area Summary



Figures, tables, and extracts from qualitative and quantitative data substantiate findings throughout. Within each subtheme, special emphasis is also placed on populations that are highly impacted, such as the low-income population or people with disabilities.

6.1 Access to Care

Key issues

- **High rates of poverty impede access to care**
- **Shortage of primary and specialty physicians**
- **Transportation is challenging, on- and off-island**
- **Lack of mental health integration**
- **Oral health services are extremely limited for low-income children and adults**

Opportunities and Strengths	
Need for more translation services	Improved cultural competency and translation services could strengthen care
Opportunity to integrate primary care and mental/behavioral health services	Preventing unnecessary and expensive travel to receive care off-island could save time and reduce anxiety

6.1.1 Access to Health Services

Health professional shortages

Hawaii County compares poorly to the state on most measures of provider availability. As seen in Table 6.3, there are fewer medical doctors, primary care providers, physician assistants, and nurse practitioners in the county than in Hawaii overall.

The statewide physician shortage is a public health emergency on Hawaii Island

Table 6.3: Providers per 100,000 Residents

Providers per 100,000 residents	Hawaii County	Hawaii
Practicing Medical Doctors, 2012	67.7	79.7
Primary Care Providers, 2011	74	85
Non-Physician Primary Care Providers, 2013	29	39
Practicing Physician Assistants, 2013	7.9	18.8
Practicing Nurse Practitioners, 2013	24.6	30.4

Many key informants discussed the problem of primary and specialty physician shortages in Hawaii County. Oncology was identified as an area of particular need by multiple informants, with one noting that only two oncologists serve the island's population. This leads to long wait times for patients' first appointments and delayed initiation of cancer treatments. A 2010 study also identified a shortage of obstetrics/gynecology physicians in Hawaii County.[9]

Other issues discussed by informants were the high cost of liability insurance, lack of opportunities for physicians-in-training to log clinical hours with appropriate oversight, and the difficulty of providers staying economically viable. One informant observed that limited access to care snowballs into other health, social environment, and economic issues. Specifically, delays

[9] Family Health Services Division, Department of Health, State of Hawaii. (2010). *State of Hawaii Maternal and Child Health Needs Assessment*. Retrieved from: https://mchdata.hrsa.gov/tvisreports/Documents/NeedsAssessments/2011/HI-NeedsAssessment.pdf

in care result in more expensive healthcare utilization because of the increased severity of potentially preventable medical issues.

The Health Resources and Services Administration (HRSA) has designated areas where there are 3,500 or more individuals per primary care physician as Primary Care Health Professional Shortage Areas (HPSAs).[10] By these criteria, the South Kohala, Kau, and Puna districts of Hawaii County emerge as Primary Care HPSAs.

In addition to provider shortages, a key informant discussed the shortage of healthcare data accessible to the public, which prohibits analysis of healthcare trends.

Figure 6.5: Health Professional Shortage Areas

Health insurance and preventive services

A higher share of adults and children in Hawaii County did not have health insurance compared to the state: 13.1% of adults in 2013 and 5.4% of children in 2012 were uninsured in the county, compared to 10.0% and 3.8% in the state, respectively. A key informant noted that coverage for medications is insufficient.

Among adults, only 83.7% had a usual source of care and only 65.7% had a routine checkup in 2013, both of which compare unfavorably to the state. The Healthy People 2020 target for percentage of adolescents who receive a physical is 75.6%, which Hawaii County failed to meet in both its young teen (44.6%) and teen (60.5%) populations in 2013. Only 38.4% of men ages 65 and older in Hawaii County utilized certain preventive services in 2013, below the Healthy People 2020 target of 44.6%. The services include a flu shot in the past year, a pneumonia vaccination, and either a colonoscopy/sigmoidoscopy in the past 10 years or a fecal occult blood test in the past year.

Cultural and linguistic barriers

Key informants called for improved cultural competency and more translation and interpretation services, especially in ambulatory care settings. Some cultures were observed to encourage reliance on traditional medicine before accessing Western health services.

Patient "noncompliance" is really a symptom of something we don't yet know about the patient's culture, values, etc.

[10] Health Resources and Services Administration Data Warehouse. (Accessed June 9, 2015). *HPSA Find*. Retrieved from http://datawarehouse.hrsa.gov/tools/analyzers/hpsafind.aspx

Highly impacted populations

Rural communities: A key informant noted that rural communities typically have lower wages, lower incomes, and other social factors that lead to poor health. Because access to care is especially difficult in remote areas, rural residents delay seeking care until their conditions worsen, leading to fewer healthy days overall. The informant also warned that the closing of rural hospitals would compound access issues and lead to healthcare deserts.

Race/ethnic groups: One key informant observed that the Hispanic/Latino population is rapidly growing, and many are seasonal workers on coffee and macadamia nut farms in Hawaii County. Linguistic barriers, low socioeconomic status, some concerns about deportation, and social stigma impede this population's access to health services.

While the uninsured adult population in Hawaii County is already large, the uninsured proportion is even higher among Filipino (17.8%) and Native Hawaiian (21.5%) adults.

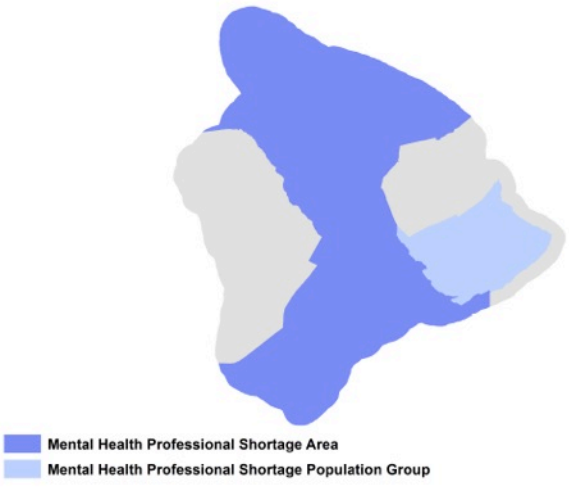
6.1.2 Mental Health

Access to services

Many key informants highlighted mental health as an area of need in Hawaii County. The resource shortage affects a continuum of care, from inpatient settings to case management and follow-up supports. One key informant observed that some individuals with mental health issues are in the emergency room anywhere from two to six days a week, often self-referred or brought in by a medic or police officer. Also discussed was the issue of Medicaid not paying for behavioral health issues.

There is inadequate access to high-quality, integrated mental health services for all ages

Figure 6.6: Mental Health Professional Shortage Areas



HRSA has designated areas where there are 30,000 or more individuals per psychiatrist as Mental Health Professional Shortage Areas (Mental Health HPSAs).[11] By these criteria, much of the Big Island is identified as a Mental Health HPSA, as seen in Figure 6.6. In addition, the population living in Puna is identified as facing substantial barriers in accessing care.

High hospitalization rates in mental health, as further discussed in Section 6.4.1, further corroborate insufficient access to mental health services.

Coordination of mental health services

Qualitative data show insufficient coordination of mental health care. One key informant noted that primary care physicians cannot adequately address mental health

[11] Health Resources and Services Administration Data Warehouse. (Accessed June 9, 2015). *HPSA Find*. Retrieved from http://datawarehouse.hrsa.gov/tools/analyzers/hpsafind.aspx

issues on their own; they are not equipped to stay current on methods of assessing and treating depression, anxiety, and substance abuse. Similarly, other key informants called for better integration of primary care and mental/behavioral health services.

Highly impacted populations

Race/ethnic groups: A key informant shared that there is a particular dearth of mental health providers who are savvy in addressing cultural issues, especially for the Native Hawaiian population.

6.1.3 Oral Health

Access to services

In 2011, there were 56 licensed dentists per 100,000 population in Hawaii County, fewer than both Honolulu County (86) and Maui County (61).[12] The Big Island ranked the worst of all counties in Hawaii on three indicators of adult oral health access; there is also substantial variation across the county, as seen in Table 6.4.[13]

Table 6.4: Adult Oral Health

Adult Oral Health, 2006, 2008, 2010	Adults with No Dental Visit	Adults with No Teeth Cleaning	Adults with Permanent Teeth Removed
State of Hawaii	26.1%	28.7%	39.9%
Hawaii County	32.7%	38.0%	43.6%
Hilo	30.9%	36.3%	42.3%
Puna	35.9%	43.8%	42.5%
Kau	43.3%	49.3%	51.8%
South Kona	37.9%	39.4%	47.8%
North Kona	27.0%	29.5%	42.1%
South Kohala	29.0%	36.8%	38.8%
North Kohala	26.7%	40.0%	37.5%
Hamakua	35.0%	35.7%	48.9%

A large share of the population does not have dental coverage, and even individuals who have coverage run into insurance limits on scope of services. Furthermore, a key informant observed a lack of understanding among residents of how oral health impacts overall health.

[12] North Hawaii Outcomes Project. (Accessed August 4, 2015). *Community Health Profile, Hawaii County.* Retrieved from http://nhop.org/wp-content/uploads/2012/06/R.Master06.06.12.pdf

[13] The Hawaii Department of Health. (Accessed August 4, 2015). *State of Hawaii Primary Care Needs Assessment Data Book, 2012.* Retrieved from http://health.hawaii.gov/about/files/2013/06/pcna2012databook.pdf

Highly impacted populations

Children, teens, and adolescents: Qualitative evidence demonstrated the difficulty of accessing oral health services for children in Hawaii County. The challenges are compounded for children in low-income households.

Oral health for many children raised in poverty is abysmal

Low-income population: Multiple key informants described the severe lack of oral health care available to low-income residents of Hawaii County. Many dentists reportedly do not accept Medicaid. This coverage gap, in combination with a large population of uninsured, low-income individuals, results in "terrible" oral health for many adults in the county, noted a key informant.

People with disabilities: One key informant noted that the Department of Health provides oral health services to people with disabilities and mental illness, but that these services are only available on Oahu and thus require off-island travel to utilize.

6.1.4 Economy

As mentioned in Section 5.2.2, living in Hawaii is costly compared to the rest of the U.S. Even when using federal guidelines, however, poverty is observed to be highly prevalent in Hawaii County and impacts all age groups, as seen in Table 6.5.

Table 6.5: People and Families Living Under Poverty Level

% Living Below Poverty Level, 2009- 2013	Hawaii County	Hawaii	U.S.
Families	13.5%	7.9%	11.3%
People (All Ages)	18.3%	11.2%	15.4%
Children (<18 Years)	27.0%	15.4%	21.6%
Adults Ages 65 and Over	9.6%	7.4%	9.4%

Poverty is one of several social and economic determinants of health, and correlates with limited access to care and poor health outcomes. In 2013, 12.6% of Hawaii County adults did not visit a doctor due to cost, compared to 8.6% across the state. Key informants described the many factors impacting the health of the low-income population. These individuals must choose between food, housing, and medication. In addition, many low-income individuals have lower levels of health literacy and are unable to self-advocate for healthcare access when needed.

The social determinants of health—transportation, education, economic opportunity—all affect access to healthcare

6.1.5 Transportation

Traveling to receive healthcare is a challenge, whether on- or off-island. Key informants identified the Big Island's size, geography, lack of public transportation, and limited road infrastructure as barriers to access. One key informant observed that traffic is a growing concern that impacts not only cars and buses, but also ambulances in cases of emergency. Many healthcare services require travel to Honolulu, necessitating time away from work.

Highly impacted populations

Low-income population: A key informant noted that people with lower incomes often find lower-cost housing in more rural areas, where there are fewer services and require longer travel to healthcare.

Rural communities: Another key informant shared that while transportation issues are widespread in Hawaii County, the challenges are particularly acute in West Hawaii, Kau, and Ocean View.

6.2 Chronic Diseases

Key issues

- **Limited access to healthy foods and exercise opportunities**
- **Poor physical activity behaviors among teens**
- **Poor diabetes management and education, and high hospitalization rates**
- **High prevalence of heart disease and insufficient early response rates to stroke and heart attack symptoms**
- **Other areas of need include arthritis and cancer**

Opportunities and Strengths
Increase awareness that Electronic Benefit Transfer (EBT) cards are accepted at farmers' markets

6.2.1 Exercise, Nutrition & Weight

Physical activity

In 2009-2013, Hawaii County had the smallest percentage of workers who walk to work (2.6%) in the state and failed to meet the Healthy People 2020 target of 3.1%. Hawaii County residents also have the most limited access to exercise opportunities in the state: only 73.4% of individuals lived reasonably close to a park or recreational facility in 2013.

Nutrition and access to healthy foods

Within the state, Hawaii County had highest percentage of households that did not have a car and had low access to a grocery store (2.6% in 2010). In addition, higher percentages of children, older adults, and low-income individuals in Hawaii County had low access to a grocery store compared to other U.S. counties. Hawaii County residents experienced the most food insecurity out of all counties in the state. In 2012, 26.9% of children and 15.0% of the general population experienced food insecurity at some point in the past year (compared to the state at 23.9% and 14.2%, respectively). A key informant observed that lack of education about nutritious food and limited access and transportation are concerns.

Nutrition is the underlying basis of other health problems

At 33.8% in 2013, Hawaii County had the highest percentage of overweight adults in the state.

Highly impacted populations

Children, teens, and adolescents: Physical activity behaviors need to be improved in youth in Hawaii County. Many teens in the county failed to meet physical activity guidelines (Table 6.6). The U.S. Department of Health and Human Services recommends at least 60 minutes of aerobic physical activity every day for children and adolescents. Daily physical education is extremely low (6.9%) among teens in Hawaii County and across the state compared to the U.S. and Healthy People 2020 targets.

In addition, many young teens reported spending more than the maximum two hours of screen time recommended by the American Academy of Pediatrics, an indicator associated with low physical activity levels. In 2013, 65.3% of young teens (grades 6-8) reported 2 hours or less of TV time, and 61.5% reported 2 hours or less of computer and video game time; both indicators failed to meet Healthy People 2020 targets. The percentage of teens (grades 9-12) reporting 2 hours or less of computer and video game time also failed to meet the Healthy People 2020 target (59.6% vs. 82.6%).

Table 6.6: Physical Activity Among Teens

Physical Activity indicators, 2013	Hawaii County	Hawaii	US	Healthy People 2020
Teens who attend daily physical education	6.9%	7.3%	29.4%	36.6%
Teens who meet aerobic physical activity guidelines	24.8%	22.0%	27.1%	31.6%

Low-income population: More Hawaii residents who were low-income had low access to a grocery store compared to other U.S. counties in 2010. A key informant commented that low-income people are often working multiple jobs and have longer commute times because they live in more rural areas, so fast foods that are quick and inexpensive are very appealing.

Hawaii Island leads the state in diabetes and chronic disease – a direct reflection of leading the state in poverty.

6.2.2 Diabetes and Kidney Disease

Diabetes is a cause for concern in Hawaii County; more residents in the county were prediabetic (13.1%) compared to the state (12.9%) in 2013. In 2011, Hawaii County had the highest rate in the state for hospitalization due to uncontrolled diabetes at 9.8 per 100,000 population, compared to the state's 6.8 hospitalizations per 100,000 population.

Several metrics for diabetes management failed to meet the Healthy People 2020 targets in 2013, including annual foot examination. Foot examination helps prevent diabetes-related amputation.

Kidney disease is more prevalent in Hawaii County than in the U.S. As of 2013, 2.9% of adults had been told they had kidney disease (not including kidney stones, bladder infection, or incontinence), compared to 2.5% of U.S. adults.

Highly impacted populations

Race/ethnic groups: The age-adjusted death rate due to diabetes was nearly five times higher in 2011-2013 among Native Hawaiians and other Pacific Islanders than the county overall (73.3 vs. 14.8 deaths per 100,000 population).

Table 6.7: Diabetes Management

Percentage of adults with diabetes in 2013 who:	Hawaii County	Hawaii	Healthy People 2020
Have received formal diabetes education	48.3%	46.9%	62.5%
Have their feet checked	69.3%	71.6%	74.8%

6.2.3 Heart Disease & Stroke

High blood pressure and high cholesterol

High blood pressure and high cholesterol are major modifiable risk factors for heart disease and stroke. As shown in Table 6.8, prevalence among adults in Hawaii County fail to meet Healthy People 2020 targets. Furthermore, only 75.0% of Hawaii County adults in 2013 had their blood cholesterol checked within the past five years, failing to meet the Healthy People 2020 target of 82.1%.

Table 6.8: Prevalence of High Blood Pressure and High Cholesterol

	Hawaii County	Hawaii	HP2020
High Blood Pressure Prevalence, 2013	29.1%	28.5%	26.9%
High Cholesterol Prevalence, 2013	36.9%	34.9%	13.5%

In 2011, 37.6 adults per 100,000 in Hawaii County were hospitalized for hypertension, which was higher than the rate for Hawaii overall, 26.7 hospitalizations per 100,000 population.

Cardiovascular disease

In 2013, Hawaii County had the highest rates in the state for heart attacks and coronary heart disease (Table 6.9).

Table 6.9: Prevalence of Cardiovascular Diseases

	Hawaii County	Hawaii
Heart Attacks, 2013	4.2%	3.2%
Coronary Heart Disease, 2013	3.9%	2.7%

Recognizing the early signs and symptoms of a heart attack or stroke and responding quickly is imperative to preventing disability and death. Quantitative data suggest that this is an area of need. Table 6.10 presents indicators gauging awareness of symptoms and importance of response among Hawaii County residents; these fall below state averages and do not meet Healthy People 2020 targets. In addition, Hawaii County had the highest death rates in the state for stroke (38.6 deaths per 100,000 population) and congestive heart failure (15.0 deaths per 100,000 population) in 2011-2013.

Table 6.10: Awareness of Symptoms and Response to Stroke or Heart Attack

Awareness of Symptoms, 2009	Hawaii County	Hawaii	U.S.	Healthy People 2020
Stroke				
Early symptoms	39.2%	41.8%	43.6%	59.3%
Early symptoms and calling 911	37.0%	37.5%	38.1%	56.4%
Heart attack				
Early symptoms	28.5%	30.4%	30.6%	43.6%
Early symptoms and calling 911	26.8%	27.7%	26.9%	40.9%

Among survivors of heart attack or stroke in Hawaii County, the rates of referral to any kind of outpatient rehabilitation— to help regain lost skills and independence—were relatively low when compared to the state and nation (Table 6.11).

Table 6.11: Outpatient Rehabilitation for Heart Attack of Stroke Survivors

Outpatient Rehabilitation Rates, 2013	Hawaii County	Hawaii	U.S.
Heart Attack	12.4%	19.1%	34.7%
Stroke	21.7%	23.5%	30.7%

Highly impacted populations

Race/ethnic groups: Native Hawaiians and Other Pacific Islanders have the highest death rates due to stroke and heart disease.

Table 6.12: Highly Impacted Populations, Heart Disease and Stroke Death Rates

Death rate*	Hawaii County	Asian	Nat. Hawaiian/ Pac. Islander.	White
Heart disease, 2013	79.8	85.8	249.2	62.2
Stroke, 2011-2013	38.6	42.6	103.7	32.8

*per 100,000 population

6.2.4 Arthritis

In 2013, Hawaii County had the highest percentages in the state for adults reporting various limitations due to arthritis (Table 6.12).

Table 6.12: Limitations due to Arthritis

Limitations due to Arthritis, 2013	Hawaii County	Hawaii
Work Limitations	38.3%	31.1%
Activity Limitations	40.3%	37.8%
Social Limitations	36.4%	35.3%

6.2.5 Cancer

Quantitative data indicate that oropharyngeal cancer, liver and bile duct cancer, and melanoma are areas of concern in the general population, as shown in Table 6.13, with rates for Kauai County higher than state or national rates. Among women, cervical cancer and preventive services (mammograms, Pap smears, and HPV vaccination) emerge as areas of need (further discussed in Section 6.5.3).

Table 6.13: Cancer Incidence and Death Rates

	Hawaii County	Hawaii	U.S.	HP2020
Cervical Cancer Incidence Rate, 2007-2011*	8.4	7.3	7.8	7.1
Cervical Cancer Death Rate, 2009-2013**	2.5	2.3	2.3	2.2
Oropharyngeal Cancer Death Rate, 2011-2013**	3.6	2.6	2.5	2.3
Liver and Bile Duct Cancer Incidence Rate, 2007-2011*	9.0	10.6	7.1	-
Melanoma Incidence Rate, 2007-2011*	25.3	25.0	19.7	-
Melanoma Death Rate, 2011-2013**	2.3	1.5	2.7	2.4

*cases per 100,000 population
**deaths per 100,000 population

The U.S. Preventive Services Task Force advises that adults ages 50 to 75 have a blood stool test every year, a sigmoidoscopy every five years with a blood stool test every three years, or a colonoscopy every 10 years. Colon cancer detection is low in Hawaii County: only 63.7% of adults ages 50 to 75 met the recommendations for colorectal cancer screening in 2013, falling below the state average (66.4%) and the Healthy People 2020 target (70.5%).

Highly impacted populations

Race/ethnic groups: The Native Hawaiian and Other Pacific Islander group experienced the highest mortality from breast and prostate cancer in 2011-2013. White residents of Hawaii County have the highest incidence rate for melanoma.

Table 6.14: Highly Impacted Populations, Cancer

	Hawaii County	Highly impacted groups
Melanoma Incidence Rate, 2007-2011*	25.3	White: 52.6
Breast Cancer Death Rate, 2011-2013**	15.9	Native Hawaiian/Other Pac. Islander: 56.6
Prostate Cancer Death Rate, 2011-2013**	15.2	Native Hawaiian/Other Pac. Islander: 36.1 White: 17.0

*cases per 100,000 population
**deaths per 100,000 population

6.3 Environmental Health & Respiratory Diseases

Key issues

- **Poor air quality**
- **High rates of ED visits due to asthma**

6.3.1 Environment

Active volcanoes in the county produce sulfur dioxide and negatively impact air quality, which in turn affects respiratory health. The American Lung Association gave Hawaii County an F grade for the number of days that exceeded US standards for particle pollution in 2010-2012. In addition, there were 254 days in 2013 of unsatisfactory air quality, defined as days in which the Air Quality Index (AQI) is over 100. The AQI is a scale from 0 to 500; a value of 300 or greater indicates emergency conditions. Furthermore, a key informant noted that lava flow threatens infrastructure and services.

In 2006-2010, 27.3% of households in Hawaii County experienced severe housing problems. These problems include overcrowding, high housing costs, lack of kitchen, or lack of plumbing facilities. Compared to the state, a larger share of adults in Hawaii County did not smoke but were exposed to secondhand smoke in a car or at home (15.7% vs. 13.8%).

6.3.2 Respiratory Diseases

Asthma

Asthma prevalence is high among both adults and children in Hawaii County. As of 2013, 10.1% of adults and 16.8% of children had asthma, compared to 9.4% and 12.8% in the state overall. Rates of emergency room visits for asthma are high across many segments of the Hawaii County population, suggesting poor management of the disease.

Table 6.15: ED Visits due to Asthma

	Hawaii County	Hawaii	Healthy People 2020 Target
ED Visits for Asthma Among Children <5 Years Old per 10,000 children, 2011	150.0	119.4	95.7
ED Visits for Asthma Among Population Ages 5-64, 2011	70.6	44.6	49.6
ED Visits for Asthma Among Population Ages 65 Years and Over, 2011	52.0	30.0	13.7

COPD

In 2013, 6.8% of adults aged 45 and older in Hawaii County had been told that they had chronic obstructive pulmonary disease (COPD), emphysema, or chronic bronchitis, which is slightly higher than both the state (6.3%) and the nation (6.5%) overall.

Highly impacted populations

Race/ethnic groups: Prevalence of asthma is even higher among adults of Native Hawaiian descent. In 2013, 17.5% of Native Hawaiian adults were told by a healthcare provider that they currently have asthma, compared to 10.1% of all adults in Hawaii County.

6.4 Mental Health & Health Risk Behaviors

Key Issues

- Limited access to mental health and substance abuse resources
- High rates of preventable injuries
- Heavy drinking and smoking
- Substance abuse among teens
- High rates of intimate partner violence

Opportunities and Strengths	
Need to address the connections between mental health, domestic violence, and substance abuse	High rates of injury could be reduced by addressing mental health and substance abuse needs
More substance abuse resources are needed	

6.4.1 Mental Health & Mental Disorders

As noted in Section 6.1.2, multiple key informants highlighted the lack of mental health resources as a major issue in Hawaii County. According to data provided by Hawaii Health Information Corporation, there were 756 hospitalizations due to mental health per 100,000 hospitalizations in Hawaii County in 2011; this was the highest rate in the state, suggesting a need for more preventive services in this area. Table 6.16 shows the percentage of total hospital admissions due to various mental illnesses and disorders in 2006-2010.

There are huge substance abuse and mental health challenges

Table 6.16: Hospitalizations due to Mental Health[14]

Percent of Hospital Admissions in 2006-2010 due to:	Hawaii County
Schizophrenia	2.7%
Mood Disorder	8.0%
Delirium/Dementia	7.1%
Anxiety	3.3%

In addition, Hawaii County has the highest rate of suicide in the state: at 19.6 deaths per 100,000 population in 2011-2013, the county compared very poorly to the state and national rates of 10.9 and 12.6 deaths per 100,000 population, respectively.

Highly impacted populations

Children, teens, and adolescents: Concerns for teens include bullying, cyber-bullying, and suicide. As seen in Table 6.17, Hawaii County performs poorly on these indicators when compared to national values or Healthy People 2020 targets.

[14] The Hawaii Department of Health. (Accessed August 4, 2015). *State of Hawaii Primary Care Needs Assessment Data Book, 2012.* Retrieved from http://health.hawaii.gov/about/files/2013/06/pcna2012databook.pdf

Table 6.17: Teen Mental Health

2013 Mental Health Indicators	Hawaii County	Hawaii	US	HP2020
Young teens (grades 6-8) who are bullied	50.6%	44.6%	-	-
Teens (grades 9-12) who are bullied	23.5%	18.7%	19.6%	17.9%
Teens who are cyber-bullied	15.7%	15.6%	14.8%	-
Teens who attempted suicide	3.9%	3.2%	2.7%	1.7%

Race/ethnic groups: The 2011-2013 suicide death rate among residents aged 15 and older was also much higher among residents of Native Hawaiian or Other Pacific Islander descent, as seen in Table 6.18. Suicide rates in the White population were also higher than the county average.

Table 6.18: Highly Impacted Populations, Suicide Death Rate

	Hawaii County	Asian	Nat. Hawaiian/ Other Pac. Islander	White
Suicide Death Rate per 100,000 population, 2011-2013	19.6	9.4	53.3	25.6

6.4.2 Substance Abuse

People who feel they don't have a future are more likely to engage in substance abuse, including alcohol and cigarettes.

Qualitative data emphasized the close ties between substance abuse and mental health issues in Hawaii County. A key informant linked the lack of accessible, high-quality mental health care to chemical dependency and problematic chemical use. Another key informant observed that poverty makes it difficult for people to make responsible choices, leading to substance abuse problems and mental health challenges.

In 2013, 17.6% of adults in the county reported smoking cigarettes, compared to 13.3% of adults in Hawaii. The percentages of adult smokers have attempted to or successfully quit smoking are lower than state averages, as seen in Table 6.19. A key informant observed that the rates of marijuana use are high.

Table 6.19: Adults who Attempted to or Successfully Quit Smoking

	Hawaii County	Hawaii	U.S.	HP2020 Target
Adults who Attempted to Quit Smoking, 2013	53.4%	61.6%	51.8%	80.0%
Adults who Recently Quit Smoking, 2013	8.2%	15.3%	6.3%	8.0%

However, the State of Hawaii recently took action to deter smoking by increasing the smoking age to 21 in June 2015, becoming the first U.S. state to do so.[15]

Excess alcohol consumption has major health impacts on Hawaii County adults. In 2013, 7.4% of adults reported drinking heavily, defined as having more than one drink per day on average for women and having more than two drinks per day on average for men. This compared unfavorably to the national average of 6.2%. Alcohol was involved in 47.0% of all motor vehicle crash deaths in 2008-2012, placing Hawaii County in the worst quartile of all U.S. counties. The death rate due to cirrhosis, a liver disease often linked to heavy alcohol use, was 10.8 deaths per 100,000 population in 2011-2013—also higher than the state (6.7) and the nation (10.2) overall. Indicators of alcohol use among pregnant women show that this is an area for improvement (Section 6.5.1).

The rate of deaths due to drug poisoning, which is often linked to prescription drugs, is higher in Hawaii County than any other county in the state. In 2004-2010, there were 12.1 deaths per 100,000 population in the county, compared to 9.3 in the state overall.

Access to treatment

In 2006-2010, 11.4% of hospital admissions in Hawaii County were due to a substance-related disorder, comparing unfavorably to Hawaii's average of 8.9%.[16] This suggests a need for more resources to address substance abuse issues before they become acute. Key informants noted the lack of treatment resources on the island, including no detoxification services at all.

Access to and availability of providers for substance abuse services is abysmal

Highly impacted populations

Children, Teens, and Adolescents: A key informant observed that youth in Hawaii County are experimenting with using alcohol and smoking, especially vapor cigarettes. The quantitative data corroborate high rates of substance use among teens when compared to the state and/or nation.

Table 6.20: Substance Abuse among Teens

	Hawaii County	Hawaii	U.S.	HP 2020 Target
Teens Who Never Used Illicit Drugs, 2013	50.1%	56.4%	50.1%	58.6%
Teens who Use Marijuana, 2013	23.6%	18.9%	23.4%	6.0%
Young Teens who Use Marijuana, 2013	14.6%	7.5%	-	6.0%

[15] Skinner, C. (2015, June 20). Hawaii becomes first U.S. state to raise smoking age to 21. *Reuters.* Retrieved from: http://www.reuters.com/article/2015/06/20/us-usa-hawaii-tobacco-idUSKBN0P006V20150620

[16] The Hawaii Department of Health. (Accessed August 4, 2015). *State of Hawaii Primary Care Needs Assessment Data Book, 2012.* Retrieved from http://health.hawaii.gov/about/files/2013/06/pcna2012databook.pdf

	Hawaii County	Hawaii	U.S.	HP 2020 Target
Illegal Drugs on School Property, 2013	31.6%	31.2%	22.1%	20.4%
Young Teens who Smoke Cigarettes, 2013	7.7%	5.2%	-	-
Teens who Use Alcohol, 2013	31.7%	25.2%	34.9%	-
Teens who have Used Methamphetamines, 2013	4.8%	4.3%	10.6%	-
Binge Drinking Among Teen Girls, 2013	14.5%	12.9%	19.6%	8.6%
Binge Drinking Among Teen Boys, 2013	11.4%	10.6%	22.0%	8.6%

Race/ethnic groups: Substance use disproportionately impacts Hawaii County residents of Native Hawaiian descent.

Table 6.21: Highly Impacted Populations, Drug-Induced Deaths

	Hawaii County	Highly Impacted Groups
Adults who Smoke Cigarettes, 2013	17.6%	Native Hawaiian: 36.6%
Heavy Drinking, 2013	7.4%	Native Hawaiian: 13.3%
Drug-Induced Deaths, 2011-2013	10.7 deaths per 100,000 population	Nat. Hawaiian or Other Pac. Islander: 20.5% White: 18.7%
Teens who have Used Methamphetamines, 2013	4.8%	Native Hawaiian: 5.7%

6.4.3 Wellness & Lifestyle

In 2013, a smaller proportion of adults in Hawaii County reported having good health (85.0%) than in the state overall (86.2%). In addition, only 62.1% of adults in the county reported that they got sufficient sleep—defined as seven or more hours of sleep on average—compared to 69.3% in the U.S. As a result of insufficient sleep, these residents may be at higher risk of chronic disease and depression. Many young teens in Hawaii County watch more than the recommended daily amount of TV compared to the state, which is associated with physical inactivity and health problems like obesity and irregular sleep patterns.

6.4.4 Prevention & Safety

Many accidental deaths could be averted through behavioral change or improved safety education in Hawaii County. The injury death rate, 62.4 deaths per 100,000 population in 2011-2013, was the highest of any county in the state. The rate of hospitalizations due to unintentional injuries (398 per 100,000 population in 2009) was also the highest in the state, as

was the 2007-2011 rate of emergency department visits for nonfatal injuries due to assault (450 per 100,000 population).

There is a lack of first responders; public safety is very limited

The 2009-2013 drowning death rate in Hawaii County was more than double the state rate, at 4.4 deaths vs. 2.0 deaths per 100,000 population. A key informant observed that spinal injuries are increasing due to cliff jumping.

Between 2011-2013, there were 27.1 deaths per 100,000 adults ages 35-54 due to poisoning, higher than the state rate of 20.6.

Motor vehicle and pedestrian safety

The rate of motor vehicle collision deaths is much higher in Hawaii County than the rest of the state: in 2010-2012, there were 16.6 deaths per 100,000 population in the county, compared to 8.6 in Hawaii overall. The rate of hospitalizations due to motor vehicle collisions was also higher in the county.

In 2007-2011, there were 934 nonfatal injuries due to motor vehicle collisions per 100,000 Hawaii County residents; this was more than double the state rate of 433 injuries per 100,000 population. The rate of pedestrians suffering nonfatal injuries in the same time period (45.5 per 100,000 population) was also higher than the state average (37.3) and much higher than the national average (24.3).

There are more head injuries that result from high-velocity crashes: people text while driving and don't decrease speed prior to crashing

A key informant attributed the high rates of motor vehicle injuries and deaths to limited mental health and substance abuse services on the island.

Sexual and physical abuse

In 2013, 1.5% of adults reported that someone exposed them to unwanted sexual situations that did not involve physical touching within the past year, the highest percentage of any county in Hawaii. Indicators of intimate partner violence show that both sexual and physical violence are issues in Hawaii County. In 2013, 11.5% of adults in the county reported experiencing physical violence at the hands of a current or former intimate partner (vs. 9.5% in the state), while 4.5% reported experiencing sexual violence (vs. 3.6% in the state).

Highly impacted populations

Race/ethnic groups: Large disparities by race/ethnicity are evident for many injury-related indicators. The rate of mortality due to injury is highest among the Native Hawaiian or Other Pacific Islanders group.

Table 6.22: Highly Impacted Populations, Prevention and Safety

Death Rates per 100,000 population	Hawaii County	Highly Impacted Groups
Drowning Death Rate, 2009-2013	4.4	Native Hawaiian or Other Pacific Islander: 15.3 Asian: 5.1
Injury Death Rate, 2011-2013	62.4	Native Alaskan/American Indian: 171.7 Native Hawaiian or Other Pacific Islander: 170.1 White: 73.6
Motor Vehicle Collision Death Rate, 2010-2012	16.6	Native Hawaiian or Other Pacific Islander: 43.9 Asian: 19.6 White: 17.0
Poisoning Death Rate, 2011-2013	12.3	Native Hawaiian or Other Pacific Islander: 22.5 White: 21.7
Unintentional Injury Death Rate, 2011-2013	34.3	Native Hawaiian or Other Pacific Islander: 88.9 White: 37.7
Firearm-Related Death Rate, 2011-2013	5.7	Native Hawaiian or Other Pacific Islander: 16.5 White: 8.2

6.4.5 Immunizations & Infectious Diseases

In Hawaii County, a number of vaccination rates fall short of state and national comparisons, as seen in Table 6.23:

Table 6.23: Vaccination Rates among Adults

Vaccination Rates, 2013	Hawaii County	Hawaii	U.S.
Influenza Vaccination Rate Ages 18-64	33.0%	40.3%	33.1%
Influenza Vaccination Rate Ages 65+	62.4%	69.9%	62.8%
HPV Vaccination	7.3%	11.9%	10.6%

HIV/AIDS

Among adults ages 18-44 in Hawaii County, 42.0% had ever been tested for HIV as of 2013, which compared unfavorably to the national average of 50.0% and failed to meet the Healthy People 2020 target of 73.6%.

6.5 Women's, Infant, & Reproductive Health

Key issues

- Poor birth outcomes including preterm births and infant deaths
- Substance use among pregnant women
- High rates of pregnancy among Native Hawaiian and Pacific Islander teens
- High rates of cervical cancer incidence and death

6.5.1 Maternal, Fetal, & Infant Health

Prenatal care & poor birth outcomes

In 2013, 30.0% of mothers received late or no prenatal care in Hawaii County – over twice the state value (14.1%), and failed to meet the Healthy People 2020 Target (22.1%).

32.8% of Hawaii County births in 2013 were delivered by Cesarean section, which was higher than Hawaii (25.6%) and the U.S. (26.9%). At 15.8%, Hawaii County had the highest percentage of Cesarean section births to low-risk mothers with no prior Cesarean section in the state ("low risk" is defined as a full-term singleton pregnancy with vertex presentation). Recovery from a Cesarean section takes longer than a vaginal birth, and also carries a higher risk of complications.

Hawaii County had the highest percentages in the state for preterm births (less than 37 weeks of gestation) and very early preterm births (less than 32 weeks of gestation).

Table 6.24: Preterm Births

Preterm Births, 2011-2013	Hawaii County	Hawaii
Preterm Births	10.4%	10.1%
Very Early Preterm Births	2.5%	2.3%

The rates of death due to birth defects and sudden unexpected infant deaths were higher in the county than the state, and failed to meet Healthy People 2020 targets.

Table 6.25: Infant Deaths

Infant deaths due to:	Hawaii County	Hawaii	HP2020
Sudden Infant Death Syndrome (SIDS), 2007-2011*	0.6	0.2	0.5
Sudden Unexpected Infant Deaths, 2006-2008*	1.1	0.9	0.8
All Birth Defects, 2009-2013*	1.2	0.7	1.3

*deaths per 1,000 live births

In 2011, Hawaii County had the lowest percentage in the state for breastfed infants who were still receiving breast milk eight weeks after birth (74.7%).

Substance abuse

Smoking and drinking during pregnancy are areas of concern for Hawaii County. A high percentage of pregnant mothers (7.0%) smoked compared to Hawaii overall (4.3%) in 2013. In

2011, a greater percentage of women in Hawaii County (28.1%) reported binge drinking during the three months prior to pregnancy than in the state overall (24.0%).

Highly impacted populations

Race/ethnic groups: Indicators of maternal smoking and preterm births show Pacific Islanders and Native Hawaiians are faring the most poorly.

Table 6.26: Highly Impacted Populations, Maternal Smoking and Early Preterm Births

	Hawaii County	Highly Impacted Groups
Mothers who Smoked During Pregnancy, 2013	7.0%	Native Hawaiian: 12.0% Native Alaskan/American Indian: 10.3%
Early Preterm Births, 2011-2013*	0.8%	Other Pacific Islander: 2.2%

*32-33 weeks of gestation

6.5.2 Family Planning and Teen Sexual Health

Delayed sexual initiation among teen boys and girls, as measured by abstinence from sex, fails to meet Healthy People 2020 targets. In 2013, 60.0% of teenage girls and 58.8% of teenage boys reported abstinence compared to the respective Healthy People 2020 targets of 80.2% and 79.2%. In addition, condom usage is lower among teen girls in Hawaii County than nationwide. Among adolescent females in public school grades 9-12 who had sex in the past month, only 41.1% used a condom, compared to 53.1% nationally; this percentage also fails to meet the Healthy People 2020 target of 55.6%. At 31.0 births per 1,000 women aged 15-19 years, Hawaii County had the highest teen birth rate out of all counties in the state in 2013.

Table 6.27: Births to Teens and Mothers without High School Diplomas

	Hawaii County	Hawaii
Teen Birth Rate, 2013*	31.0	25.0
Infants Born to Mothers with <12 Years Education, 2013	12.7%	6.6%

*births per 1,000 women ages 15-19

The percentage of intended pregnancies, 52.8% in 2011, fell short of the Healthy People 2020 target of 56.0%.

Highly impacted populations

Race/ethnic groups: Births to teen mothers of Native Hawaiian and Other Pacific Islander descent occur at five times the average county rate, as shown in Table 6.28. The percentage of births to Pacific Islander mothers with fewer than 12 years of education was over double the Hawaii County average of 7.6%.

Table 6.28: Highly Impacted Populations, Births to Teens and Mothers without High School Diplomas

	Hawaii County	Highly Impacted Groups
Teen Birth Rate, 2013*	31.0	Native Hawaiian/Pacific Islander: 150.1 Asian: 31.5
Infants Born to Mothers with <12 Years Education, 2013	12.7%	Other Pacific Islander: 31.0% Other: 22.7% Native Hawaiian: 14.3% Native Alaskan/American Indian: 13.0%

*births per 1,000 women ages 15-19

6.5.3 Women's Health

Preventive Services

In 2013, the percentage of women ages 40 and over who received a mammogram in the past two years (77.9%) fell below the state average (80.4%). At 81.0%, the percentage of women aged 18 years and older who had a Pap test in the past three years failed to meet the Healthy People 2020 target (93.0%) in 2013. Hawaii County had the lowest percentage (7.3%) in the state for adults aged 18 to 49 years who have received at least one dose of the human papillomavirus (HPV) vaccine in 2013.

Cancer

Compared to both the state and nation, cervical cancer incidence and death rates are high in Hawaii County. In 2007-2011, the incidence rate was 8.4 cases per 100,000 women, and there were 2.5 deaths per 100,000 women in 2009-2013. Both incidence and death rates failed to meet their respective Healthy People 2020 targets of 7.1 cases per 100,000 women and 2.2 deaths per 100,000 women.

Highly impacted populations

Race/ethnic groups: In 2011-2013, there were 15.9 deaths per 100,000 females due to breast cancer in Hawaii County overall. The rate was highest among Native Hawaiian and Pacific Islander women, at 56.6 deaths per 100,000 females.

7 A Closer Look at Highly Impacted Populations

Several subpopulations emerged from the qualitative and quantitative data for their disparities in access to care, risk factors, and health outcomes. This section focuses on these subpopulations and their unique needs.

7.1 Children, Teens, & Adolescents

Key issues

- **Low access to care and poor oral health**
- **Low access to healthy foods and poor physical activity behaviors**
- **High burden of asthma**
- **Teen mental health and substance use**
- **High rates of teen birth and low condom use among teen girls**

Opportunities and strengths
Dental base at the WIC site in Kona does assessments for children

Hawaii County experiences higher mortality rates among its children and adolescent populations than the state, at 13.9 deaths per 100,000 children ages 5-9 in 2009-2013 (vs. 9.8), 19.5 deaths per 100,000 adolescents ages 10-14 in 2009-2013 (vs. 13.5), and 72.5 per 100,000 teens ages 15-19 in 2011-2013 (vs. 39.8). In addition, multiple key informants observed that the social environment is insufficient: Hawaii County lacks a vibrant community and educational opportunities for children, and needs integrated, stimulating childcare and after-school programs.

Hawaii Island doesn't have a vibrant community or education for our children

7.1.1 Access to Care

As discussed in Section 6.1, health insurance coverage is low among children under 18 and few teens and young teens receive a routine physical, failing to meet the Healthy People 2020 target. A key informant remarked that the lack of healthcare among children may be a manifestation of a combination of remote location, no transportation, and low-income status.

7.1.2 Oral Health

Studies show that children on Hawaii Island experience twice as much tooth decay than the national average, cited a key informant. Oral health is especially challenging for children raised in poverty.

7.1.3 Disabilities

A key informant described the lack of assessments available for children with learning challenges and the belief that children with disabilities cannot learn or improve as challenges for this population.

7.1.4 Nutrition & Physical Activity

Children in Hawaii County have limited access to grocery stores and experienced high rates of food insecurity compared to the state as discussed in Section 6.2.1. Qualitative data corroborate this: according to a key informant, children have inadequate access to food and nutrition and must arrive to school early to eat breakfast. In addition, teenagers failed to meet physical activity

guidelines, and also had excessive screen time.

7.1.5 Asthma

Asthma prevalence among children is higher in Hawaii County compared to the state, and high rates of emergency room visits for asthma among children under 5 years of age (as shown in Section 6.3.2) indicate poor management of the condition.

7.1.6 Mental Health & Substance Abuse

As seen in Section 6.4.1, cyber-bullying, bullying, and attempted suicide are concerns for teens in Hawaii County. Use of alcohol, tobacco, and illicit drugs among Hawaii County adolescents is also an area for improvement, as shown in Section 6.4.2.

7.1.7 Prevention and Safety

Usage of child safety seats in cars is low in the county compared to the state, and the proportion of teens using sunscreen in Hawaii County fails to meet the Healthy People 2020 target.

7.1.8 Teen Pregnancy and Sexual Health

Delayed sexual initiation, as measured through abstinence from sex among teen boys and girls, compares unfavorably to the Healthy People 2020 target. In addition, condom use among teen girls is low compared to the national average, and Hawaii County has the highest teen birth rate compared to other Hawaii counties (Section 6.5.2).

7.2 Older Adults

Key Issues
• Lack of care services, infrastructure, and support systems • Low utilization of preventive services among older men and women • High percentages of seniors living alone or in poverty

Opportunities and Strengths
Need long-term beds, home health care, and community-based services

7.2.1 Access to Care

According to a key informant, the elderly population in Hawaii County is growing and struggles with transportation and thus accessing care. Another key informant observed that lack of access to medical care results in people becoming so ill that they become hospice eligible without ever having received appropriate treatment.

Multiple key informants expressed concern over the lack of long-term care facilities. The lack of long-term beds causes a backup in acute care; acute beds are filled with long-term patients, and acute patients are held in the ER until acute beds become available. Moreover, another key informant observed that seniors who live alone without a significant other and have limited financial resources are not Medicaid eligible, but cannot afford private long-term care.

The tsunami of need among the elderly is growing, and no one is planning for it

Another key informant commented that services for the elderly are inadequate – there is no skilled nursing facility, and no home and community-based services. Another key informant expressed concern over the lack of infrastructure and support systems that allow the elderly to age in place, such as home care services, home telehealth, assisted living options, and sidewalks in rural areas.

Quantitative data suggest that preventive services are accessed insufficiently. In 2013, only 38.4% of men and 42.9% of women ages 65 and over reported receiving preventive services (a flu shot in the past year, a pneumonia vaccination ever, and either a colonoscopy/ sigmoidoscopy in the past 10 years or a fecal occult blood test in the past year; and for women, a mammogram in the past 2 years as well).

7.2.2 Chronic Diseases

The Medicare population in Hawaii County experiences high rates of hyperlipidemia (47.7% in 2012) and asthma (5.3% in 2012). Hawaii County had the highest rate for emergency department visits due to asthma in the state (Table 7.1).

Table 7.1: ED Visits and Deaths due to Asthma Among Seniors

	Hawaii County	Hawaii	HP2020
ED Visits for Asthma, 2011*	52.0	30.0	13.7
Asthma Death Rate, 2004-2013**	38.9	36.7	21.5

*visits per 10,000 population 65+
**deaths per 1,000,000 population 65+

7.2.3 Safety

A key informant observed many comorbidities with falls; fall patients usually do not die from the fall itself, but from associated complications like infections and pneumonia.

7.2.4 Social Environment

Seniors in Hawaii County face challenges in housing and food security. Many seniors live alone without significant others to support them, according to a key informant. Quantitative data corroborate the observation: 9.2% of seniors lived alone in 2010, the highest value in the state (8.6% average).[17] In addition, 5.5% of people 65+ had low access to a grocery store in 2010, higher than the median value of U.S. counties (2.8%). At 9.6%, Hawaii County had the highest percentage in the state of people 65+ living below poverty level in 2009-2013.

7.3 Low-Income Population

Key issues

- **Issues of access to health services are exacerbated and result in poor outcomes**
- **Poor oral health and behavioral health issues**

[17]North Hawaii Outcomes Project. (Accessed October 5, 2015). *Hawaii County Community Health Profile, 2012*. Retrieved from http://nhop.org/wp-content/uploads/2012/06/R.Master06.06.12.pdf

Opportunities and strengths	
Increase dentists who take Medicaid patients through policy change	Expand dental chairs in collaboration with Federally Qualified Health Centers, which accept Medicaid patients

Across the qualitative data, issues of access to health services, which are exacerbated for the low-income population, emerged as a common theme. Key informants observed that barriers for this population include: inadequate Medicaid and health insurance coverage for behavioral health and oral health services; too few medical providers, behavioral health providers, and dentists accepting Medicare or Medicaid; and lower health literacy and health navigations. Poor access to services results in delayed diagnosis and treatment, worsened conditions, unnecessary hospital visits, and hastened death, according to key informants.

Multiple key informants additionally observed that the low-income population and the rural population are commonly one and the same. People with lower incomes in rural areas may not have a car or any reliable alternatives, and face transportation barriers to healthcare services, as well as to food and other basic services, as discussed in Section 6.1. According to qualitative data, a higher percent of children in Puna qualify and receive free or reduced lunch compared to the rest of the Big Island, which aligns with data from the SocioNeeds Index.

Several key informants noted that conditions of low-income contribute to feelings of disenfranchisement, despair, and low resilience, negatively impacting quality of life overall and leading to poor mental health and higher substance abuse. The low-income population also experiences poor oral health; the low-income child population is especially vulnerable to this, resulting in poor concentration and low educational attainment.

The low-income population is also at higher risk of obesity due to low access to healthy foods and the convenience of fast foods, as discussed in Section 6.2.1.

7.4 Rural Communities

As highlighted by key informants throughout the report, transportation and infrastructure remain significant challenges for many Hawaii County residents. Residents of rural communities were observed to typically have lower incomes and poorer social determinants of health. One key informant noted that because low-income residents often live in rural areas, fast food is very appealing because it is inexpensive, easy, and requires little time commitment after a long commute to work. Lack of sidewalks in rural areas prevents older residents from being able to age in place. As discussed in Section 6.1.1, the difficulty of accessing services leads residents to delay seeking care until their health issues are exacerbated.

7.5 People with Disabilities

Key Issues
• High percentage of adults with activity limitations due to health

- **Lack of services and access to care**

Opportunities and Strengths	
Need to increase social worker resources	Need developmentally staged, integrated, psychologically stimulating childcare and after school care
There is documented need for transportation for people with disabilities	Telehealth is a big opportunity

In 2013, 18.8% of adults in Hawaii County reported having any limitations in any activities because of a physical, mental, or emotional problem – the highest in the state (limitations due to arthritis are discussed in Section 6.2.4). A key informant noted that Hawaii County has the highest ratio of people with disabilities in the state – the caseload is 50 clients per social worker.

Many key informants expressed concern over the lack of services in Hawaii County. People with developmental disabilities describe access to dental care as one of the most needed services because many dentists do not accept Medicare or Medicaid. Many services for people with disabilities are insufficient – physical therapy, occupational therapy, and speech therapy. Moreover, schools are unequipped and not providing certified professionals. There are people newly disabled through trauma, and these patients must travel to Oahu for care because of the lack of rehabilitation services. Hawaii County has a number of wheelchair-bound clients who have limited access to care because they live in remote areas and do not have transportation that can accommodate the wheelchair and cannot afford a taxi either.

7.6 Homeless Population

Key Issues

- **Access to homeless services**
- **Mental health and addiction**

Opportunities and strengths
Outreach to and develop relationships with people who are homeless

Housing is key to health and wellness

In the 2014 fiscal year, Hawaii County had 1,770 of the state's 14,282 homeless service clients. Hawaii County experienced the highest percentage of chronic homelessness among its clients (34%) compared to other Hawaii counties. At 60%, Hawaii County's proportion of new homeless service clients was higher than the state average of 38% and increased from the previous year by 53%.

Of the new homeless service clients, 80.8% were recently homeless, or experienced homelessness less than one year prior to receiving homeless services. Table 7.2 illustrates a breakdown of the homeless programs

Table 7.2: Number of Homeless Served by Program Type

Hawaii County, FY 2014	Count

utilized.[18] Hawaii County had the highest percentage of clients using its outreach services at 79% compared to other counties; outreach services are typically the first point of contact for homeless individuals and connects them with programs and services. During inclement weather, homeless people utilize the emergency room for food and shelter, observed a key informant.

Homeless Programs	1,770
Rapid Rehousing	74
Outreach	1,401
Shelter	746
Emergency	516
Transitional	287

** The sums of the program types exceed the total counts because some clients accessed multiple types of homeless programs.*

7.7 People from Micronesian Regions

Key issues

- **Transportation, language, and cultural barriers to accessing care**
- **Frequent use of emergency room for nonemergency healthcare needs**

Opportunities and strengths	
Outreach to people from Micronesian regions	Increase the number of interpreters

Key informant testimony on issues affecting people from Micronesian regions focused largely on this population's increased difficulty in accessing care. Financial assistance policies for this population are changing and will affect this population's access to healthcare in the future. As a key informant observed, language barriers and lower health literacy contribute to delayed diagnosis and treatment. Individuals from Micronesian regions mostly live in Kau and Ocean View and lack transportation, contributing to additional difficulties in accessing care. Multiple key informants commented that many use the emergency room for nonemergency healthcare needs – even if they have a primary care physician, due to familiarity and prior experience with the hospital. A key informant expressed concern that this population does not use car seats for children.

Key informants also spoke to the Marshallese community specifically: Kau Hospital, a critical access hospital, has difficulty getting services to the population, and on the other hand, the Marshallese do not go to hospitals due to lack of transportation, long traveling distances, and cultural barriers.

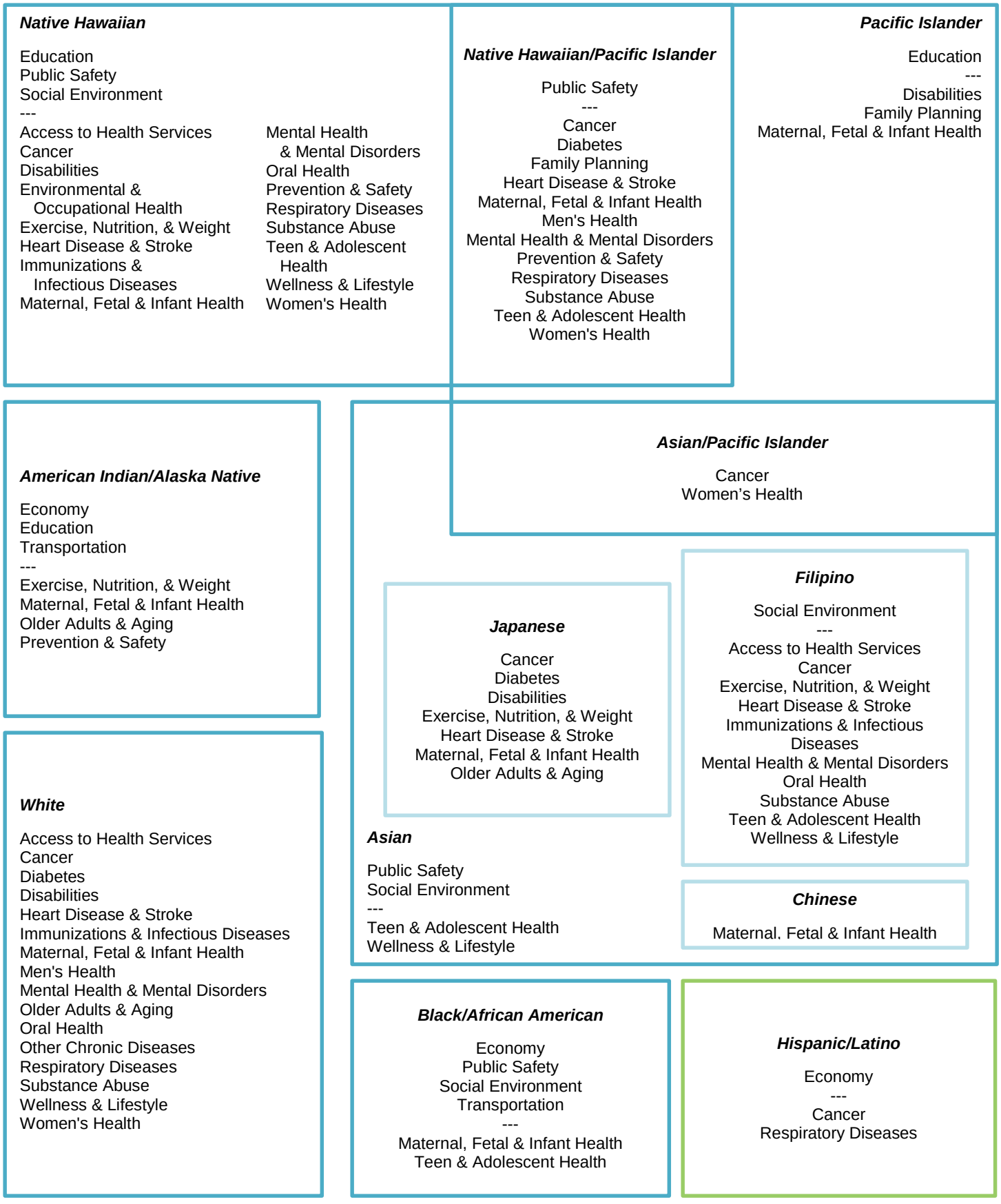
7.8 Disparities by Race/Ethnic Groups

Both quantitative and qualitative data illustrate the health disparities that exist across Hawaii County's many racial and ethnic groups. Figure 7.1 identifies all health topics for which a group is associated with the poorest value for at least one quantitative indicator. Within each list, Quality of Life measures are presented before the Health Topic Areas. The list is particularly

[18] Center on the Family, University of Hawaii at Manoa. (Accessed August 17, 2015). *Homeless Service Utilization Report 20142.* Retrieved from http://uhfamily.hawaii.edu/publications/brochures/60c33_HomelessServiceUtilization2014.pdf

long for the Native Hawaiian and Pacific Islander, White, and Filipino populations. Key informants also took note of issues pertaining to the Hispanic/Latino population, which makes up a larger share of the total population in Hawaii County than in the state overall.

Figure 7.1: Disparities by Race/Ethnicity



Qualitative data collected from health experts in Hawaii County highlighted the substantial transportation and cultural barriers faced by people from the Micronesian regions and other groups. Below are a few excerpts taken from conversations with key informants that highlight the issues impacting racial and ethnic groups in Hawaii County.

Figure 7.2: Key Informant-Identified Health Issues Impacting Racial/Ethnic Groups

8 Conclusion

While there are many areas of need, there are also innumerable community assets and a true *aloha* spirit that motivates community health improvement activities. This report provides an understanding of the major health and health-related needs in Hawaii County and guidance for community benefit planning efforts and positively impacting the community. Further investigation may be necessary for determining and implementing the most effective interventions.

Community feedback to the report is an important step in the process of improving community health and is encouraged and welcome. To submit your thoughts to North Hawaii Community Hospital, please call 808-881-4695.