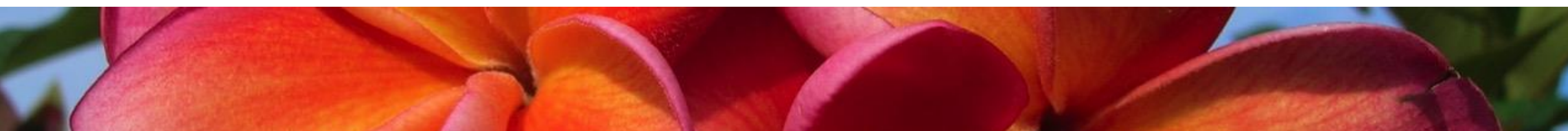
State of Hawaii

Community Health Needs Assessment

— July 2015 —



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Executive Summary

Introduction

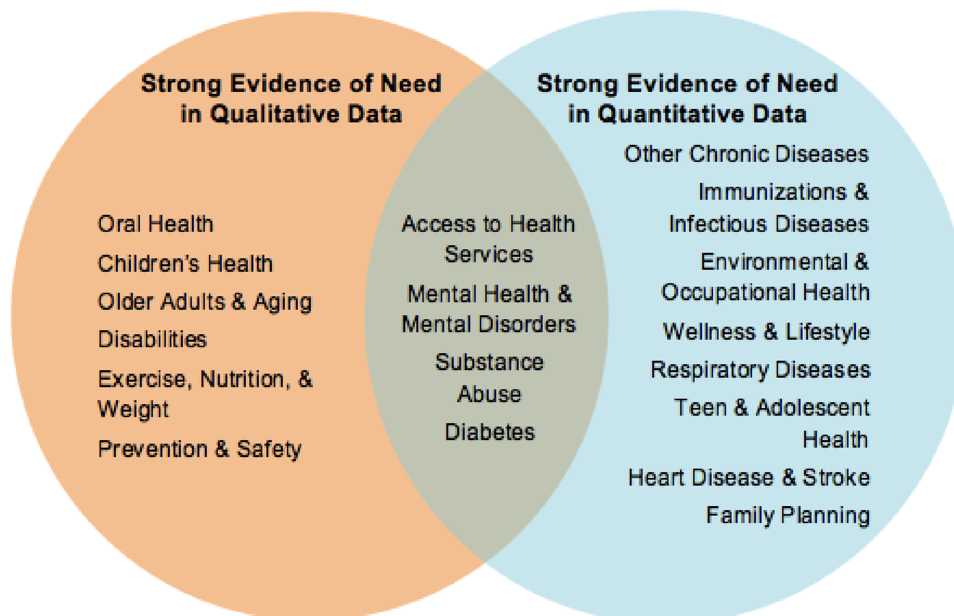
The Healthcare Association of Hawaii and its member hospitals are pleased to present the 2015-2016 State of Hawaii Community Health Needs Assessment (CHNA). This CHNA report was developed through a collaborative process and provides an overview of the health needs in Hawaii. The Healthcare Association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

The goal of this report is to offer a meaningful understanding of the health needs across the State, as well as to guide the hospitals in their community benefit planning efforts and development of implementation strategies to address prioritized needs. The report provides a foundation for working collaboratively with Hawaii stakeholders to improve health. 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 a sincere *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 400 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.

The most severe health needs, based on the overlap between quantitative data (indicators) and qualitative data (interviews), include Access to Health Services, Mental Health & Mental



Disorders, Substance Abuse, and Diabetes. Other significant health needs are based on either quantitative or qualitative data, and span a range of topic areas.

Though Hawaii as a state experiences better overall health, well-being, and economic vitality compared to most states in the U.S., these major themes emerged from the health needs:

- **Access to Care:** Hawaii has a significant need in healthcare access across many areas of care, especially primary care, mental health, substance abuse, and oral health.
- **Chronic Diseases:** Many are at-risk for developing chronic disease due to poor nutrition and low physical activity, and those who have any chronic health issue also experience poor health outcomes from both inadequate management of and the burden of the illness.
- **Environmental Health:** Hawaii residents experience a high burden of asthma, especially in children five and younger, and high rates of exposure to secondhand smoke.
- **Mental Health & Health Risk Behaviors:** Poor preventative care and access to care for mental health exacerbates the burden of mental health disorders in Hawaii residents. In addition, several poor health outcomes could be averted through behavioral changes, from increasing condom use and vaccination rates to improving safety education and sleep habits.
- **Women's, Infant, & Reproductive Health:** Poor birth outcomes are another area of concern in Hawaii due to substance abuse among pregnant women and poor access to healthcare.
- **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 district, Hawaii County
Puna district, Hawaii county
Molokai Island, Maui County
Leeward Oahu, Honolulu County

Subpopulation Groups of High Need			
Native Hawaiian	Children, teens, and adolescents	Rural communities	Compact of Free Association Migrants
Pacific Islander	Older adults	Low-income populations	Homeless individuals
Filipino	Persons with disabilities		

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.

All health improvement approaches will be enabled by intervening *mauka* ("toward the mountains") or upstream on the determinants of health, especially for the highest need

geographies and populations that experience the greatest health disparities. Together, Hawaii hospitals and health stakeholders are working towards a community where safety, wellness, and community support exists for all residents.

Selected Priority Areas

Castle Medical Center has selected the following priority areas:

Access to Care

1. Improve access to care for individuals with pre-diabetes.
   A. Expand educational offerings pertaining to diabetes.
   B. Pre-Diabetes Classes: Castle Medical Centers Wellness Center is providing pre-diabetes classes to the community. In support of Castle Health Groups (CHG) population health initiatives, CHG has and will continue to pay the class fee for any participant who is referred to the class by one of our 32 primary care physicians, regardless of insurance.
   C. Weigh of Life: In partnership with The National Kidney Foundation (Hawaii) and The Boys and Girls Club (Kailua), CHG is sponsoring a class for Keiki age 8 to 12 whose families are serious about becoming a healthy family and focus on managing weigh together. The classes are interactive and last for 4 weeks.
   D. Well Being 5 Assessment: CHG is running an incentive program for Windward community members to complete the Well Being 5 Assessment. The 10-20-minute survey gives each individual a "Wellness" score which is shared with their primary care physician when appropriate. Wellness goals can be discussed and incorporated into an outpatient care plan.

In addition, Castle Medical Center continues to provide leadership and expertise within our health system by asking these questions for each priority area:

1. Are we providing the appropriate resources in the appropriate locations?
2. Do we have the resources as a region to elevate the population's health status?
3. Are our interventions making a difference in improving health outcomes?
4. What changes or collaborations within our system need to be made?
5. How are we using technology to track our health improvements and provide relevant feedback at the local level?

Building a healthy environment requires multiple stakeholders working together with a common purpose. We invite you to explore our health challenges in our communities outlined in this assessment report. More importantly though, we hope you imagine a healthier region and collectively prioritize our health concerns and find solutions across a broad range of sectors to create communities we all want for ourselves and our children.

Making a different: Results from our 2013-2016 CHNA/CHP

Adventist Health wants to ensure that our efforts are making the necessary changes in the communities we serve. In 2013, we conducted a CHNA and the identified need was **diabetes**.

Goal: Reduce the disease and economic burden of diabetes and improve the quality of life for persons who have, or are at risk for diabetes.

Objectives:

1. Increase patient participation in first and follow up appointments pertaining to pre-diabetes or diabetes care.
2. Increase the quality and quantity of educational offerings pertaining to diabetes
3. Increase patient and community partner participation in educational offerings pertaining to diabetes.
4. Reduce the rate of lower extremity amputations in persons with diagnosed diabetes (baseline 2012).

Accomplishments:

Castle Diabetes Self-Management Education Program at Castle's Wellness & Lifestyle Medicine Center was certified through the American Association of Diabetes Educators in November of 2013. Last year 741 patients were seen in the program.

In addition to our regular diabetes program, we offer opportunities such as grocery shopping tours and diabetes-friendly vegan cooking classes to help our patients apply what they learned in the classroom out in the real world.

The diabetes grocery programs occur quarterly at different grocery stores in the Kailua area. Grocery stores featured in 2015 included Foodland, Safeway, Whole Foods, and Down to Earth. We run two class times, and the tour is generally 1.2 to 2 hours. CMC Wellness outpatient registered dietitian and certified diabetes educator, Amanda O'Neill, RDN, CDE, leads the tours. She covers recipes, meal preparation, label reading, and healthy snack ideas, all while covering the perimeter of the store. Thirty-four patients participated in the tours in 2015.

"It is the day-to-day decisions people make that help manage their lifestyle. Grocery shopping is something everyone has to do. Showing people how to plan, shop, and prepare their nutrition is crucial to successful behavior change. With diabetes, the reading of labels can be very confusing. By reinforcing the education received in the classroom in our shopping tour, patients really understand what products to buy," states O'Neill.

Most of the patients feel they can apply the carbohydrate-counting principles and label-reading skills they learn in class much more readily after attending a grocery store tour.

Preventing Diabetes classes were added in 2015. Three classes were held throughout the year with 75 participants, paying a $5 fee, as pre-diabetes/metabolic syndrome is not covered by insurance companies in Hawai'i. Our Certified Diabetes Educator, Amanda O'Neill, taught the two-hour classes focusing on a controlled, consistent carbohydrate intake, physical activity, and weight loss (if overweight).

1 Introduction

1.1 Summary of CHNA Report Objectives and Context

In 2013, the 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-wide assessments for its members.

1.1.1 Healthcare Association of Hawaii

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

1.1.2 Member Hospitals

Fifteen Hawaii hospitals,[1] located on all islands, participated in the CHNA project:

Castle Medical Center
Kahi Mohala Behavioral Health
Kaiser Permanente Medical Center
Kapi`olani 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

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

[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.

individuals shared their insights and knowledge about health care, 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, Kahi Mohala Behavioral Health
Kathy Clark, Wilcox Memorial Hospital
R. Scott Daniels, State Department of Health
Thomas Driskill, Spark M. Matsunaga VA Medical Center
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 Hawaii, 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, Kauai Region
Tammy Kohrer, Wahiawa General Hospital
Jay Kreuzer, Kona Community Hospital
Tony Krieg, Hale Makua
Eva LaBarge, Wilcox Memorial Hospital
Greg LaGoy, Hospice Maui, Inc.
Leonard Licina, Kahi Mohala Behavioral Health
Wesley Lo, Hawaii Health Systems Corporation, Maui Region
Lorraine Lunow Luke, Hawaii Pacific Health
Sherry Menor-McNamara, Chamber of Commerce Hawaii
Lori Miller, Kauai 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, Care Resource 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 S. Wong, State of Hawaii Department of Human Services
Betty J. Wood, Department of Health
Barbara Yamashita, City and County of Honolulu, Office of the Mayor
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.

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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 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

Adventist Health

Castle Medical Center is an affiliate of Adventist Health, a faith-based, not-for- profit, integrated health care delivery system headquartered in Roseville, California. We provide compassionate care in communities throughout California, Hawaii, Oregon and Washington.

Adventist Health entities include:

- 20 hospitals with more than 2,800 beds
- More than 235 clinics and outpatient centers
- 14 home care agencies and 7 hospice agencies
- Four joint-venture retirement centers
- Workforce of 28,600 includes more than 20,500 employees; 4,500 medical staff physicians; and 3,600 volunteers

We owe much of our heritage and organizational success to the Seventh-day Adventist Church, which has long been a promoter of prevention and whole person care. Inspired by our belief in the loving and healing power of Jesus Christ, we aim to bring physical, mental and spiritual health and healing to our neighbors of all faiths.

Every individual, regardless of his/her personal beliefs, is welcome in our facilities. We are also eager to partner with members of other faiths to enhance the health of the communities we serve.

Our commitment to quality health care stems from our heritage, which dates back to 1866 when the first Seventh-day Adventist health care facility opened in Battle Creek, Michigan. There, dedicated pioneers promoted the "radical" concepts of proper nutrition, exercise and sanitation. Early on, the facility was devoted to prevention as well as healing. They called it a sanitarium, a place where patients—and their families—could learn to be well.

More than a century later, the health care system sponsored by the Seventh-day Adventist Church circles the globe with more than 170 hospitals and more than 500 clinics, nursing homes and dispensaries worldwide. And the same vision to treat the whole person—mind, body and spirit—continues to provide the foundation for our progressive approach to health care.

Adventist Health's Mission: To share God's love by providing physical, mental and spiritual healing.

Adventist Health's Vision: Adventist Health will be a recognized leader in mission focus, quality care and fiscal strength.

Castle Medical Center

A full-service medical center offering a wide range of inpatient, outpatient, and home-based services, Castle Medical Center is a 160-bed facility with more than 1,000 employees and staffed by 300 physicians. Located just outside of Kailua, Castle serves all of Oʻahu and is the primary health care facility for the Windward side of the island. The hospital is owned and operated by Adventist Health, a Seventh-day Adventist health care system.

Some 300 physicians have chosen to affiliate with Castle Medical Center, which offers the full range of medical and surgical care. Our hospital's mission — "Caring for our community, Sharing God's love." —is combined with an emphasis on technology and quality.

We are continually developing therapies and new technologies and incorporating advancements in surgery to improve the results of our patient care. Innovations in imaging and scanning technology have allowed us to provide our patients with the best treatments and care available.

Castle Medical Center's unique combination of state-of-the-art technology with "state-of-the-heart" care—medical and nursing care in a nurturing environment—offers our patients access to medical experts and the newest and most innovative treatments that are provided with an exceptional level of personal attention.

Many of Castle's most successful programs are focused on preventive medicine and the promotion of healthy life habits. Castle's Wellness and Lifestyle Medicine Center, our Rehabilitation Services in Kailua and Kāneʻohe, the employee wellness program, LivingWell, and Castle's vegetarian cafeteria, The Bistro, all support this mission. In addition, Castle Medical Center offers a team approach to weight loss surgery with The Hawaiʻi Center for Metabolic and Bariatric Surgery. In this center's programs, patients work closely not only with a surgeon, but with an entire team of dedicated weight loss professionals.

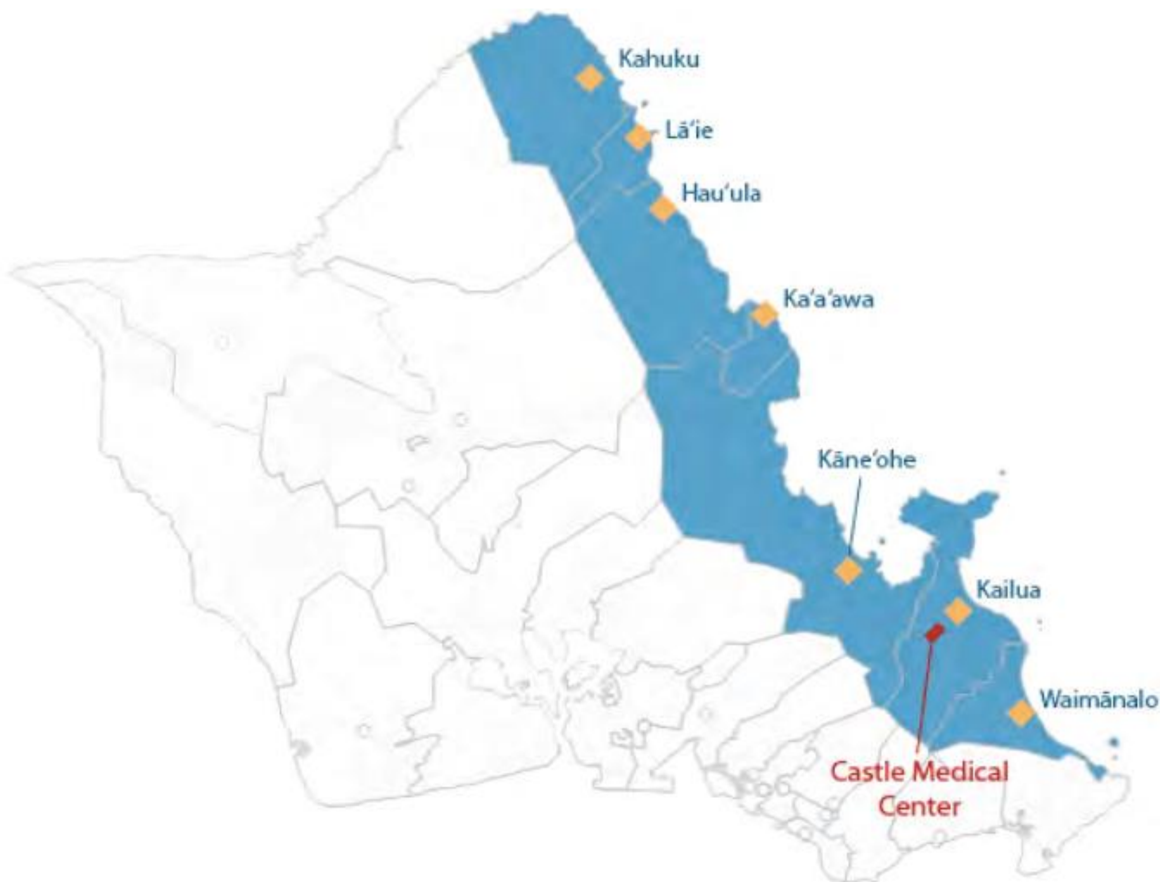
Castle Medical Center focuses on providing patient-centered health care in a caring environment that extends well beyond hospital and clinic walls. Our many programs serve the medical needs of all the communities we serve.

A wide range of classes and programs have been developed to meet the community's health needs: birthing classes, infant care classes, vegetarian cooking classes, nutritional counseling, lifestyle weight management, surgical weight loss seminars, tobacco cessation courses, massage therapy and aerobics and exercise classes. Free seminars are also provided to the public, sometimes with nationally known speakers, on a variety of topics, such as nutrition, advances in medicine, and spiritual wellness. Also free are our support groups on caregiving, bereavement, cancer, Parkinson's disease, mental illness and tobacco cessation.

In the twelve months, ending in December 2015, Castle recorded more than 8,500 inpatient discharges and over 64,000 outpatient visits, and our Emergency Department received nearly 34,500 visits. Our hospital ranks as the largest provider of emergency medical services on the Windward side of O'ahu.

The hospital service area is defined by a geographical boundary of the State of Hawaii. The state will serve as the unit of analysis for this Community Health Needs Assessment. Hence, the health needs discussed in this assessment will pertain to individuals living within this geographic boundary. When possible, highlights for sub-geographies within Hawaii are provided. The specific area served by Castle Medical Center is indicated in Figure 1.1.

Figure 1.1: Primary Service Area Map



2 Selected Priority Areas

Priority Area 1: Access to Care

Diabetes: According to the American Diabetes Association, diabetes is the 5th leading cause of death in the United States. In Honolulu County, it affects 8.5% of the population and disproportionately affects certain groups such as Native Hawaiians (12.3%) and Filipinos (10.9%). On Windward O‘ahu, the long-term complications of diabetes resulted in a 2011 hospitalization rate of 105.9/100,000 population, the second highest in the county. The American Diabetes Association (ADA) estimates that by 2050, one in three American adults will have diabetes. In Hawai‘i, that estimate is one in two. At present, there are an estimated 442,000 Hawai‘i adults over the age of 20 with pre-diabetes. The magnitude and severity of diabetes in Windward O‘ahu and throughout Honolulu County warrant collective approaches that address all stages of the disease, most especially in the prevention/pre-diabetes phase. Pre-diabetes can be stabilized and sometimes reversed through early education and intervention. Unfortunately, there is very little insurance coverage for people with this diagnosis and most do not have coverage that will allow them to obtain the necessary education and interventions that can address the conditions.

Goal

Reduce the disease and economic burden of diabetes and improve the quality of life for persons who have, or are at risk for diabetes.

Objectives

1. Increase patient participation in first and follow up appointments pertaining to pre-diabetes or diabetes care.
2. Increase the quality and quantity of educational offerings pertaining to diabetes
3. Increase patient and community partner participation in educational offerings pertaining to diabetes.

Interventions

1. CMC’s Wellness & Lifestyle Medicine Center (CWLMC) will pursue offering programs and services specifically tailored to the pre-diabetic population. This includes partnering with churches to provide education to their respective congregations.
2. CMC’s CWLMC will provide the educational offerings and lifestyle programs that can positively impact the health of diabetics on the Windward side of O‘ahu.
3. CMC is an accredited Diabetes Self-Management Education program by the American Association of Diabetes Educators (AADE). We will provide educational programs that empower patients to effectively manage their diabetes based on the AADE 7 self-care

behaviors (healthy eating, being active, monitoring, taking medication, problem solving, reducing risks, and healthy coping).

4. CMC provides weekly fitness activities, quarterly grocery shopping tours for all diabetic patients.
5. CMC's registered dieticians will provide care and education to children with Type 2 diabetes accompanied by hands-on learning and the use of tracking apps for follow-up care.
6. CMC will partner with local schools, and the American Diabetic Association to expand educational offerings outside of CMC. These include Step Out Walk to Stop Diabetes and participation in health fairs at local schools

3 Evaluation of Progress since Prior CHNA

3.1 Impact since Prior CHNA

The following changes were made to interventions in 2015:

1. CMC began offering "Preventing Diabetes" classes in Spring 2015 designed for anyone that has been diagnosed by a healthcare provider with pre-diabetes, impaired fasting glucose, impaired glucose tolerance or metabolic syndrome. The fee is $7, and the class is taught by a Certified Diabetes Educator.
2. CMC offers AADE-accredited classes twice a week (Tuesday evenings and Thursday mornings) to meet the needs of our Windward community. Program goals monitor HgA1C, body weight, behavioral goals and customer satisfaction. In 2015, we saw 741 patients in our diabetes program including both group and individual appointments.

3.2 Community Feedback on Prior CHNA or Implementation

Update on Program Highlight for 2014

No community feedback was received but the following was implemented.

Castle Diabetes Self-Management Education Program at Castle's Wellness & Lifestyle Medicine Center was certified through the American Association of Diabetes Educators in November of 2013. Last year 741 patients were seen in the program.

In addition to our regular diabetes program, in the spring of 2015 we decided to provide opportunities such as grocery shopping tours and diabetes-friendly vegan cooking classes to help our patients apply what they learned in the classroom out in the real world.

The diabetes grocery programs occur quarterly at different grocery stores in the Kailua area. Grocery stores featured in 2014 included Foodland, Safeway, Whole Foods, and Down to Earth. We run two class times, and the tour is generally 1.2 to 2 hours. CMC Wellness outpatient registered dietitian and certified diabetes educator, Amanda O'Neill, RDN, CDE, leads the tours. She covers recipes, meal preparation, label reading, and healthy snack ideas, all while covering the perimeter of the store. Approximately 35 patients participated in the tours in 2015.

"It is the day-to-day decisions people make that help manage their lifestyle. Grocery shopping is something everyone has to do. Showing people how to plan, shop, and prepare their nutrition is crucial to successful behavior change. With diabetes, the reading of labels can be very confusing. By reinforcing the education received in the classroom in our shopping tour, patients really understand what products to buy," states O'Neill.

Most of the patients feel they can apply the carbohydrate-counting principles and label- reading skills they learn in class much more readily after attending a grocery store tour.

4 Methods

Two types of data were analyzed for this Community Health Needs Assessment: quantitative data and qualitative data. 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.

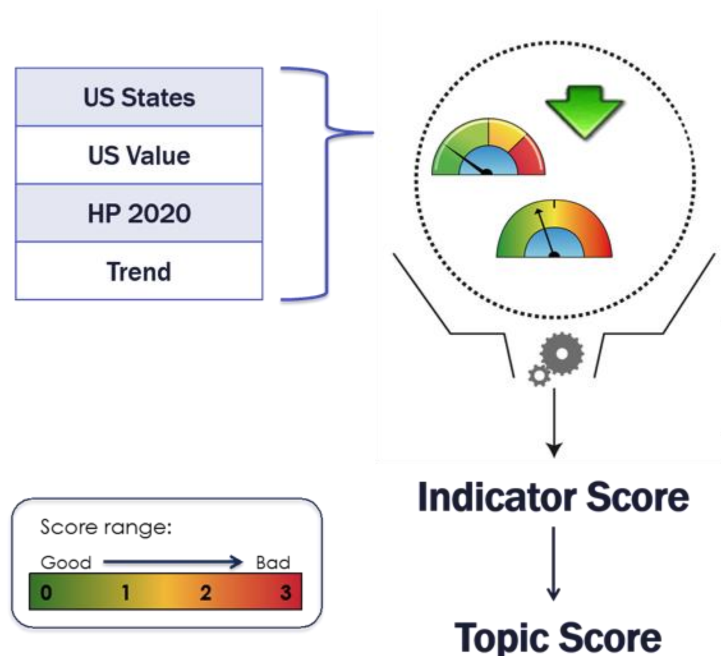
4.1 Quantitative Data Sources and Analysis

All quantitative data used for this needs assessment is secondary data, or data that has 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 was queried, there were over 500 health and health-related indicators on the Hawaii Health Matters dashboard, and 429 of those were available for this analysis for the state (some indicators have data at the county level only). For each indicator, the online platform includes several ways (or comparisons) by which to assess Hawaii's status, including comparing to other U.S. states, the U.S. value, the trend over time, and Healthy People 2020 targets.

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 compares to the other states in the U.S., 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



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

4.1.1 Race/Ethnicity Disparities

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 and also provide further insight on the rate of preventable hospitalizations at a sub-county level. 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.

4.1.3 Shortage Area Maps

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

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

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

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:		
American Diabetes Association	Department of Human Services	Hawaii Primary Care Association
Catholic Charities Hawaii	Executive Office on Aging	Hawaii State Department of Health
Department of Education	Governor's Office	Homeless Programs Office
Department of Health, Behavioral Health Services	Hawaii Dental Services	John A. Burns School of Medicine
Department of Health, Disease Outbreak and Control Division	Hawaii Medical Service Association	State Senate

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.

Please see Appendix A for a list of interview questions.

4.3 Prioritization

To identify priority areas for action, Healthy Communities Institute will lead a prioritization session in September 2015 with stakeholders from participating HAH member hospitals. This section will be updated after the meeting with details on the prioritization process and outcomes.

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. 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

[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).

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 qualitative 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 had a population of 1,404,054. As measured by the decennial Census,[7] the population density in the state is much higher than the U.S. overall. Between 2010 and 2013, population growth was higher across all counties in Hawaii compared to the U.S., as shown in Table 5.1.

Table 5.1: Population Density and Change

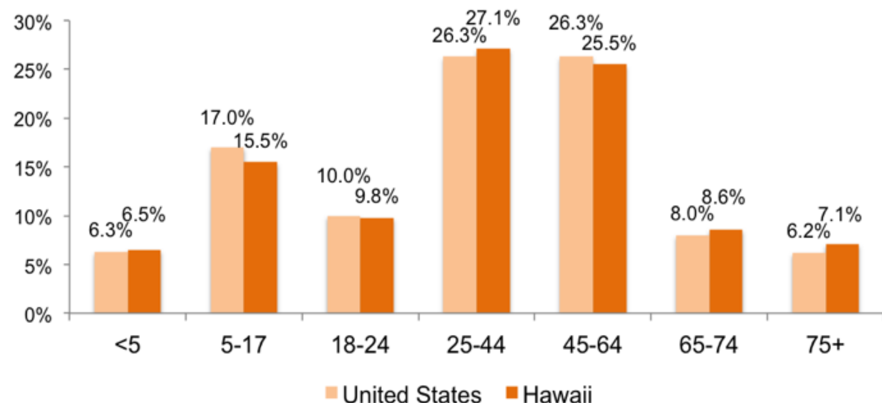
	U.S.	Hawaii	Hawaii County	Honolulu County	Kauai County	Maui County
Population, 2013	316,128,839	1,404,054	190,821	983,429	69,512	160,202
Pop. density, persons/sq mi, 2010*	87	212	46	1,587	108	133
Population change, 2010-2013	2.4%	3.2%	3.1%	3.2%	3.6%	3.5%

*2010 U.S. Census

5.1.1 Age

Hawaii's population is slightly older than the rest of the country, with a median age of 38.1 in 2013, compared to 37.5 for the nation. As shown in Figure 5.1, children under 18 made up only 22.0% of the state's population (compared to 23.3% in the U.S.) and adults over 65 made up 15.7% of the population (compared to 14.2% in the U.S.).

Figure 5.1 Population by Age, 2013

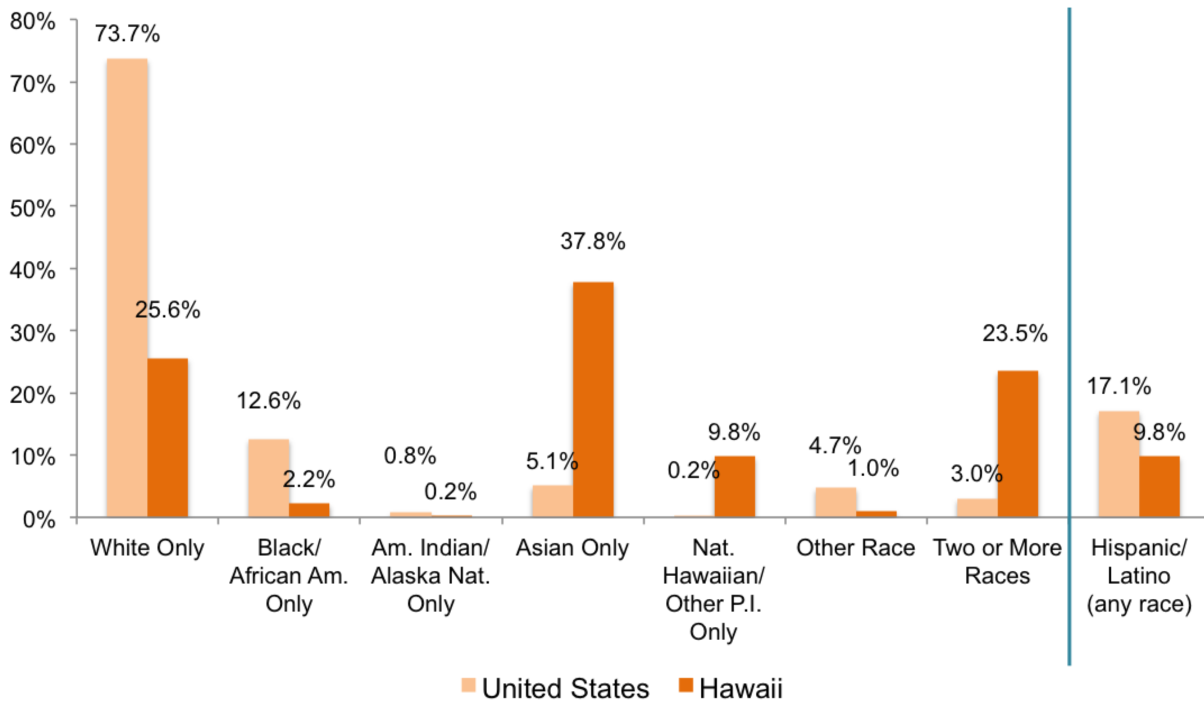


[7] United States Census Bureau. (2010). *2010 Census Demographic Profiles.* Available from http://www.census.gov/2010census/data/

5.1.2 Racial/Ethnic Diversity

A higher percentage of Hawaii's population is foreign-born compared to the U.S. In 2009-2013, 17.9% of the state was foreign-born, compared to 12.9% of the nation. In addition, more residents of Hawaii speak a foreign language. In 2009-2013, 25.4% of Hawaii's population aged 5 and older spoke a language other than English at home, compared to 20.7% of the U.S.

Figure 5.2: Population by Race/Ethnicity, 2013

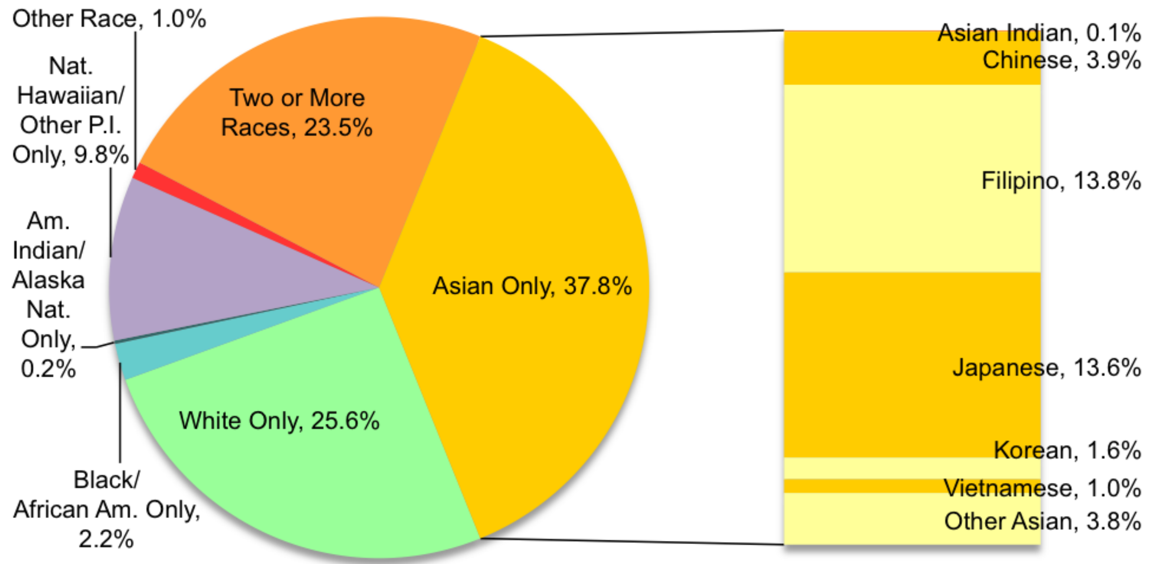


The race/ethnicity breakdown of Hawaii is significantly different from the rest of the country. In Figure 5.2, racial identity is displayed to the left of the line, while Hispanic/Latino ethnicity (of any race) is shown to the right.

Almost one in four residents identifies as two or more races, which is much more than in the U.S. overall. A closer examination of the multiracial population, in addition to the single-race populations, sheds more light on the singular diversity of the state of Hawaii, and gives a different perspective on the race/ethnicity makeup. Within Hawaii in 2013, 25.7% of the population identified as any part Native Hawaiian or Pacific Islander, 55.8% as any part Asian, and 42.5% as any part White.

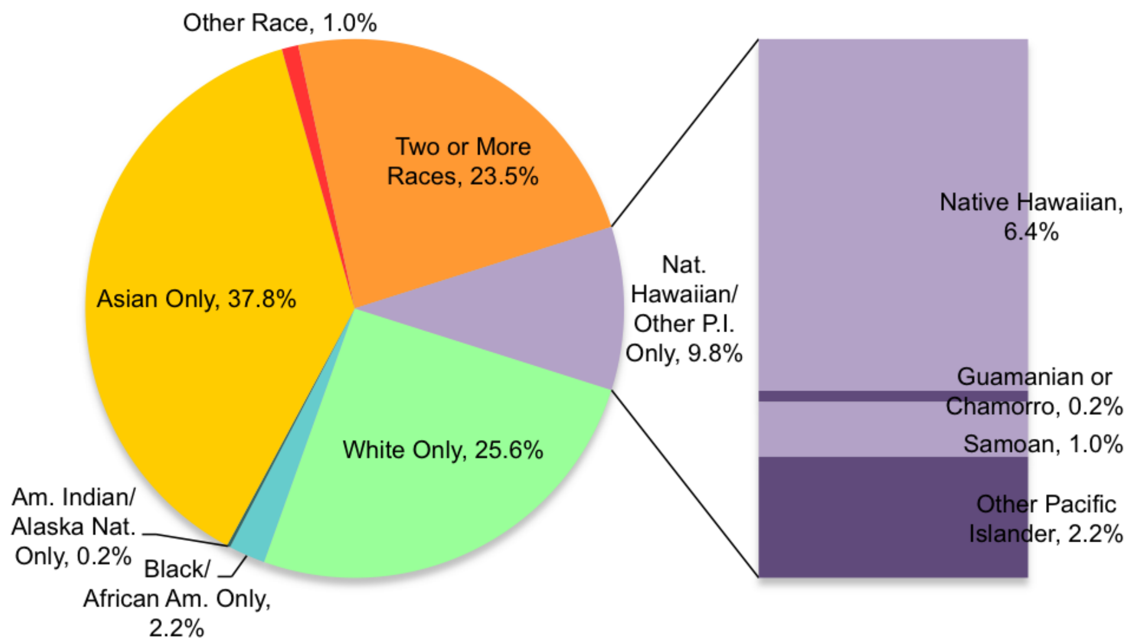
The population reporting as White only made up 25.6% of the population, compared to 73.7% of the nation. Black/African American, Hispanic/Latino, and Other race/ethnicity groups are also much smaller than the U.S. overall.

Figure 5.3: Population by Race: Breakdown of Asian Population



The largest single race group in Hawaii is Asian, of which the majority comprises Filipino (13.8%), Japanese (13.6%), and Chinese (3.9%) populations (Figure 5.3). Among the Native Hawaiian and Other Pacific Islander group, the majority identify as Native Hawaiian (Figure 5.4).

Figure 5.4: Population by Race: Breakdown of Native Hawaiian and Other Pacific Islander Population



5.2 Social and Economic Determinants of Health

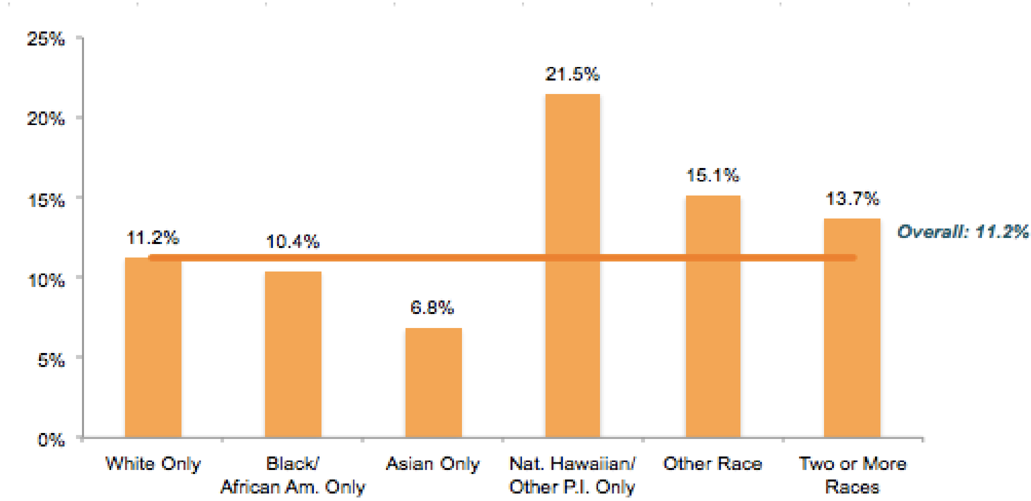
5.2.1 Income

The overall income in Hawaii is relatively high. Median household income for the state in 2009-2013 was $67,402; the national value was substantially lower at $53,046. Per capita income was also higher for the state at $29,305, compared to $28,155 for the nation.

5.2.2 Poverty

Certain race/ethnic groups are more affected by poverty, as seen in Figure 5.5. 11.2% of Hawaii's population lived below poverty level in 2009-2013, which was lower than the national value of 15.4%. It is important to note, however, that federal definitions of poverty are not geographically adjusted, so the data may not adequately reflect the proportion of Hawaii residents who struggle to provide for themselves due to the high cost of living in the state.

Figure 5.5: 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

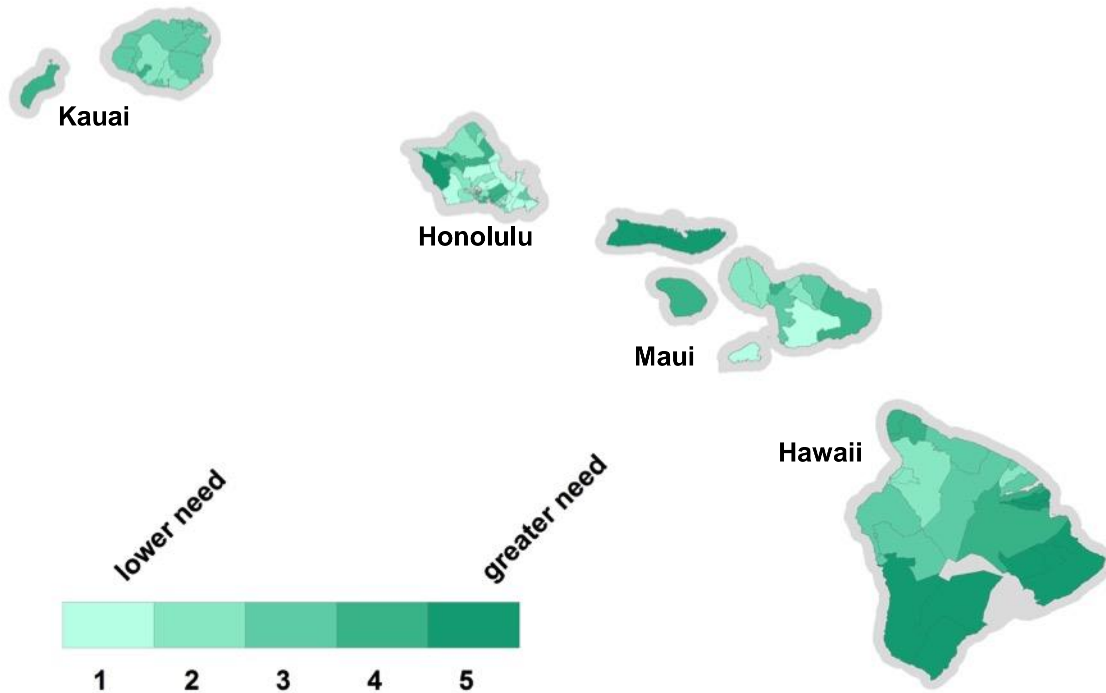
Hawaii residents have higher levels of educational attainment than the rest of the nation. In 2009-2013, 90.4% of the state's residents aged 25 and older had at least a high school degree, and 30.1% had at least a bachelor's degree. By contrast, 86.0% of the nation's 25+ population had a high school degree or higher, and 28.8% had a bachelor's degree or higher.

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 may impact health or access to care. 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, 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 5.6.

Figure 5.6: SocioNeeds® Index for Hawaii



The zip codes with the highest levels of socioeconomic need are found on Leeward Oahu in Honolulu County, the Island of Molokai in Maui County, and in the Kau and Puna districts in Hawaii County, as seen in Figure 5.6 and Table 5.2. These areas are more likely to experience poor health outcomes.

Table 5.2: Zip Codes with Highest Socioeconomic Need

Zip Code	Index	County
96778	93.7	Hawaii
96729	90.6	Maui
96757	90.2	Maui
96770	90.1	Maui
96783	88.8	Hawaii
96748	86.4	Maui
96760	86.3	Hawaii
96749	86.1	Hawaii
96772	85.8	Hawaii
96771	85.7	Hawaii
96785	83.2	Hawaii
96792	81.5	Honolulu
96781	79.6	Hawaii
96704	77.0	Hawaii
96777	74.4	Hawaii

6 Findings

Together, qualitative and quantitative data provided a breadth of information on the health needs of Hawaii residents. Figure 6.1 shows where there is strong evidence of need in qualitative data (in the upper half or 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

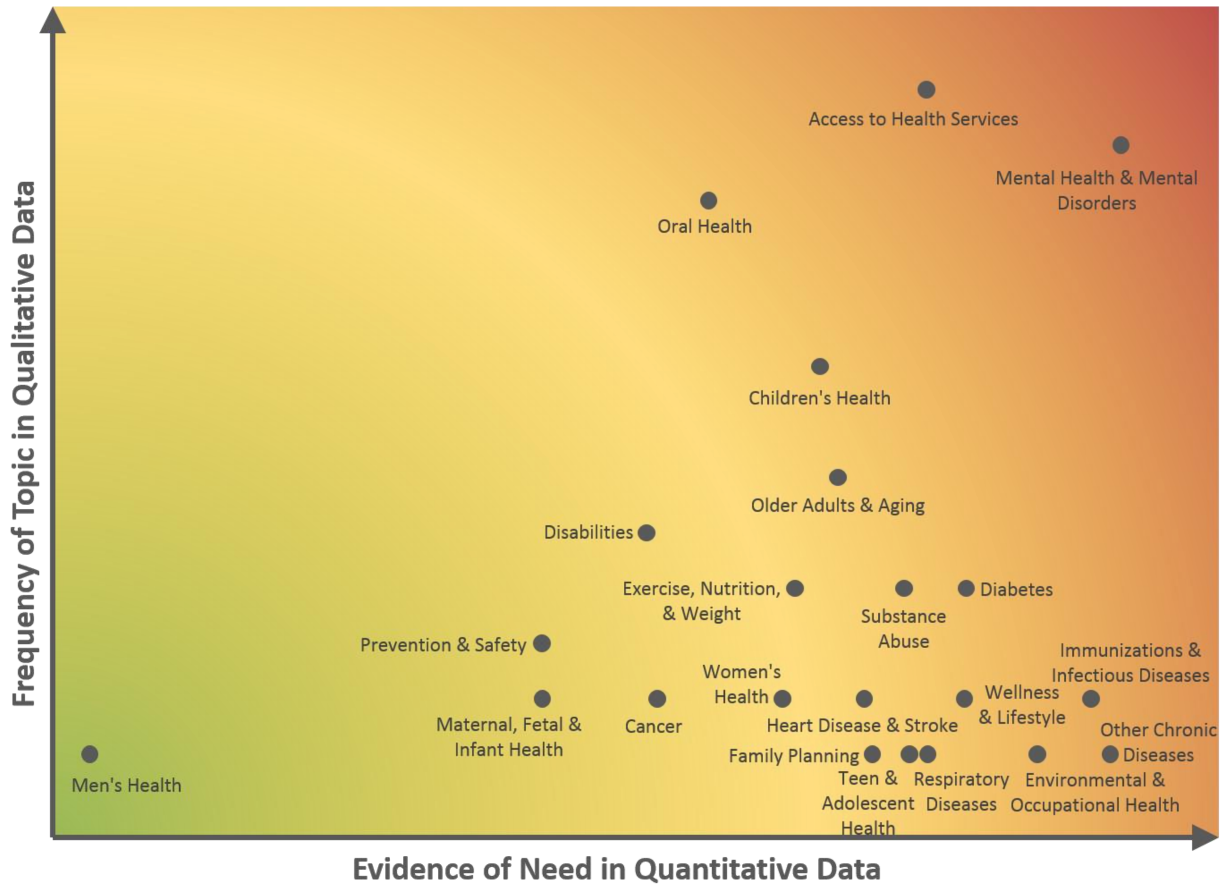
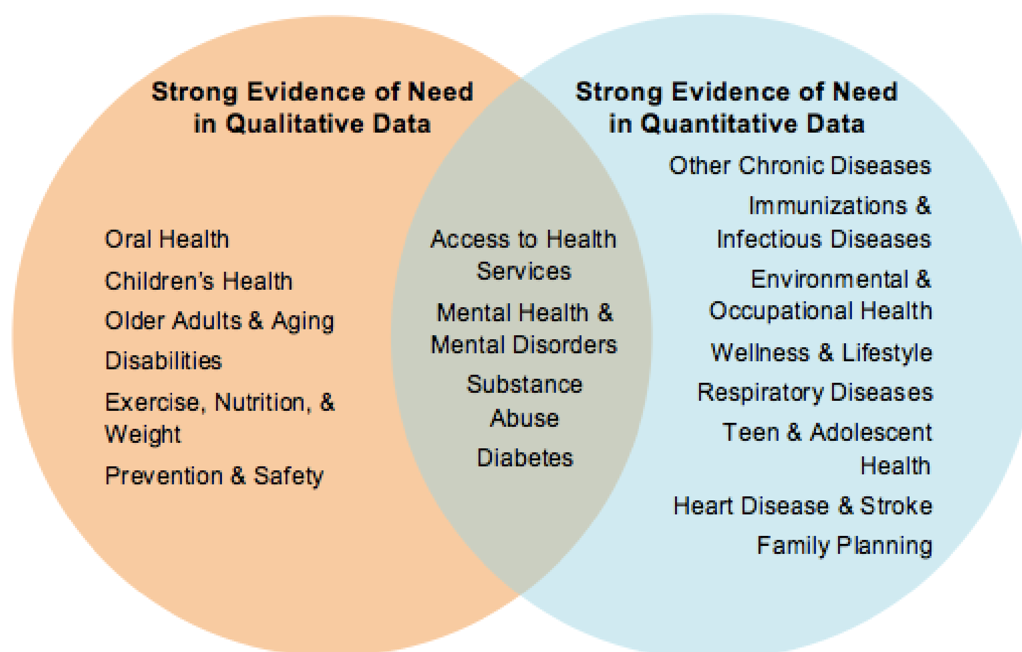


Figure 6.2: Topic Areas Demonstrating Strong Evidence of Need



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 distinctly high evidence of need in the areas of Access to Health Services and Mental Health. 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 topic Other Chronic Diseases, including measures of osteoporosis and kidney disease, contributed to a high quantitative score – but were not mentioned by key informants due to the specific nature of the health topic.

Each type of data included in the analysis 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 of all aforementioned data types are further discussed 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
Mental Health & Mental Disorders	1.64
Other Chronic Diseases	1.63
Immunizations & Infectious Diseases	1.61
Environmental & Occupational Health	1.56
Diabetes	1.50
Wellness & Lifestyle	1.50
Respiratory Diseases	1.47
Access to Health Services	1.47
Teen & Adolescent Health	1.45
Substance Abuse	1.45
Family Planning	1.42
Heart Disease & Stroke	1.42
Older Adults & Aging	1.39
Children's Health	1.38
Exercise, Nutrition, & Weight	1.36
Women's Health	1.35
Oral Health	1.28
Cancer	1.24
Disabilities	1.23
Maternal, Fetal & Infant Health	1.14
Prevention & Safety	1.14
Other Conditions	1.13
Men's Health	0.75

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

Quality of Life Topic	Secondary Data Score
Social Environment	1.52
Education	1.52
Economy	1.50
Environment	1.38
Public Safety	1.37
Transportation	1.02

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 & Mental Disorders, Oral Health, Compact of Free Association, Children's Health and Diabetes most often.

Figure 6.3: Word Cloud of Themes Discussed by Key Informants

Note to the Reader

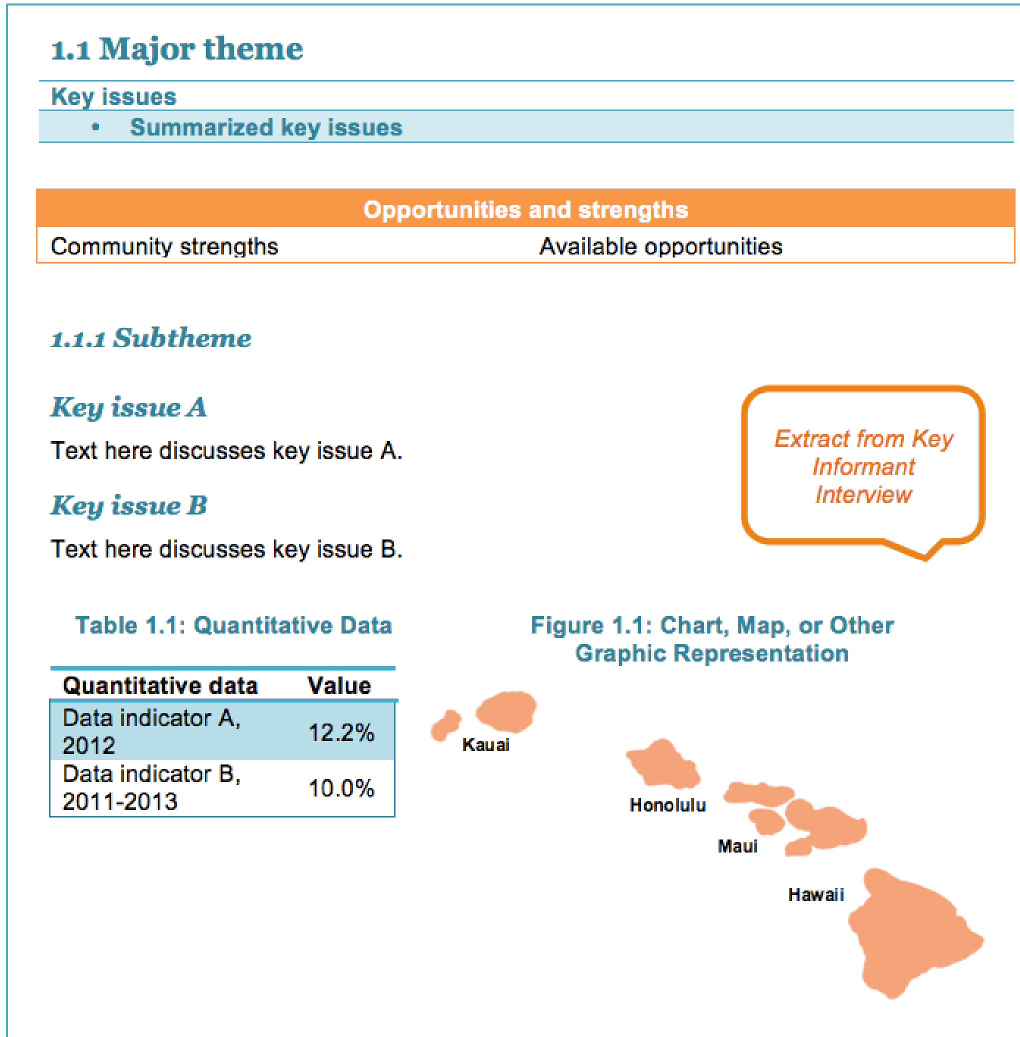
Readers may choose to study the entire report or alternatively focus on a specific major theme. Each section reviews the qualitative and quantitative data for each major theme and explores the key issues and underlying drivers within the theme. Due to the abundance of quantitative data, only the most 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

- **Provider shortages in primary care, specialists, mental health, and oral health, especially on the Neighbor Islands and underserved populations**
- **Need for integrating mental health and oral health into regular healthcare services**
- **High cultural, linguistic, and financial barriers to accessing care**

Opportunities and strengths	
Community health centers are embedded in the community and provide access to care	School-based healthcare programs are a good opportunity to improve access
Some readmissions could be prevented by expanding access to preventive care	One residency program is adopting team-based care and improving provider retention in Hawaii
Remote areas have begun using telehealth to get around workforce shortages	Need to invest in communities with disparities to strengthen entire healthcare system
The Hawaii Health Systems Corporation* provides access to hospital care	The patient-centered medical home model is being adopted and will improve care
Need to integrate basic oral health screenings and services into general pediatric care	Some funding is available for translation services
Some initiatives underway to integrate primary care and behavioral health services	

*The Hawaii Health Systems Corporation is the state hospital system and the largest provider of health care in Hawaii.

6.1.1 Access to Health Services

Healthcare coverage and affordability

Only 93.7% of individuals under 65 years of age had health insurance in 2012, which is not meeting the Healthy People 2020 target of insuring 100% of the population. Key informants noted that financing insurance is a primary driver of this problem and voiced concern over affordability of care. Even with health insurance, people are forced to choose between paying for their medications and paying for food.

People are unable to pay their cost share

Table 6.3: Providers per 100,000 Residents

Provider type	Providers / 100K pop.
Doctor of osteopathy, 2012	4
Medical doctor, 2012	80
Non-physician primary care provider, 2014	43

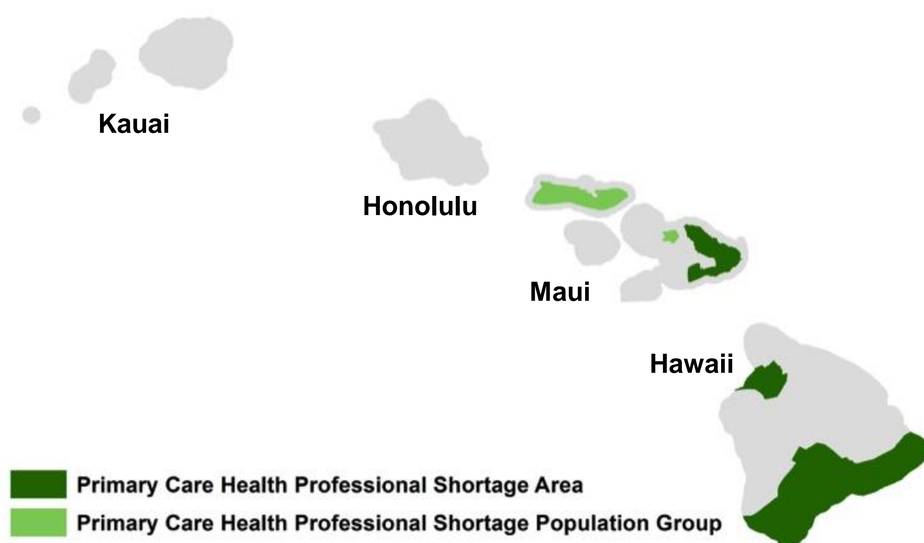
Physician shortages

The state of Hawaii has a low number of medical providers per 100,000 residents. Key informants explained that attracting new providers to Hawaii is especially difficult due to high living costs, few opportunities for spouses and children, and

challenging clientele. The physician shortage problem is especially apparent for the low-income population, whose Medicaid may not be accepted as insurance by providers in the community, and the Neighbor Islands, where there is a marked lack of specialists.

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).[9] By this criteria, North Maui and East Maui in Maui County and the South Kohala, Ka‘u, and Puna districts of Hawaii County emerge as Primary Care HPSAs. The Island of Molokai in Maui County is also distinguished as a HPSA for the low-income population, where access barriers prevent this population group from using the area's primary medical care providers. It is important to note that the HPSA metric does not account for higher primary needs of specific populations, such as the elderly, in its analysis.

Figure 6.5: Health Professional Shortage Areas



Regular source of care and preventive services

In 2013, only 67.7% of adults received a routine medical checkup in the prior 12 months. Other areas of improvement include preventive services for older men and women and teens with a physical in the past year.

Cultural and language barriers

Many key informants commented that language and cultural barriers are important factors to consider in improving health in the diverse populations of the state of Hawaii. Language is a particular concern for the elderly for whom English may not be a first language and for Compact of Free Association (COFA) migrants. Linguistic and cultural barriers affect the ability to

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

navigate within the health system, and impacts attitudes toward basic preventive care and screening services.

Continuity of care and care coordination

There is a need for improved continuity of care, particularly for individuals with special health care needs or disabilities and older adults. Key informants further elaborated that programs and services frequently work in silos, and called for improved care coordination, including a stronger role for case managers in hospitals and more coordination for nonmedical needs for older adults.

Transitions of care are disjointed

Highly impacted populations

People with disabilities: There is a need for improved continuity of care for individuals with disabilities and other special health care needs. In 2009-2010, only 37.3% of youth with special health care needs aged 12 to 17 years old had a doctor who facilitated the transition to adult health care and cultivated active participation in self-care, falling short of the Healthy People 2020 target of 45.3%.

Table 6.4: Highly Impacted Populations, Access to Health Services

	Hawaii value	Highly impacted groups
No Doctor Visit due to Cost, 2013	8.6%	Pacific Islander (19.6) Other (14.1) Native Hawaiian (13.5) Filipino (12.1)
Adults without Health Insurance, 2013	10.0%	Pacific Islander (26.9) Native Hawaii (15.1)

COFA migrants: COFA migrants experience high needs in chronic diseases and mental health, but struggle to access services due to stigma and discrimination as well as the loss of federal medical coverage and migration to the Health Exchange.

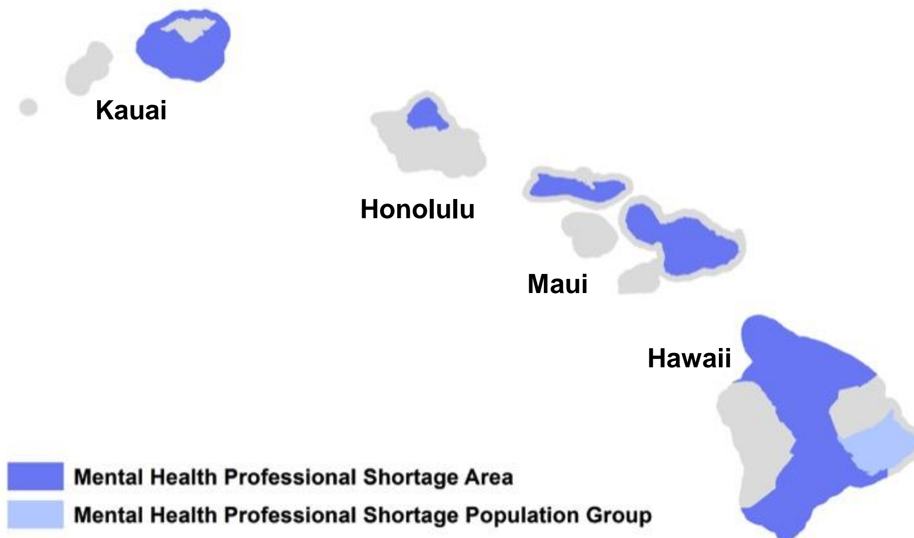
Race/ethnic groups: There is evidence of high race/ethnic disparity for two quantitative measures in the area of access to health services. The largest disparity is for percentage of adults who report not seeing a doctor in the past 12 months due to cost in 2013, where the Pacific Islander group has a rate that is over two times as high as the overall population in the state.

6.1.2 Mental Health

Access to services

Only 54.6% of adults with serious mental illness received treatment in 2012-2013, indicating that there are barriers to accessing treatment. In addition, several key informants commented that mental health is under-resourced, especially for children and on the Neighbor Islands. HRSA has designated at least part of each Hawaii county as a Mental Health HPSA, as seen in Figure 6.6.

Figure 6.6: Mental Health Professional Shortage Areas



Integration with primary care

Several key informants voiced the need to integrate mental health services with primary care. One elaborated that primary care services are not effectively identifying and addressing mental health issues. High hospitalization rates in mental health, as further discussed in Section 6.4.1, also suggests insufficient access to mental health services, supporting key informant testimony.

Highly impacted populations

Children, teens, and adolescents: Key informants noted that mental health services are especially limited and lacking for children.

Low-income population: Mental health services for the low-income population are also under-resourced. As one key informant cited, challenges include connecting MedQuest institutionally to behavioral health expertise and improved reimbursement policies in hospitals.

Mental health issues are ignored until they are big problems

COFA migrants: According to a key informant, COFA migrants experience greater mental health needs. In particular, Micronesians have a particularly high suicide rate, but have extremely limited access to mental health care in the state of Hawaii.

6.1.3 Oral Health

Access to services

According to key informants, there is a particular gap in oral healthcare coverage in adults; most adults do not have dental insurance. Furthermore, Medicaid only covers emergency oral health services and Medicare does not cover dental care at all.

Key informants also voiced their concern over the lack of dental service providers, particularly in rural areas, on the Neighbor Islands, and those serving children. HRSA has designated areas where there are 5,000 or more individuals per dentist as Dental HPSAs.[10] By these criteria, areas of East and Upcountry Maui emerge as Dental HPSAs, as seen in the map in Figure 6.7. The rural geographies of Honolulu county are also distinguished as a Dental HPSA for the low-income population, where access barriers prevent this population group from use of the area's dentists.

Figure 6.7: Dental Health Professional Shortage Areas

Prevention and integration with healthcare

Several key informants lamented the lack of prevention efforts in oral health, from community water fluoridation to school-based oral health programming for children. Key informants also suggested that oral healthcare should be integrated into the continuum of healthcare, rather than thought of separately, as it is in the status quo.

It's a tragedy we don't have community water fluoridation

[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

Children, teens, and adolescents: According to the 2011 Pew Center on the States report on children's dental health, Hawaii meets only one out of eight policy benchmarks aimed at improving children's oral health, resulting in a score of F (on a scale of A-F) and making Hawaii one of the worst overall performers across the nation.[11] Both key informants and Pew identified community water fluoridation, school-based oral health programs for fluoride treatment and sealants, and tracking children's oral health data as areas of need. Key informants also recognized provider shortage as particularly severe for children's oral health providers, and a few suggested that general pediatric care could cover oral health as well.

Dentists deliberately stay out of Medicare and Medicaid as much as possible

6.1.4 Economy

Poverty

Poverty is one of several social and economic determinants of health, and correlates with poor access to care, especially in terms of health insurance coverage and medication affordability.

Resource problems within healthcare institutions

As one key informant acknowledged, health systems are financially challenged to maintain services. Healthcare is a complex industry, and financing it is hard for both those who seek care and those who give care.

Highly impacted populations

Homeless individuals: For the homeless, the emergency room is used to fulfill basic primary care and survival needs, such as shower and shelter, rather than emergency care.

COFA migrants: Key informants voiced their concern for the COFA migrants in particular, noting that this group has many health needs due to socioeconomically disadvantaged status, and encounter significant barriers to accessing care, including inadequate healthcare coverage, stigma, and discrimination.

[11]The Pew Center on the States. (2011). *The State of Children's Dental Health: Making Coverage Matter*. Retrieved from http://www.pewtrusts.org/~/media/legacy/uploadedfiles/pcs_assets/2011/TheStateofChildrensDentalhealthpdf.pdf

6.2 Chronic Diseases

Key issues

- **Poor diet and physical activity, coupled with low access to healthy food**
- **High diabetes burden and poor preventative care, management, and education**
- **High cholesterol is prevalent**
- **High rates of chronic kidney disease and end-stage renal disease**

Opportunities and strengths	
Need more advocacy to mandate policy changes surrounding sugars, sweets, beverages, and trans fats	Need to ban advertising for unhealthy eating and beverages
Should educate people on healthy living and lifestyles	There are community-based efforts to educate families and people in their workplaces about diabetes
Opportunity to increase training and support for caregivers of people with diabetes	

6.2.1 Exercise, Nutrition & Weight

Nutrition and access to healthy foods

Many Hawaii residents do not receive proper nutrition and are affected by food insecurity. 18.1% of adults ate five or more servings of fruits and vegetables daily, and 23.1% of adults ate less than one serving of vegetables per day in 2013. In 2012, 19.2% of households experienced food insecurity at some point during the year. Since 2012, no statewide policies have been enacted to decrease access to unhealthy food or drink, or to increase access to healthy food.

There is a lack of access to fresh fruits and vegetables

Highly impacted populations

Children, teens, and adolescents: In 2012, 23.9% of children lived in households that experienced food insecurity at some point during the year, and 1.4% experienced very low food security, compared to the Healthy People 2020 target of 0.2%. In addition, only 15.6% of high school students ate the recommended number of servings of fruits and vegetables daily in 2013.

Most high school aged adolescents in Hawaii did not engage in sufficient physical activity, as shown in Table 6.5. The percentage of teens who attended daily physical education was much lower than the nation overall and was far from meeting the Healthy People 2020 target. Guidelines for aerobic activity are at least 60 minutes daily for the past week, and for muscle-strengthening, activity three days a week.

Table 6.5: Physical Activity Among Adolescents

Percentage of teens in 2013 Teens who:	Hawaii	US	HP2020
Attend daily physical education	7.3%	29.4%	36.6%
Meet aerobic physical activity guidelines	22.0%	27.1%	31.6%
Meet muscle-strengthening guidelines	46.3%	51.7%	

COFA migrants: A key informant noted Micronesians experience high levels of obesity, in addition to other chronic diseases.

Race/ethnic groups: As shown in Table 6.6, obesity prevalence in adults and teens is highest among Other Pacific Islanders and Native Hawaiians.

Table 6.7 shows that multiracial children experienced the most food insecurity in 2012. Households that were disproportionately food insecure were also multiracial, as well as Native Hawaiian or Pacific Islander.

Table 6.6: Obesity Prevalence

Obesity, 2013	Adults	Teens
Hawaii	21.8%	13.4%
Black	31.0%	
Chinese	8.7%	
Filipino	16.9%	13.8%
Japanese	14.4%	7.6%
Native Hawaiian	39.0%	19.3%
Other Asian	11.9%	6.0%
Other Pacific Islanders	57.4%	31.2%
Other	30.2%	12.2 %
White	20.6%	7.2%

Table 6.7: Food Insecurity

Food insecurity, 2012	Hawaii	White	Asian	Nat. Hawaiian/ Pac. Islander	Two or More Races
Children	1.4%		1.3%		3.8%
Households	19.2%	10.5%	9.8%	45.8%	31.0%

6.2.2 Diabetes

Diabetes awareness and prevention

People with pre-diabetes will develop diabetes unless they change their lifestyle and eating habits. According to one key informant, the greatest needs in this area are prevention and detection because many people in Hawaii are unaware they are diabetic or pre-diabetic.

Hawaii has an estimated 107,000 people with diabetes, many who don't know they have it

Diabetes management

In 2013, only 46.9% of adult diabetics in Hawaii took a course in diabetes self-management, failing to meet the Healthy People 2020 target of 62.5%.

A crucial part of managing diabetes is testing, as controlling blood glucose levels helps delay diabetic problems, such as eye disease, kidney disease, and nerve damage. The glycosylated hemoglobin (HbA1C, or A1c) test allows health providers to see how well blood glucose levels were controlled in the previous few months. As shown in Table 6.8, diabetics in Hawaii did not meet the Healthy People 2020 targets for multiple tests in 2013; the percentage of diabetics who test their blood glucose daily falls especially short.

Table 6.8: Diabetes Management

Percentage of diabetics in 2013 Who:	Hawaii	HP2020
Test their blood glucose daily	50.7%	70.4%
Have their feet checked during the year	71.6%	74.8%
Have a biannual HbA1c check	67.7%	71.1%

Poor diabetes management is linked to poor outcomes, and in 2013, 40.1% of diabetics in Hawaii had an A1c value over 9%, compared to the Healthy People 2020 target of 16.1%. Additionally, 262.6 per 1,000,000 population had kidney failure due to diabetes in 2011, which is far from meeting the Healthy People 2020 target of 150.6 per 100,000 population.

According to one key informant, doctors are not always up-to-date on new advances in diabetes, and hospitals may discharge patients without providing them or their families with adequate training on diabetes management. In the broader community, many people are unaware that diabetes is a protected class under the Americans with Disabilities Act. A key informant noted workplaces and school systems are rarely knowledgeable about the needs of their employees and students with diabetes.

Comorbidity

Depression: A key informant noted that there is a direct link between diabetes and depression, which can lead to noncompliance in medication, self-harm, amputation, and even death from a diabetic coma. Young adults with Type 1 diabetes in particular may fail to take proper care of themselves, and experience a high rate of suicide in Hawaii.

Oral health: A key informant explained that oral health is a unique need for diabetics due to numb nerve-endings and the potential for undiagnosed abscesses. Quarterly trips to the dentist can help diabetics keep their teeth and prevent unnecessary oral surgery.

Highly impacted populations

Children, teens, and adolescents: According to a key informant, diabetes and other chronic health issues are becoming more common in children. Hawaii has an increasing number of children diagnosed with diabetes – this includes Type 2 diabetes in children as young as 2 years old.

Several ethnic groups are predisposed to diabetes - Native Hawaiians, Japanese, Filipino, Chinese and Pacific Islanders - but the reason for this is unknown

Older adults: In 2012, 27.2% of Hawaii's Medicare beneficiaries were treated for diabetes. It is unprecedented for people to live with diabetes for as long as they do now, and, according to a key informant, this is increasing healthcare costs. Despite this trend, caregiver training and support systems for elders with diabetes do not yet exist.

Rural communities: According to a key informant, diabetes is intergenerational and especially challenging to manage for low-income and rural populations due to low access to nutritious food.

Homeless individuals: A key informant noted homeless shelters in particular present a problem for diabetics when the only food available is bread and juice.

COFA migrants: One key informant linked a heavy burden of diabetes in the Micronesian migrant community to limited capacity for diabetes management in Micronesia. The migrants' low-income status and poor access to care and healthy foods compound their health problems.

Race/ethnic groups: As shown in Table 6.9, Native Hawaiians or Other Pacific Islanders have the highest age-adjusted death rate due to diabetes.

Table 6.9: Death Rate due to Diabetes

	Hawaii	White	Asian	Native Hawaiian/ Pacific Islander
Death rate due to Diabetes, 2013*	15.4	9.4	11.6	82.0

*per 100,000 population

6.2.3 Heart Disease & Stroke

Prevention and education

Recognizing the early signs and symptoms of a stroke or heart attack and responding quickly is imperative to preventing disability and death. More Hawaii residents identified the early warning signs for a stroke than for a heart attack. However, awareness for neither condition met the Healthy People 2020 target.

Table 6.10: Awareness of Heart Attack and Stroke Symptoms

Heart attack and stroke awareness, 2009	Hawaii	HP2020
Heart attack		
Early symptoms	30.4%	43.6%
Early symptoms and calling 911	27.7%	40.9%
Stroke		
Early symptoms	41.8%	59.3%
Early symptoms and calling 911	37.5%	56.4%

High cholesterol

High blood cholesterol is a major risk factor for heart disease. Over one in three adults who had their cholesterol checked were told it was high. Neither this nor the percentage of adults who had their cholesterol tested met the Healthy People 2020 targets. In 2012, 54.0% of Medicare beneficiaries in Hawaii were treated for hyperlipidemia (high cholesterol and triglycerides), compared to 44.8% of beneficiaries nationwide.

Table 6.11: High Cholesterol Awareness and Prevalence

Percentage of adults in 2013 Who had:	Hawaii	HP2020
Cholesterol checked in the past 5 years	75.8%	82.1%
High cholesterol	34.9%	13.5%

Rehabilitation

Cardiac rehabilitation consists of exercise and education designed to help individuals recover, prevent or reduce heart problems, and improve quality of life. Referral rates for heart attack and stroke survivors to outpatient rehabilitation were lower in Hawaii than in the nation overall.

Table 6.12: Cardiac Rehabilitation Referral Rates

Referral rates to outpatient rehabilitation, 2013	Hawaii	U.S.
Stroke	23.5%	30.7%
Heart attack	19.1%	34.7%

Highly impacted populations

COFA migrants: A key informant noted Micronesians experience high levels of heart disease among other chronic diseases.

Race/ethnic groups: Native Hawaiians or Other Pacific Islanders have the highest death rates due to stroke and heart disease. This population has a death rate over three times higher than Hawaii's overall population for heart disease, and nearly three times higher for stroke.

Table 6.13: Death Rates due to Heart Disease and Stroke

Death rate, 2013*	Hawaii	Black	White	Asian	Am. Indian/ Alaska Nat.	Nat. Hawaiian/ Pac. Islander	Other
Heart disease	68.9	40.0	64.6	57.1	259.1	252.5	14.2
Stroke	33.6		31.2	33.6		92.3	5.0

*per 100,000 population

6.2.4 Renal Disease

Chronic kidney disease and end-stage renal disease are more prevalent in Hawaii than in the U.S. 3.2% of adults in Hawaii had kidney disease (not including kidney stones, bladder infection, or incontinence), compared to 2.5% of the nation in 2013.

Lack of dialysis care results in poorer health, inability to work, and increases poverty

Once chronic kidney disease progresses to end-stage renal disease (ESRD), kidney transplants or dialysis are necessary for survival. In 2011, Hawaii had 419.7 cases of ESRD per 1,000,000 population, which is far from meeting the Healthy People 2020 target of 344.3 ESRD cases per 1,000,000.

Highly impacted populations

COFA migrants: According to a key informant, there is a proposal to cut Micronesians off from dialysis care. Lack of dialysis care results in poorer health and the inability to work, and increases poverty.

6.2.5 Cancer

Incidence and death rates

Several cancers emerged in the analysis as areas of need for the state of Hawaii. The incidence rates for breast, colorectal, and liver and bile duct cancer were worse compared to the national value and other states in 2007-2011. In addition, the oropharyngeal cancer death rate was higher for Hawaii at 2.6 deaths per 100,000 population in 2011-2013 than the nation (2.5 deaths/100,000 population) and is short of meeting the Healthy People 2020 target. Cervical cancer death rates and prevention through pap tests are also areas for improvement, as discussed in Section 6.5.3.

Highly impacted populations

Race/ethnic groups: Several cancer mortality indicators had high index of disparity values, and the Native Hawaiian/Pacific Islander group typically emerged as the group faring most poorly, with death rates ranging from 2-5 times higher than the overall Hawaii rates. A notable exception is the melanoma cancer death rate, where the White subpopulation fared most poorly of the race/ethnic groups available for comparison. In contrast, the Asian group consistently performed better than the state.

Table 6.14: Death Rates due to Cancer

Cancer Death Rate*	Hawaii	White	Asian	Native Hawaiian / Pacific Islander
Breast, 2013	15.1	14.9	10.7	65.9
Cervical, 2011-2013	2.3	1.7	2.0	11.2
Melanoma, 2009-2013	1.5	3.9	0.5	3.3
Prostate, 2013	12.0	12.8	9.8	34.6

*per 100,000 population

A closer look at other data related to skin cancers reveals that the White population is most highly impacted by skin cancer, though the American Indian/Alaskan Native subpopulation has the highest rate of Sunburns Among Adults.

Table 6.15: Skin Cancer-Related Indicators

	Hawaii value	Highly impacted groups
Melanoma Cancer Prevalence, 2013	4.7%	White (11.3%)
Melanoma Incidence Rate, 2007-2011	20.0 cases/100,000 population	White (62.8 cases/100,000 population)
Sunburns Among Adults, 2012	19.0%	American Indian / Alaskan Native (42.1%) Native Hawaiian (21.4%) Other (25.3%) Other Pacific Islander (20.0%) White (28.9%)

6.3 Environmental Health

Key issues

- **Poor indoor and outdoor air quality due to active volcanoes and secondhand smoke**
- **Asthma, especially among children under five**
- **Tuberculosis incidence**

6.3.1 Environment

Air quality

Air quality, which impacts respiratory health, is an area of particular concern in the state of Hawaii due to sulfur dioxide production by active volcanoes and secondhand smoke exposure. In 2013, there were 254 days of unsatisfactory air quality in any region of Hawaii.

Secondhand smoke

Only 80.6% of homes in the state were smoke free in 2012, and only 69.8% of employees over 18 who work indoors worked where worksite policies prohibit smoking in 2010-2011. In addition, a high percentage of teens (85.9%) were exposed to secondhand smoke in 2013.

6.3.2 Respiratory Diseases

Asthma

Asthma is an issue in the general population. There was a high death rate due to asthma in 2013. It is particularly problematic for the children's population. 12.8% of children had asthma in 2013, and the state of Hawaii did not meet Healthy People 2020 targets for reducing emergency department visits (2011) and hospitalizations (2012) due to asthma among children under five.

Tuberculosis

There were 8.6 incident cases of tuberculosis per 100,000 population in 2012 in the State of Hawaii, which was over twice as high compared to the U.S. value of 3.2. Tuberculosis is a greater problem in Hawaii's foreign-born population, with 37.4 incident cases per 100,000 population in 2011, in contrast with 17.2 for the foreign-born population in the U.S. overall.

Highly impacted populations

Race/ethnic groups: Respiratory-related issues impact the Native Hawaiian/Pacific Islander group the most, where the overall death rate due to asthma is over four times as high for this group than for Hawaii overall.

Table 6.16: Death Rates due to Asthma and COPD

Death Rate*	Hawaii	White	Asian	Nat. Hawaiian/ Pac. Islander
Asthma, 2013	1.4		0.8	6.4
Asthma 35-64, 2009-2013	14.3	11.6	7.8	75.0
Asthma 65+, 2009-2013	49.1	29.7	54.3	150.3
COPD 45+, 2013	42.1	56.2	32.9	105.5

*per 100,000 population

6.4 Mental Health & Health Risk Behaviors

Key Issues

- **High mental health burden and poor preventative care**
- **Poor access to substance abuse services**
- **Insufficient sleep and excessive screen time**
- **Avoidable injuries and deaths through safer behaviors**
- **Poor condom use among teens and low vaccination coverage among adults**

Opportunities and strengths	
Should provide training to police to better assist mental health patients	Need to build community capacity and change policies to better serve residents dealing with substance abuse and mental health issues
Children with insurance have access to well-care visits and timely vaccinations	Find ways to share prevention message across cultural differences
There is a good program in schools to reach children who have not been vaccinated	

6.4.1 Mental Health & Mental Disorders

Prevalence of poor mental health

Poor access to mental health care in Hawaii worsens the burden of depression for residents. In 2012-2013, 7.9% of adults experienced a major depressive episode, but only 38.2% of these adults received treatment. See Section 6.1.2 for more information on access to mental health care in Hawaii.

Mental health is a frequent cause for hospitalization: according to data provided by Hawaii Health Information Corporation, 5,180 admissions across the state in 2011 were primarily attributed to mental health. Compared to the population make-up, these admissions were disproportionately male, 18-64 years of age, or white or other race.

Table 6.17: Hospitalizations due to Mental Health

	Percent of Mental Health Admissions, 2011	Percent of Population 18+
Gender		
Male	60%	50%
Female	40%	50%
Age Group		
18-64 years	92%	82%
65+ years	8%	18%
Race		
White	40%	24%
Hawaiian	14%	19%
Filipino	6%	16%
Japanese	7%	24%
Other	34%	18%

Data provided by Hawaii Health Information Corporation, December 2012

Prevention and screening

Although many key informants agree that mental health services would be best delivered through integration with primary care, currently healthcare providers are not effectively identifying and addressing mental health issues. Suggestions from key informants for improved preventative care include co-location of primary care and mental health services, and using telehealth and telepsychiatry to provide services to hard-to-reach populations.

Highly impacted populations

Chronic disease patients: Key informants noted that there is a two-way relationship between mental health and physical health, with increasing evidence that people with chronic disease are more likely to become depressed, and that depression contributes to a lack of motivation to practice healthy behaviors.

Children, teens, and adolescents: 10.6% of adolescents experienced a major depressive episode in 2012-2013. Concerns for teens also include cyber-bullying and eating disorders.

Homeless individuals: Mental illness is a driving factor behind increasing rates of homelessness in Hawaii, and this population often utilizes the emergency room for mental health issues that could be treated through regular, preventative mental health care.

Race/ethnic groups: There is evidence of high race/ethnic disparity for three quantitative measures in the area of mental health. The largest disparity is for the suicide death rate, where the Native Hawaiian / Pacific Islander group has a rate that is nearly three times higher than the overall population in the state.

Table 6.18: Highly Impacted Populations, Mental Health

	Hawaii value	Highly impacted groups
Suicide Death Rate, 2013	10.9 deaths/ 100,000 pop.	Native Hawaiian/Pacific Islander (31.2) Black/African American (24.8) White (15.3)
Depression: Medicare Population, 2012	7.4%	American Indian/Alaskan Native (17.8) Non-Hispanic White (11.6) Black/African American (8.7)
Adults who Experience Major Depressive Episodes, 2012-2013	7.9%	Black (20.0) Native Hawaiian (8.8)

6.4.2 Substance Abuse

Alcohol, tobacco, and illicit drug use

For most quantitative indicators of substance abuse, Hawaii residents reported lower rates compared to the U.S. However, rates of illicit drug use among adults and e-cigarette use among teens compare poorly to the nation. In June 2015, Hawaii raised the smoking age to 21,

becoming the first U.S. state to do so.[12]

Table 6.19: Self-Reported Rates of Substance Abuse

Self-reported Rates of Substance Abuse, 2013	Hawaii	U.S.
Binge Drinking		
Adults	18.3%	26.9%
Teens (males)	10.6%	22.0%
Teens (females)	12.9%	19.6%
Cigarette Smoking		
Adults	13.3%	19.0%
Teens (grades 9-12)	10.4%	15.7%
Young teens (grades 6-8)	5.2%	
E-cigarette Use		
Teens (grades 9-12)	10.0%	4.5%
Young teens (grades 6-8)	5.5%	1.1%
Marijuana Use		
Teens (grades 9-12)	18.9%	23.4%
Young teens (grades 6-8)	7.5%	
Illicit Drug Use, 2012-2013		
Adults	10.3%	9.3%

Access to treatment

Hawaii residents with substance abuse problems have limited access to treatment. In 2012-2013, only 3.5% of residents aged 12 and older who needed illicit drug and/or alcohol services actually received treatment. Multiple key informants recognized that there is a lack of substance abuse services in Hawaii, with one describing services as fragmented and slow to respond.

Alcohol-related traffic injuries and deaths

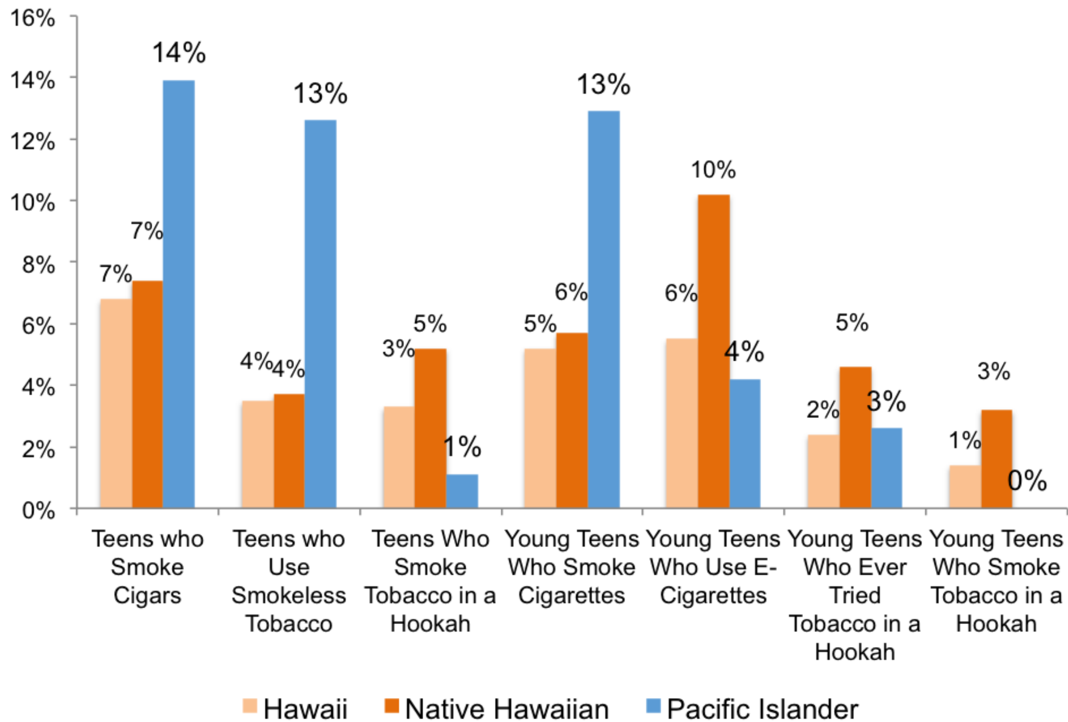
In addition to the negative health effects of alcohol abuse, many traffic injuries and deaths are alcohol-related in Hawaii. In 2012, 5.9% of adults reported having driven a vehicle after consuming excessive alcohol, and in 2008-2012, 41.6% of all motor vehicle crash deaths involved alcohol.

Highly impacted populations

Race/ethnic groups: There is evidence of high race/ethnic disparity for many quantitative measures, including seven indicators of teen tobacco use for which either Native Hawaiian or Pacific Islander teens had the highest rates of tobacco use.

[12] 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

Figure 6.8: Substance Abuse Among Native Hawaiian and Pacific Islander Teens



Among adults there are large race/ethnicity disparities in drug use rates, treatment rates, and drug-induced death rates.

Table 6.20: Substance Abuse Among Adults

Adult Substance Abuse Indicators	Hawaii value	Highly impacted groups
Adults Who Use Illicit Drugs, 2012-2013	10.3%	Black (28.9) Native Hawaiian (15.2) White (12.9) Native American / Alaskan Native (11.9)
Nonmedical Use of Stimulants, 2012-2013	1.6%	Native American / Alaskan Native (3.8) Native Hawaiian (1.9)
Received Treatment for Illicit Drug or Alcohol Use, 2012-2013	3.5%	Native Hawaiian (11.8) Asian (6.4) White (3.8)
Drug-Induced Deaths, 2013	10.6 deaths / 100,000 population	Native Hawaiian or Other Pacific Islander (26.9) White (14.6)

6.4.3 Wellness & Lifestyle

Sleep patterns and screen time

In 2013, only 58.5% of adults and 26.8% of teens in Hawaii reported that they get 7 or more hours of sleep on average. As a result of insufficient sleep, these residents may be at higher risk of chronic disease and depression. Many teens in Hawaii are also engaging in excessive screen time, with 42.1% of teens reporting playing video games or using a computer for more than three hours per day in 2013.

6.4.4 Prevention & Safety

Unintentional injuries

Many accidental deaths could be averted through behavioral change or improved safety education in Hawaii. Healthy People 2020 targets for the rate of pedestrian deaths and nonfatal pedestrian injuries are unmet in Hawaii. Key informants described a need for a cultural shift towards practicing safer behaviors, and the lack of safe practices is evident in several quantitative indicators. In 2013, 43.3% of teens reported texting or emailing while driving, and in 2009 37.1% rode with a driver who had been drinking.

We should increase the understanding that injuries are preventable and a legitimate concern for public health attention

Domestic violence

Domestic violence can inflict physical and long-lasting psychological injury. In Hawaii, 9.5% of adults reported in 2013 that they had experienced physical abuse from a current or former intimate partner, and 3.6% experienced sexual abuse.

Highly impacted populations

Race/ethnic groups: High disparities by race/ethnicity are evident for many injury-related indicators. Groups that frequently have the highest mortality rates due to injury are Native Alaskan/American Indian and Native Hawaiian or Other Pacific Islanders.

Table 6.21: Highly Impacted Populations, Prevention and Safety

Injury-related Death Rates (deaths/100,000 population)	Hawaii value	Highly impacted groups
Injury Death Rate, 2013	42.4	Native Alaskan/American Indian (129.7) Native Hawaiian or Other Pacific Islander (116.6) White (51.0)
Unintentional Injury Death Rate, 2013	27.5	Native Alaskan/American Indian (84.4) Native Hawaiian or Other Pacific Islander (75.1) White (29.9)

Injury-related Death Rates (deaths/100,000 population)	Hawaii value	Highly impacted groups
Poisoning Death Rate, 2013	10.8	Native Hawaiian or Other Pacific Islander (26.3) White (15.8)
Motor Vehicle Collision Death Rate, 2012	8.6	Native Hawaiian or Other Pacific Islander (32.2)
Firearm-Related Death Rate, 2013	2.4	Native Hawaiian or Other Pacific Islander (7.6) White (3.9)
Drowning Death Rate, 2013	2.0	Native Hawaiian or Other Pacific Islander (5.1)
Homicide Death Rate, 2011-2013	1.7	Native Hawaiian or Other Pacific Islander (8.3)
Unintentional Suffocation Death Rate, 2011-2013	1.6	Native Hawaiian or Other Pacific Islander (3.7)

6.4.5 Immunizations & Infectious Diseases

Safe sex behaviors

Sexually transmitted infections can be controlled through the use of condoms, but in 2013 only 53.5% of males and 41.5% of females in grades 9-12 who had sex reported using condoms. The rate of chlamydia incidence among women in Hawaii (649.9 cases per 100,000 women) is much higher than the national average of 456.7 cases per 100,000 women.

Vaccine-preventable disease

Hawaii is very far from meeting Healthy People 2020 targets for influenza and pneumonia vaccination among adults.

Table 6.22: Vaccination Rates among Adults

Rates of vaccination, 2013	Hawaii	Healthy People 2020 Target
Influenza		
Adults 18-64	40.3%	80%
Adults 65+	69.9%	90%
Pneumonia		
Adults 65+	68.2%	90%

6.5 Women's, Infant, & Reproductive Health

Key Issues

- **Substance abuse in pregnant women**
- **Poor birth outcomes among Black mothers and infants**
- **Low condom usage among both male and female adolescents**

6.5.1 Maternal, Fetal, & Infant Health

Poor birth outcomes

Very early preterm births (less than 32 weeks of gestation) made up 2.3% of total births to resident mothers in Hawaii in 2013, compared to just 1.9% nationally. The percent of low birth weight births in the State is higher than both the national average and the HP2020 target. Additionally, both neonatal (within first 28 days of life) and infant (within first year of life) mortality rates in Hawaii are above national rates.

While Hawaii is close to meeting many of its 2018 Title V-related Maternal and Child Health goals,[13] it must still close sizable gaps in the percent of pregnant women who begin receiving prenatal care in the first trimester, and the percent of very low birth weight infants delivered at facilities for high-risk deliveries and neonates. Postpartum, the percentage of infants receiving formula supplementation within the first two days of life fail to meet the Healthy People 2020 target and is slightly higher than the national average (19.6% vs. 19.4%). The percent of newborns screened for hearing loss is high in Hawaii (98.8%), but the prevalence of hearing loss is also high: Hawaii had the highest rate in the nation as of 2008, at 3.7 cases per 1,000 newborns screened, which is over three times the national rate (1.2 cases per 1,000 newborns screened).[14]

There are negative and potentially long-term impacts of maternal substance abuse on outcomes for children

Substance abuse among pregnant women

A key informant linked poor child health outcomes to substance abuse among pregnant women in Hawaii. Quantitative data also reflects the problem of drinking during pregnancy, with the percent of pregnant women abstaining from binge drinking (92.2% vs. 95.8% in the U.S.) failing to meet the Healthy People 2020 target.

A high percentage of pregnant women on Hawaii Island are abusing substances – smoking, drinking, and using illegal substances

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[13] The Maternal and Child Health Federal-State Partnership, Health Resources and Services Administration. (2013). *Maternal and Child Health (MCH) Measures*. Retrieved from: https://mchdata.hrsa.gov/TVISReports/Snapshot/SnapShot.aspx?statecode=HI

[14] 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

Highly impacted populations

Race/ethnic groups: Black neonatal and infant mortality rates are much higher than any other race/ethnicity, at more than triple the overall neonatal mortality rate and more than double the infant mortality rate.

Table 6.23: Neonatal and Infant Mortality Rates

2013 Rates by Race/Ethnicity	Neonatal Mortality Rate	Infant Mortality Rate
Overall	4.4	6.2
Black	15.8	15.8
White	4.0	5.7
Filipino	5.3	7.9
Native Hawaiian	4.4	5.8
Other Pacific Islander		5.4

6.5.2 Family Planning

Condom usage is much lower among adolescents in Hawaii than nationwide. Among adolescent males in public school grades 9-12 who had sex in the past month, only 53.5% (vs. 65.8% nationally) used a condom; among females, the value is even lower: 41.5% (vs. 53.1% nationally). Neither group meets the Healthy People 2020 targets of condom use. Delayed sexual initiation, as measured by abstinence from sex among teen boys (66.1%), teen girls (62.3%), and young teen boys (90.5%), also falls short of Healthy People 2020 targets.

Highly impacted populations

Race/ethnic groups: While the overall teen birth rate in Hawaii is lower than the national average, births to teen mothers of Native Hawaiian and Other Pacific Islander descent (123.7 births/1,000 women ages 15-19) occur at nearly five times the average state rate of 25.0 births/1,000 women ages 15-19. Births to mothers with fewer than 12 years of education were the highest among women of these race groups, at 10.4% for Native Hawaiians and 19.2% for Other Pacific Islanders.

6.5.3 Women's Health

As highlighted in Section 6.4.5, chlamydia rates are very high among women in Hawaii. Indicators of women's preventive care show that the State must improve in order to meet Healthy People 2020 targets, especially in regards to preventive services for older women and Pap smears among adult women ages 18-64. Hawaii also falls just short of meeting the Healthy People 2020 target for a related indicator, cervical cancer death rate. Incidence of breast cancer is also high in the State, at 126.0 cases/100,000 females, compared to 123.0 cases/100,000 females nationwide. Both cervical and breast cancers impact women of Native Hawaiian and Other Pacific Islander descent disproportionately, as previously discussed in Section 6.2.5.

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, and Adolescents

Key Issues

- **Children's access to care, particularly in Micronesian families**
- **Diabetes and asthma among children**
- **High adolescent attempted suicide rates, especially among Pacific Islander youth**
- **Excessive screen time and insufficient physical activity among teens**
- **Children's oral health**
- **Low condom use among both teen boys and girls**

Opportunities and strengths	
Need to provide training to parents of children newly diagnosed with diabetes	Improve school accommodations for children with diabetes
There are opportunities to bring healthcare into schools	Need for better oral health tracking system for children
Chance for Departments of Health and Education to provide dental services in schools	

7.1.1 Access to Care

Only 65.2% of teens and 46.0% of young teens received a physical in the past year, short of the Healthy People 2020 target of 75.6% for both groups.

Key informants discussed several key challenges in children's access to care. Language is a major barrier for many families in the State. Particularly vulnerable are children whose parents work multiple jobs, have no childcare options, and are low-income. Micronesian families were identified as especially difficult to reach; one informant called on other community members to assist in connecting with them. Another key informant identified vaccination as a major access to care issue, with more resources needed to help parents who do not have the means to vaccinate their children against common diseases. One informant indicated that while some schools are better equipped to serve students' health needs than others, schools overall need more support to provide care for students; relying on principals and health aides is not enough.

When kids attend school irregularly, it impacts the continuity of their education as well as their health care

7.1.2 Chronic Health Issues

> *School systems don't know how to accommodate children with diabetes – for example, providing snacks during tests, finger pricks before lunch, and knowing the warning signs of high or low insulin levels*

Diabetes and asthma: Diabetes and asthma are growing issues for children in the State of Hawaii. A key informant expressed concerns at the increasing diabetes prevalence, and at the lack of training and preparation for parents and schools to adequately care for children with diabetes. As seen in Section 6.3.2, asthma indicators for children in the state are poor. Another key informant reiterated the increasing frequency of chronic health conditions among students in schools, and echoed the call for more healthcare support in schools.

Wellness: Only about a quarter of teens in the state get sufficient sleep on school nights, compared to 31.7% nationally.

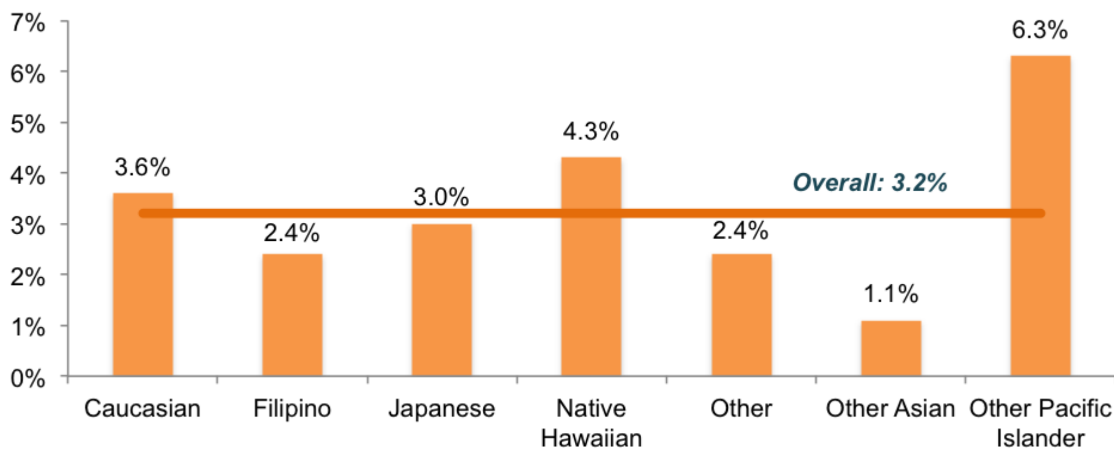
7.1.3 Health Education

Schools in Hawaii have not yet attained the subset of Healthy People 2020 goals to increase the percentage of public schools with health skills curricula to 100%.

7.1.4 Mental Health

Eating disorders, cyber-bullying, and higher rates of major depressive episodes are issues for Hawaii's teens (Section 6.1.2). Suicide attempts, which are closely tied to mental health issues, are higher among teens in the state than the national average. Attempted suicide is a particularly pressing health issue for teens of Pacific Islander descent, as seen in Figure 7.1.

Figure 7.1: Teens who Attempted Suicide by Race/Ethnicity, 2013



Key informants discussed the high prevalence of behavioral health issues among adolescents in Hawaii. One interviewee also linked some students' learning barriers to cuts in mental health budgets.

7.1.5 Mortality

Mortality rates for children of Native Hawaiian or Other Pacific Islander descent are very high: 607.7 deaths/100,000 children ages 0-4 and 34.1 deaths/100,000 children ages 5-9, compared to rates of 148.7 and 9.8, respectively, for children in the state overall. Death rates among Black or African American children ages 0-4 are nearly as high, at 535.4 deaths/100,000 children.

7.1.6 Nutrition and Physical Activity

As previously discussed, food insecurity affects a higher-than-average share of children in the State of Hawaii compared to the U.S. overall. Too few teens in the state get enough physical activity, and too many spend more than the recommended amount of time on the computer or playing video games (Section 6.2.1).

7.1.7 Oral Health

Multiple key informants highlighted children's oral health as a major concern in the state. Among the issues are the lack of infrastructure for tracking oral health data, limited school-based prevention programs, and dental professional shortages in many areas. One key informant mentioned that parents are often unclear on what options are available for their families, and another called on the Departments of Health and Education to provide fluoride and sealant services in schools.

Oral health is a challenge, especially for children

7.1.8 Substance Abuse and Substance-Free Environments

While teens in Hawaii use some substances at a lower rate than the nation (Section 6.4.2), e-cigarette experimentation and usage are particularly high. Overall adolescent usage of alcohol or illicit drugs is also above average (18.1% vs. 15.9% nationally). Substance use tends to be higher among teens of Native Hawaiian, Other Pacific Islander, and Caucasian descent. Additionally, a much larger proportion of teens in Hawaii reported riding with a driver who had been drinking, compared to the U.S. overall (Section 6.4.4).

The state falls short of meeting Healthy People 2020 substance-free environment targets, including smoke-free middle, junior high, and high schools, as well as limited teen and young teen exposure to secondhand smoke. Indicators of exposure to tobacco advertising are higher than Healthy People 2020 targets.

7.1.9 Teen Sexual Health

Condom use and abstinence from sex is low among both teen boys and girls in the state (Section 6.4.5). Among public high school students in 2013, 11.1% had experienced intimate partner violence in the past year, more than the nationwide average of 10.3%.

7.2 Older Adults

Key Issues

- **Multiple challenges in accessing care**
- **Lack of care coordination and support systems**
- **Chronic diseases including Alzheimer's, diabetes, asthma, and osteoporosis**

Opportunities and strengths	
Need more housing options for older adults discharged from hospitals to prevent homelessness	Redefine support services for older adults as healthcare services
Opportunities to develop more partnerships with the healthcare industry to implement evidence-based programs in healthy aging	Use caregiver assessments to provide better support for caregivers

7.2.1 Access to Care

Older Hawaii residents face healthcare challenges such as high medical costs and limited health literacy. Difficulty in accessing care may contribute to many elderly in Hawaii not being up to date on a core set of clinical preventive services. In 2013, the influenza and pneumonia vaccination rates among adults 65+ were 69.9% and 68.2%, respectively.

Caregivers are the backbone of long-term care and support

Support systems: According to key informant expertise, multi-generational living in Hawaii is a hidden system of long-term care, which is susceptible to change. Multiple key informants stressed the need to support caregivers for Hawaii's growing elderly population.

Continuity of care: Key informants noted the lack of coordination for healthcare services and nonmedical needs for older adults. Support services include home risk assessment, fall prevention, nutrition education, Medicare outreach and enrollment, caregiver support, and transportation.

Insurance companies do not treat post-care and follow-up work as part of their scope of service

End-of-life care: A key informant observed that physicians and caregivers find conversations about end-of-life options difficult. As a result, elderly in Hawaii receive unwarranted care and die in hospitals rather than where they would prefer.

7.2.2 Chronic Diseases

Older adults in Hawaii struggle with high rates for both emergency department visits and deaths due to asthma. Neither rate is near its Healthy People 2020 target, as shown in Table 7.1.

Table 7.1: Rates of ED Visits and Deaths due to Asthma in Older Adults

Asthma rates in population 65+	Hawaii	HP2020
ED visits, 2011 (per 10,000)	30.0	13.7
Deaths, 2009-2013 (per 1,000,000)	49.1	21.5

Diabetes and kidney disease are also areas of concern for this subpopulation, as evidenced by high Medicare utilization in 2012 for these respective chronic health issues. Osteoporosis is another health need for older adults, disproportionately affecting Asian or Pacific Islanders.

Table 7.2: Osteoporosis in Medicare Population

	Hawaii	Black	White	Asian or Pac. Islander	Hispanic
Osteoporosis among Medicare Beneficiaries, 2012[15]	8.4%	2.2%	5.3%	10.7%	5.1%

7.3 Low-Income Population

Many key informants identified poverty as a major contributor to poor health outcomes. One key informant observed that lower levels of income and education were correlated with a higher burden of health issues. Low-income residents experience substantial challenges in accessing care—especially mental health services—and the resources needed for a healthy lifestyle, such as nutritious foods. A key informant indicated that low Medicaid reimbursement rates contribute to physician shortages across the state. Some low-income communities do not have access to any providers who accept Medicaid.

7.4 Rural Communities

Opportunities and strengths
Telehealth can improve access to services for residents of remote areas

Key informants noted that rural communities are often also lower-income. Limited access to healthy foods in these areas increases the incidence of obesity and diabetes among residents. Few providers in remote areas mean these communities have limited health, mental health, and dental services. However, one key informant saw telehealth as a promising option for improving access to care in these communities.

7.5 People with Disabilities

Key issues

- **More complete care**
- **Employment and housing**
- **Children with developmental disabilities**

In 2013, 18.4% of adults had a disability in the state of Hawaii, compared to 10.8% in the United States. Common causes of disability range from medical, including arthritis, back pain, heart disease, cancer, depression, and diabetes, to developmental, such as Down syndrome, attention-deficit/hyperactivity disorder, and autism spectrum disorder.

[15] Centers for Medicare & Medicaid Services

Access to Care

There is a need for improved continuity of care for individuals with disabilities and other special health care needs. As previously discussed, a low percent of youth ages 12-17 with special health care needs were encouraged by their doctors to increase self-care responsibilities and had discussed continuity of care with them. Key informants in the community also observed that the service system for people with disabilities is fragmented and called for expanding coverage to home and community-based services.

Economy

According to the American Community Survey,[16] 23.4% of persons with disabilities aged 20-64 were living in poverty in 2013. Individuals with disabilities tend to experience a higher unemployment rate than those without disabilities. In 2012, 29.0% of persons with disabilities aged 16-64 were employed, and 10.7% were currently unemployed and looking for a job. Employment affects financial status, increases community involvement and sense of independence, and can improve access to health care. Key informants also described housing and employment as main needs for this population. Disabilities can also limit an individual's ability to work. Of adults with arthritis, 31.1% reported that arthritis or joint symptoms affected their ability to work in 2013.

Developmental Disabilities

The state still must close some gaps in providing coordinated, ongoing, and community-based care to children with special health care needs in order to meet 2018 goals.[17] The number of children with Autism Spectrum Disorder (ASD) receiving Department of Education Special Education services increased from 960 in 2005 to 1,268 in 2009, possibly reflecting increased ASD awareness and screening.[18]

7.6 Homeless Individuals

Key issues

- **Affordable housing**
- **Mental health and substance abuse**
- **Basic primary care services and physical needs**
- **High emergency room utilization**

[16] American Community Survey. (2013). *Poverty Status in the Past 12 Months by Disability Status by Employment Status for the Population 20 to 64 Years.* Available from http://factfinder.census.gov
[17] The Maternal and Child Health Federal-State Partnership, Health Resources and Services Administration. (2013). *Maternal and Child Health (MCH) Measures*. Retrieved from: https://mchdata.hrsa.gov/TVISReports/Snapshot/SnapShot.aspx?statecode=HI
[18] 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

Opportunities and strengths
The Homeless Coalition is collaborating with the City, State, and Veterans Administration to address the needs of the homeless

According to the National Alliance to End Homelessness, 45.1 individuals per 10,000 population experienced homelessness in the state of Hawaii in 2013, which is nearly twice as high as the national rate (19.3 per 10,000 population).[19] According to key informants, areas of improvement for the homeless include affordable housing, basic primary care services, and mental health and substance abuse treatment.

We need to create pathways to housing for the mentally ill homeless

Although homelessness in the general population increased only by 1.4% from 2012 to 2013, individual chronic homelessness increased by 13.3% and veteran homelessness increased by 10.1%.[19] One key informant attributed the rise in homelessness to mental health issues and lack of affordable housing and recognized the older adult population as at risk for homeless if their rent is not paid when they are hospitalized. Key informants also observed the homeless population as high utilizers of the emergency room, which serves as shower and shelter and fulfills basic medical and dental care, rather than emergency services.

7.7 Compact of Free Association (COFA) Migrants

Key issues

- **Loss of healthcare coverage and high cultural and linguistic barriers**
- **High suicide rates**
- **High health needs in chronic diseases**

Opportunities and strengths
Community members can help in reaching Micronesian families

Access to Care

Key informants recognized that COFA migrants struggle with healthcare coverage and access to services, citing loss of federal medical coverage, the move to the Health Exchange, and poverty as the primary causes and aggravators of the problem.

Moving Compact of Free Association migrant adults to the Health Exchange is unlikely to be successful, leaving them uninsured and increasing costs

COFA migrants also face discrimination and stigma, in addition to cultural and language barriers, at hospitals and other health provider settings. Key informants recognized the need to improve outreach and engagement in a way that is culturally acceptable.

[19] National Alliance to End Homelessness. (2014). *The State of Homelessness in America 2014*. Retrieved from http://www.endhomelessness.org/library/entry/the-state-of-homelessness-2014

Chronic Diseases

Key informants noted that this group experiences high health needs in chronic diseases, including diabetes, obesity, cancer, and heart disease.

Mental Health and Health-Risk Behaviors

Mental health issues are significant for the COFA migrants. In particular, suicide rates are very high among the Micronesian population, and the problem is further impacted by poor access to mental health services and cultural barriers that make depression difficult to prevent and treat.

Compact of Free Association migrants face discrimination at community health centers

One key informant also noted that disease outbreak occurs in this group due to poor living conditions, such as pertussis outbreaks in those living off the grid with poor quality water and sanitation.

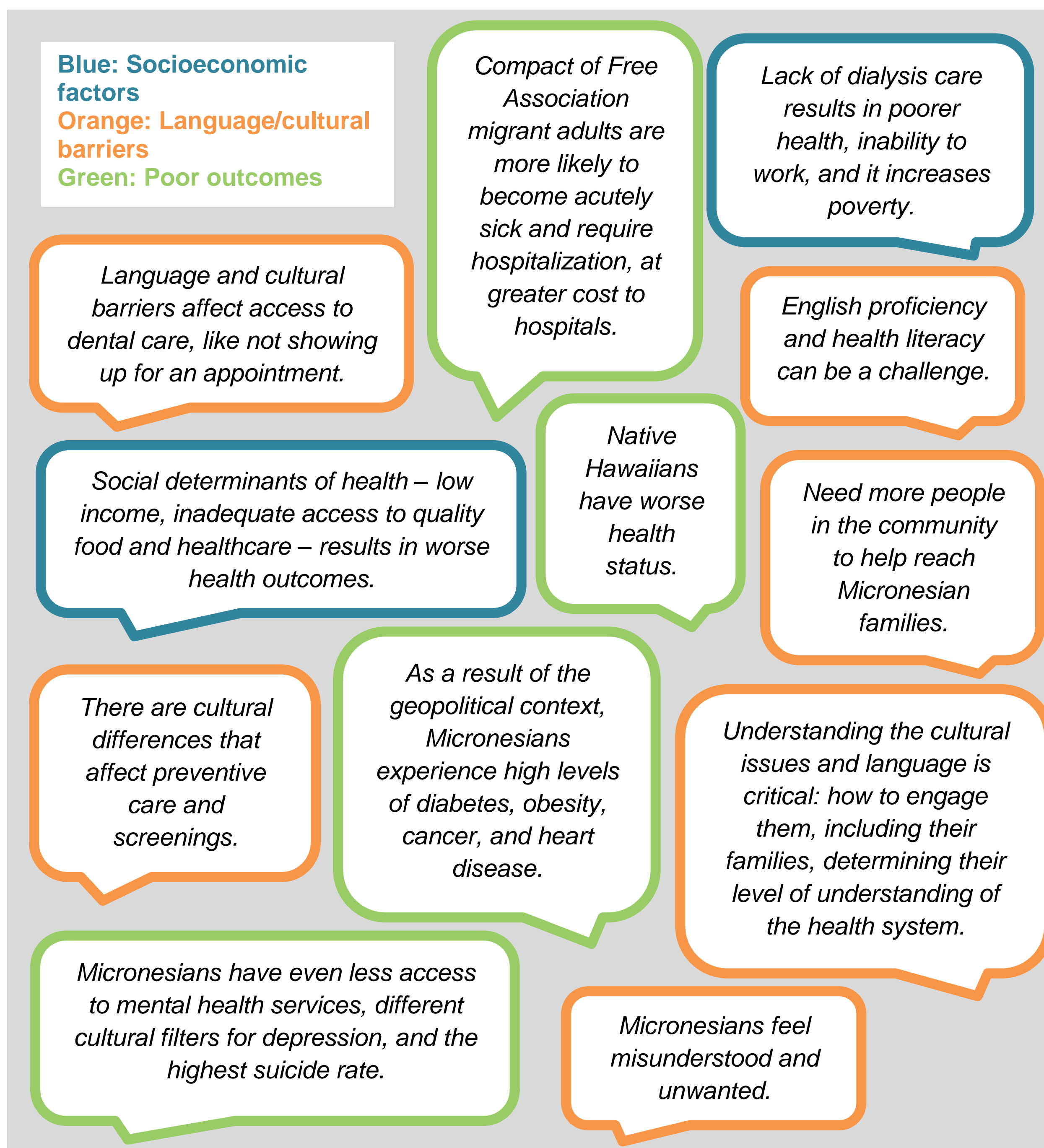
7.8 Disparities by Race/Ethnic Groups

Both quantitative and qualitative data illustrate the health disparities that exist across Hawaii's many racial and ethnic groups. Figure 7.2 identifies all health topics for which a group is associated with the poorest value for at least one quantitative indicator. The list is particularly long for Native Hawaiians and Pacific Islanders.

Figure 7.2: Disparities by Race/Ethnicity

Qualitative data collected from health experts in the state corroborate the poor health status of many Native Hawaiians and Pacific Islanders. Micronesians in particular were identified as a high-risk group for many health issues. More broadly, many informants noted language and cultural barriers to improving health in the multicultural communities of Hawaii. Below are a few excerpts taken from conversations with key informants that highlight the issues impacting different racial and ethnic groups in the state.

Figure 7.3: 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 and guidance for community benefit planning efforts and constructing a positive impact in 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 Castle Medical Center,

You can e-mail us at **callcenter@ah.org**. Your e-mail message will be read by our Call Center, which is open from 8:30 a.m. to 5 p.m., Monday through Thursday, and from 8:30 a.m. to 4:30 p.m. on Fridays. (It is closed on holidays.) After reading your message, the Call Center will then forward it on to the appropriate department or persons in the hospital.

Write or Call Us

The main address and phone number for Castle Medical Center are:

Castle Medical Center
640 ‘Ulukahiki Street
Kailua, Hawai‘i 96734

Phone: **(808) 263-5500**

Appendix

Asset Inventory

Diabetes Education and Nutrition programs

Island of Oahu

Castle Medical Center 808-263-5050
  Wellness and Lifestyle Medicine Center

Fetal Diagnostic Institute of the Pacific 808-945-2229
  Diabetes in Pregnancy
  HMSA Well Being Connection 1-855-329-5461

inControl Diabetes Learning and Resource Center 808-450-2402

Kaiser Permanente 808-432-2260
  Diabetes skills and basics
  Kalihi Palama Clinic 808-843-7256

Kapiolani Medical Center at Pali Momi 808-535-7000

Kapiolani Medical Center for Women and Children
  Sweeter Choice 808-983-8559
  Nutrition Counseling 808-983-8224
  Pali Momi 808-485-4519

Kokua Kalihi Valley Comprehensive Family Services 808-791-9421

Pali Momi Medical Center 808-485-4519

The Queen's Medical Center 808-691-4823
  Queen's Diabetes Education Center

Straub Clinic and Hospital 808-522-4325
  Health Management

Times Supermarket Pharmacy 808-832-8262

Tripler Army Medical Center 808-433-6504

Department of Veteran Affairs 808-433-2704
  Endocrinology Clinics and/or Telehealth

Waianae Coast Comprehensive Health Center 808-697-3599

Island of Hawaii

East Hawaii

Bay Clinic Keaau Family Health Center 808-934-3204

Bay Clinic Hilo Family Health Center 808-934-3204

HMSA Well Being Connection 1-855-329-5461

Hilo Medical Center 808-932-2858

Hui Malama Ola Na'Oiwi
Native Hawaiian Health Systems 808-969-9220

KTA Puainako Pharmacy 808-959-8700

Kaiser Permanente
Diabetes basics
Hilo 808-934-4000

RX Consultants of Ululani Pharmacy 808-934-9400

West Hawaii

HMSA Well Being Connection 1-855-329-5461

Hamakua Health Center 808-930-2746

Hui Malama Ola Na'Oiwi
Native Hawaiian Health Systems 808-323-3618

Kaiser Permanente
Diabetes Basics
Kona 808-334-4400
Waimea 808-881-4500

North Hawaii Community Hospital 808-855-4444
Diabetes Education Center

Terry Ryan, RD, CDE
Kona 808-329-3077
Vivienne Aronowitz, RD, CDE
Waimea 808-936-9001
West Hawaii Community Health Center 808-326-5629
West Hawaii Home Health Services 808-328-9883

Island of Maui

HMSA Well Being Connection 1-800-499-5036

Hana Community Health Center 808-248-8294

Hawaii Diabetes Center 808-871-5144

Kaiser Permanente

Diabetes Basics

Lahaina 808-622-6900

Maui Lani 808-243-6000

Maui Medical Group

Health Management Center

Wailuku & Lahaina 808-984-7436

Hui No Ke Ola Pono Native Hawaiian Health Systems 808-984-7436

Island Of Kauai

Better Choices, Better Health 808-241-4470

Kauai County Agency on Elderly Affairs

HMSA Well Being Connection 1-800-499-5036

Ho'Ola Lahui Hawaii 808-240-0100

Kauai Medical Clinic 808-246-1380

Health Management Program

Eleele, Kapaa, Lihue

Lifeway Pharmacy

Lihue 808-245-2471

Waimea 808-338-0600

Lihue Pharmacy 808-246-9100

Lihue Professional Pharmacy 808-245-3800

Wilcox Health 808-246-1380

Island of Molokai

Molokai Drugs, Inc. 808-553-5790

Molokai Family Health Center 808-553-5353

Na Pu'uwai Clinical Services - Native Hawaiian Health Systems 808-560-3653

Island of Lanai

Ke Ola Hou 'O Lanai - Native Hawaiian Health Systems 808-565-7204

Adventist Health

2016 CHNA approval

This community health needs assessment was adopted on October 18, 2016 by the Adventist Health System/West Board of Directors. The final report was made widely available on December 31, 2016.

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Request a copy, provide comments or view electronic copies of current and previous community health needs assessments: https://www.adventisthealth.org/pages/about-us/community-health-needs-assessments.aspx