

# E OLA MAU A MAU

## THE NEXT GENERATION OF NATIVE HAWAIIAN HEALTH

Papa Ola Lōkahi

E OLA MAU A MAU – THE NEXT GENERATION OF NATIVE HAWAIIAN HEALTH

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Suggested Citation:
Papa Ola Lōkahi. (2019). E Ola Mau A Mau – The Next Generation of Native Hawaiian Health. Honolulu, HI: Papa Ola Lōkahi.

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*This report is dedicated to Dr. Kekuni Blaisdell for his steadfast beliefs in raising the health of our lāhui through his hard work, dedication, and inspiration of others and of the coming generations of Native Hawaiians.*

## WELINA – A MESSAGE FROM PAPA OLA LŌKAHI

Despite the hectic life we live sometimes, there's an essence of peace when the eye catches a plant, like that of the budding ʻamaʻu fern puka through the earth's ground, serving as a sign that a new generation of life is upon us. It is the privilege of Papa Ola Lōkahi to present *E Ola Mau a Mau – The Next Generation of Native Hawaiian Health*, an updated summary of achievements and challenges across key areas in Hawaiian health and well-being

This work honors those kūpuna whose ʻike Hawaiʻi forged the path for this and future generations of our lāhui. Through the vision and work of pioneers, such as Dr. Kekuni Blaisdell, the landmark 1985 study set the foundation for Hawaiian health in identifying key areas and disparities that plagued our people. It has also been the catalyst for change in health policy, Native Hawaiian healing traditions, research and data ethics, health care, programs, and services.



SHERI-ANN DANIELS
EXECUTIVE DIRECTOR

*E Ola Mau a Mau* could not have been completed without the many hands, knowledge, and passion of our kānaka for their well-being. That is the Hawaiian way—to come together around a common goal, building upon the ʻike of those who came before us who also visualized a thriving island people. Our lāhui is made up of Native Hawaiians who are responsible, capable, worthy, creative, motivated, and engaged family and community members. We collectively develop and effectively deploy resources from ancestral, cultural, linguistic, and traditional healing knowledge and practices. We wisely manage our natural resources; blend traditional, western, andcomplementary medicine; practice responsible science and research; and efficiently optimize use of private, public, and personal resources.

Mahalo for the brilliance of our ancestors!

This report is the joint creation of many in the community whose contributions enable us to partner efficiently to address the recommendations in each of the chapters. These recommendations provide measurable goals that will lead to an overall improvement of Native Hawaiian health and well-being.

We know that when we thrive, all of Hawaiʻi thrives. Our deepest mahalo to all who devote themselves to Native Hawaiian health and well-being.

E ola mau!





TERCIA KU
PROJECT COORDINATOR

On June 1, 2016, Papa Ola Lōkahi hosted a meeting in Honolulu brining together more than 100 people devoted to uplifting Native Hawaiian health and well-being. It was from that initial meeting that the task force working groups were formed and moved forward toward updating the 1985 report which has become *E Ola Mau a Mau – The Next Generation of Native Hawaiian Health.*

It has been an honor coordinating this compilation made possible by the commitment and dedication by task force chairs – Hardy Spoehr, Naleen N. Andrade, Sheri Daniels, Deborah Goebert, Earl Hishinuma, J. Keaweʻaimoku Kaholokula, Martina L. Kamaka, Selene LeGare, Heather Haynes, Claire Hughes, Jodi Leslie Matsuo, Kim Kuʻulei Birnie, Mikako Deguchi, Emi Eno Orikasa, Emily Makahi, Jaclyn Kanilehua Kim, Stephanie Bell and Thomas Chock – along with supporting authors.

We acknowledge the many hours of writing, research and editing that has gone into this publication. Within each chapter lies the mana and the ʻike of these contributors.

*Ua lehulehu a manomano ka ʻikena a ka Hawaiʻi.*
Great and numerous is the knowledge of the Hawaiians.

Our journey is of self-determination, our destination is mauli ola! E Ola Mau a Mau provides guidance as we address the challenges ahead.

*ʻIke no i ka lā o ka ʻike; mana no i ka lā o ka mana.*
Know in the day of knowing; mana in the day of mana.
Knowledge and mana – each has its day.
Another day may bring greater knowledge and great mana than today.

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# ʻŌlelo Haʻi Mua

# ʻŌlelo Haʻi Mua[1]

Hardy Spoehr

*As I was driving here this morning, I could see the noe lani[2] o nā Koʻolau, that mist on the Koʻolau. The semen falling from our Sky Father, Wakea, onto the kuahiwi[3] to Papa Honua, giving life, impregnating, fertilizing the earth, our Earth Mother. Out of that union comes all in our cosmos…And so it is with reverence that we respect the beginnings of our traditions and cosmos. We learn that we are all descendants of Haloa, one of the first products of the conception of Wakea and Papa. Hāloa ʻekahi[4] is our kalo,[5] our oldest sibling, hiapo,[6] who was born a mea alualu[7] and when kanu[8] in the ground, up sprouted the first kalo plant. And the next born was Hāloa ʻelua[9] from which all of us Kānaka Maoli[10] are descended. Our hiapo. The kalo plant's obligation is to feed us, but kalo can feed us only as long as we malama[11] the ʻāina[12] and have wai, water, so that kalo can grow large enough to be harvested. And so it is the ʻāina, our sacred environment, which embodies all of the great forces of our cosmos and invigorates us so that we feel stirring within us…the great thriving life force…*

*We know it is not enough to narrowly focus on physical health, for health means total well-being. And total well-being means connecting spiritually with each other…i ke kahi i ke kahi[13]…and with our sacred ʻāina[12]. We have to mālama, care for, not merely the lepo,[14] but also the wai,[15] the kai,[16] and the air to be ola[17] and pono.[18] The task is a big one but we are on our way. Let each of us hoʻomanaʻo,[19] hoʻohaliʻaliʻa,[20] recall special people, mea hiwahiwa,[21] healers who have shared their wisdom and their skills to help us on this long journey…Amama. Ua lele. Ua noa.[22] Let the kapu[23] be lifted. Mahalo no.[24]"*

R. Kekuni Blaisdell, MD
Opening Statement at Ka ʻUhane Lōkahi,
Native Hawaiian Health and Wellness Summit, March 1998

Comments by beloved kanaka maoli[25] physician Dr. Kekuni Blaisdell set the stage for numerous reports and gatherings of many concerned with improving the health and well-being of Native Hawaiians. Dr. Blaisdell's contributions continue to live with us as we move well into the 21st century. He led by example through reinvigorating our use of the honi,[26] re-instilling in us the use of the identifier Kanaka Maoli[25], always reminding us of the critical importance of our cultural connotations and understanding of health and well-being in the world around us and firmly asserting the unique standing our Pae ʻĀina[27] holds in the world.

Dr. Blaisdell was one of the original contributors to the original *E Ola Mau - The Native Hawaiian Health Needs Study* in 1985, and it is in his remembrance and to those original contributors that this health study, *E Ola Mau a Mau*, is dedicated. It is particularly noteworthy and heartwarming that Naleen Naupaka Andrade, Claire Kuʻuleilani Hughes, Lynette Paglinawan, and Benjamin Young are involved in revisiting the original study, as all played important roles in the initial study.

It has been a generation since the groundbreaking *E Ola Mau*; the first comprehensive report of the health status of Native Hawaiians was completed by the Native Hawaiian Health Research Consortium under the sponsorship of ALU LIKE, Inc., a Native Hawaiian community-based corporation founded in 1973.[i] Financial support to undertake this study was provided by the U.S. Department of Health, Education, and Welfare at the urging of Senator Daniel K. Inouye and Hawaiian leadership headed by Myron B. Thompson. Many of the advancements, which are common in medical practice today, were then either

[1] preface
[2] mist
[3] mountain top
[4] one
[5] taro
[6] first born child
[7] premature
[8] to plant
[9] two
[10] Native Hawaiian
[11] to care for
[12] land
[13] one another
[14] dirt, earth
[15] water
[16] sea
[17] life, health, healing, well-being
[18] well-being, equity, righteous, in perfect order
[19] to remember
[20] to fondly recall
[21] precious and beloved things or people
[22] The prayer is said. The taboo is over.
[23] taboo
[24] Thanks indeed.
[25] Hawaiian native
[26] to kiss; to exchange one another's essence in greeting
[27] archipelago

just emerging or still unknown. Telemedicine and the use of computers for public and personal health diagnosis were unknown; prescriptive authority was limited to licensed medical physicians; the relationship between public and personal health and the environment was just emerging, though intrinsically known already by Native Hawaiians; and indigenous healing and wellness practices were generally not accepted by allopathic medical professionals. This initiative takes many of these advancements into consideration.

Despite its limitations, the seven-volume *E Ola Mau* has served well as the benchmark study and blueprint for Native Hawaiian health since its completion in 1985;[ii] and, as such, has had a remarkable impact nationally on the Native Hawaiian community in health care delivery, traditional healing practices, workforce development, public policy, and community awareness.

## Health Care Delivery

*E Ola Mau* noted that Native Hawaiians generally viewed the delivery of health care as something to be feared. Most health professionals were not of Native Hawaiian ancestry, and hospitals were viewed as places to go to die. Therefore, Native Hawaiians accessed health care late in the progression of diseases, and outcomes were generally not the best.

This finding has led to the establishment of a health service delivery system developed throughout all the major Hawaiian Islands administered by Native Hawaiians for Native Hawaiians. Each major island has its own Native Hawaiian Health Care System. Most of the health professionals employed by each System are of Native Hawaiian ancestry.[iii] Additionally, the only national Native Hawaiian health organization, Papa Ola Lōkahi, has worked closely with the only national Native Hawaiian community association, the Association of Hawaiian Civic Clubs, to extend health and wellness activities to Native Hawaiians across the continental United States.

## Traditional (Indigenous Peoples) Healing Practices

The *E Ola Mau* study found that there was a growing interest within the Native Hawaiian community to access traditional healing practices, yet most of the existing health care providers, including hospitals, had health professionals with no or little knowledge or ability to provide traditional healing services.

This finding led to the identification of traditional healing practices as valid health practices in federal legislation for the first time in 1988 in the Native Hawaiian Health Care Act (P. L. 100-579). Since that time, the critical importance of traditional healing practices has been recognized in international law, in federal statutes by other Indigenous Peoples of the United States, and in the State of Hawai‘i Constitution.[iv] Today, traditional healing practices are available through many health care providers including the Native Hawaiian Health Care Systems, community health centers, and hospitals.[v]

## Health Workforce Development

The *E Ola Mau* study found that there were very few practicing health care professionals of Native Hawaiian ancestry. There were fewer than ten Native Hawaiian physicians licensed in the 1970s.

This finding led to the establishment of the Native Hawaiian Health Scholarship Program (42 USC 122: Section 11709) modeled on National Health Service Corps Scholarships and those offered by the Indian Health Service. Today, this program has enabled almost 300 Native Hawaiians to receive advanced professional degrees in medicine, dentistry, clinical psychology, nursing, public health, and pharmacy.[vi] Professional associations of Native Hawaiian health professionals, ‘Ahahui o Nā Kauka (Native Hawaiian Physicians Association) and I Ola Lāhui (Native Hawaiian Psychological Association), have formed and continue to grow in membership.

## Public Health Policy

The *E Ola Mau* study was silent on federal public policy as it related to the health of Native Hawaiians, though it did recognize Native Hawaiian traditional healing practices as a “traditional and customary practice” protected by the State Constitution (Article 12, Section 7).

This finding led to the codification in federal law of the health policy “to improve the health status of Native Hawaiians to the highest possible level” (42 USC 122; Section 11702). This was articulated in 1988 in the Native Hawaiian Health Care Act (P. L. 100-579) and its reauthorizations in the 1992 Native Hawaiian Health Care Improvement Act (P. L. 102-396) and in 2010 (P. L. 111-148). Relatedly, in 1998, spearheaded by Senator Daniel Akaka, the federal government also recognized the unique ethnic and racial characteristics of Native Hawaiians for the purposes of health and general data collection, analysis, and reporting. The Office of Management and Budget (OMB) disaggregated the former designation “Asian Pacific Islander (API)” into two separate categories – “Asian Americans (AA)” and “Native Hawaiians and Other Pacific Islanders (NHOPI).” The use of these identifiers has been

reinforced by the U.S. Census Bureau and the U.S. Department of Health and Human Services.

Finally, the special standing of Indigenous Peoples in international law and in Hawai‘i state law has been recognized in the United Nations Declaration on the Rights of Indigenous Peoples and the Hawai‘i Revised Statutes (Chapter 10 H), respectively.[vii]

**Community Awareness**

The *E Ola Mau* study found that most printed health materials were not written for Native Hawaiian community audiences. Materials were generally published by national organizations that had minimal if any knowledge of Native Hawaiians and other Pacific Islanders. Additionally, there was no national Native Hawaiian health organization which could mount or oversee the development, distribution, and advocacy necessary for specific community awareness around health and well-being. The study did, however, emphasize the link between the environment and public health. It was one of the first health reports to do so.

This finding led to the creation of Papa Ola Lōkahi, the Native Hawaiian Health Board composed of representatives from public agencies and Native Hawaiian health organizations, with specific tasks of enhancing community awareness around health and well-being, supporting culturally appropriate training and technical assistance, assisting practitioners of traditional Native Hawaiian healing practices, and advocating for the improvement of Native Hawaiian health and well-being and those of other Indigenous Peoples.

Dr. Benjamin Young, Native Hawaiian physician and Hawai‘i historian, shared this model in a gathering of Native Hawaiian kūpuna[28] sponsored by Papa Ola Lōkahi in Waimea, Hawai‘i, on March 9, 2017. Noted is the “four Ps & E” model that Young articulated, a path for moving forward to improve the health and well-being of the Native Hawaiian community given the ways that Native Hawaiians have internalized historical events in their understanding of Ola[29] through the generations:

***POWER:*** *King Kamehameha commanded the medical kahuna[30] of his day to be trained by foreign ships’ doctors in attempting to stop the disease known as ma‘i ‘ōku‘u,[31] the squatting disease. This was because it was a foreign disease, and he believed that kahuna could not stop this foreign disease. It was a dysentery, possibly cholera or typhoid. He felt that since this was a foreign disease, perhaps foreign kauka[31] could stop it. Unfortunately, even foreign physicians could not stop it. The school to train kahuna was located in Nu‘uanu on O‘ahu. Interestingly, this could be called the first “Post Graduate Residency Program in Hawai‘i”! Fortunately, this disease was self-limiting and on O‘ahu. King Kamehameha almost died from ma‘i oku‘u. The father of his wife, chiefess Ka‘ahumanu, Ke‘eaumoku, did die from this affliction. The point is noteworthy because someone, in this case, Kamehameha, had the power to command everyone to take some action to stem the epidemic.*

*Today we must have the “power” to act on what is needed to improve the health and well-being of Native Hawaiians and their families.*

***PROTECT:*** *It was the missionary Sereno Bishop who observed in 1838 that “No child in these islands lives beyond the age of 2.” Queen Emma was born in 1836 and, fortunately, she was protected by her physician father, Dr. Thomas Rooke. Emma was one of the very few children two years old to survive. In her adult life she was to make major contributions to the health and well-being of her people.*

*Today we must be able to protect the next generation of Native Hawaiians and their families.*

***PREVENT:*** *During the 1853 smallpox epidemic, immunizations had mixed results since some of the vaccines were ineffective. Alexander Liholiho expressed his frustration in his letters found in the Archives when he describes so tragically discovering many Native Hawaiians, dead from smallpox, that were found alone in their homes on the windward side of O‘ahu. While Jenner's observations and findings about inoculations were in 1799, the techniques in perfecting vaccines were still imperfect. Nonetheless, those who were vaccinated with viable batches of vaccines were protected from smallpox.*

*Today we must focus on prevention of illnesses, based on good nutrition, appropriate and continuing exercise, elimination of use of street drugs, continuing to keep the integrity of the family unit, and, especially, utilizing cultural immersion activities such as working in the lo‘i,[32] dancing hula,[33] paddling canoe, and catching waves and surfing; all of which help to maintain healthy lifestyles which, ultimately, improve the health and well-being of Native Hawaiians and their families.*

[28] ancestors, elders
[29] life, health, well-being
[30] expert, priest
[31] squatting disease
[31] doctor
[32] irrigated terrace
[33] Hawaiian practice of dance

***PERPETUATE:*** *The tragedy of so many families being torn apart in the late 19th through the mid-20th centuries because of the leprosy epidemic still haunts our history today. Leprosy was called the "Separating Sickness" for good reason, as its shattered families. The family was and continues to be the essential unit that needs to be perpetuated. A number of decades ago an international gathering entitled "The Lost Generations of Hawaiians" was sponsored by the University of Hawai'i Native Hawaiian Center of Excellence which focused on the disintegration of Native Hawaiian families because of drug use, sexual exploitation, incarcerations, and the sad result of so many kūpuna, or elders, having to care for so many mo'opuna, grandchildren, because the generation between them was incarcerated.*

*Today we must stress the importance of a strong family unit if we are to improve the health and well-being of Native Hawaiians and their families.*[viii]

***EDUCATE:*** *When the missionaries arrived and began to transform Hawai'i's oral tradition to one of writing and the ability to read, Native Hawaiians were smitten by these developments. In 1825, the new King, Kauikeaouli, Kamehameha III, declared that, "'O ko'u aupuni, he aupuni palapala ko'u (My kingdom shall be a kingdom of literacy)," and his support for literacy continued through his reign. In 1832, the New Testament of the Hawaiian-language Bible was published, and in 1838 the first medical text, Anatomia, was printed at Lahainaluna School's press. By 1861, it was thought that the literacy rate of the Hawaiian population surpassed that of all other nations except New England and Scotland.*

*Today that same fervor experienced over one hundred seventy years ago needs to be rekindled among Native Hawaiians and their families to educate themselves to value and select healthy life choices for today's living.*

Benjamin Young, MD
Former Dean of Students
John A. Burns School of Medicine
Native Hawaiian Kūpuna Gathering, March 2017

And, so, given the advances in health and wellness over the past thirty-two years, while keeping in mind Dr. Young's lessons learned through experiences by Native Hawaiians throughout Hawaii's history, it is entirely appropriate that new benchmarks and a blueprint for health and well-being for Native Hawaiians be identified by Native Hawaiians for this, their generation. Those benchmarks with its blueprint continue to drive efforts toward the realization of federal health policy "to improve the health status of Native Hawaiians to the highest possible level" in concert with international declarations and federal and state laws.

It is critical for the success of this revisit that efforts have been made to ensure that this new study be wholistic, consistent with and enwrapped within Hawaiian culture as defined by traditional values and interpreted and embraced by this generation. While much has been accomplished, more remains to be done if the goal as articulated in federal health policy is to be realized. If successful, this report, *E Ola Mau a Mau*, will enable this generation of Native Hawaiians and their families to make great strides toward that goal within the true sense of **ola pono**[34] in this, their island home, and elsewhere.

The path has been made clear by those who have gone before us; let us now all together take the next steps.

E Kū me Hina
E Kāne
O Lono
Kū'au mai i ka ola
I nā pōmaika'i
A e aka lani ka honua
Ea iā Kāne-i-ka-wai-ola

E ola mai kahi pae a kahi pae
E ola mai luna a lalo
E ola a ola loa no

*O Kū with Hina* (in healing)
*O Kāne* (of the living waters)
*O Lono* (in peace)
*Let down the gift of life*
*And all of the blessings with it*
*Till the heavens and earth be heaped*
*Let them be raised up*
*by Kāne of the living waters*
*May there be life from one end to the other*
*From above to below*
*May there be life, everlasting life*

Ka'upena Wong
Sharing an oli from the collection of Mary Kawena Pukui

[34] well-being

# Notes

[i] The Native Hawaiian Research Consortium consisted of 15 members and numerous other researchers. The chair/co-chair of each of the Task Forces were:

ALU LIKE Coordinator/Convener: Bella Zi Bell, MA; Winona E. Rubin, MA
Historical and Cultural Task Force: Kekuni Blaisdell, MD
Medical Task Force: Laurence Kolonel, MD; Elden Wegner, PhD
Mental Health Task Force: Anthony Marsella, PhD
Dental and Nutrition Task Force: Ofelia Dirige, DrPH; Claire Hughes-Ho, MS
A Preliminary Plan Task Force: Kiyoshi Ikeda, PhD; Hardy Spoehr, MA

[ii] *E Ola Mau – Native Hawaiian Heath Needs* reports, 1985:

a. *E Ola Mau – Compendium of Executive Summaries*, 1985.
b. *E Ola Mau – Historical and Cultural Task Force Report*, 1985.
c. *E Ola Mau – Medical Task Force Report*, 1985.
d. *E Ola Mau – Mental Health Task Force Report*, 1985.
e. *E Ola Mau – Nutrition/Dental Task Force Report*, 1985.
f. *E Ola Mau – A Preliminary Plan for Improving the Health of Native Hawaiians*, 1985.
g. *E Ola Mau – Proceedings of the Native Hawaiian Health Needs Study Conference*, 1985.

[iii] The Native Hawaiian Health Care Systems are:

a. Hoʻōla Lāhui Hawaiʻi, serving the islands of Kauaʻi and Niʻihau.
b. Ke Ola Mamo, serving the island of Oʻahu.
c. Nā Puʻuwai, serving the islands of Molokaʻi and Lānaʻi.
d. Hui No Ke Ola Pono, serving the island of Maui.
e. Hui Mālama Ola Nā ʻŌiwi, serving the island of Hawaiʻi.

[iv] The United Nations Declaration on the Rights of Indigenous Peoples recognizes the critical importance of traditional healing and health practices of Indigenous Peoples. Federal statutes recognizing the importance of traditional healing practices for the Indigenous Peoples of the United States are found in 42 USC 122: Section 11711 (Native Hawaiians) and 25 USC 16: Section 1621 (American Indians and Alaska Natives). The State of Hawai`i recognizes the importance of Native Hawaiian traditional healing practices in the State Constitution under Article XII: Customary and Traditional Practices.

[v] Practitioners of traditional Native Hawaiian healing practices are exempt from state licensure under state law (Hawaiʻi Revised Statutes [HRS] 453-2).

[vi] The Native Hawaiian Health Scholarship Program (42 USC 122: Section 11709).

[vii] See HRS 10H.

[viii] Dr. Benjamin Young shared this model in a gathering of Native Hawaiian kūpuna sponsored by Papa Ola Lōkahi in Waimea, Hawaiʻi, on March 9, 2017.



# Introduction

# Introduction

Naleen Naupaka Andrade, Sheri A. Daniels, Deborah A. Goebert,
Earl S. Hishinuma, Joseph Keaweʻaimoku Kaholokula,
Martina L. Kamaka, Hardy Spoehr

Kānaka Maoli: the indigenous, first nations people of Ko Hawaiʻi Pae ʻĀina, the Hawaiian Islands. As indicated by *E Ola Mau – The Native Hawaiian Health Needs Study* (*E Ola Mau*) of 1985, the overall health and social determinants of health for Native Hawaiians reflect disparities that place Native Hawaiians near or at the top of risk for poor health and wellness outcomes. However, as will be made evident by this *E Ola Mau a Mau* of 2019, Native Hawaiians continue to defy the odds. Native Hawaiian communities have eked out pockets of success where the health and vibrancy of their infants, children, youth, parents, adults, elders, and families have been achieved. Building upon this track record of gains, the goal of the efforts generating this report is to join these successes into distinct and complementary components of a system of health care that educates, inspires, supports, and focuses every Native Hawaiian to become an engaged participant in his or her health and wellness. The findings and recommendations of this 2019 *E Ola Mau a Mau* will be used to guide future efforts as well to support the reauthorization of the Native Hawaiian Health Care Law by Hawaii's congressional delegation.

## Historical Background

Native Hawaiians are the only indigenous people in the United States whose congressional legislative health care policy (Public Law 100-579; 20 l Stat. 2916) lacks a permanent authorization of appropriations. After 30 years—an entire generation—of implementing the Native Hawaiian Health Care Law, this new report, *E Ola Mau a Mau*, updates the original 1985 report.

The 1988 Native Hawaiian Health Care Improvement Act has brought an average of approximately $9 million per year into Hawaiʻi to serve over 200,000 Hawaiians. That amounts to less than $45 per person, per year. Compare that to the $9,403 – $9,892 range per person, per year that the United States spent on health in 2017 (Organization for Economic Cooperation and Development [OECD], 2017; Papanicolas, Woskie & Jha, 2018), or to the $9,726[1] per American Indian/Alaskan Native per year (Indian Health Service, 2019). Focusing specifically on users of the Native Hawaiian Health Care System clinical/health care services, about 25,000 men, women, and children are users (Papa Ola Lōkahi, 2018). Therefore, the estimated cost per user is $360 per person/year. Compare this to the $4,078 per person, per year that the Indian Health Service spends on American Indian/Alaskan Native users (Indian Health Service, 2019). The annual allocations for Native Hawaiians received from the federal government, while deeply appreciated, have not been enough to generate the critical mass of energy and momentum to enable Native Hawaiian health care leaders to successfully execute the master health plan set forth by Papa Ola Lōkahi, the Native Hawaiian Health Board.

Because of the insufficiency in resources, the outcomes of this legislation have been mixed. The *E Ola Mau* report of 1985 was the first time that a concerted, comprehensive effort was made to document the health status of Native Hawaiians. The results were alarming. Some scientists predicted that Native Hawaiians would become extinct because of Native Hawaiian morbidity and mortality rates (Goo, 2015). However, the Office of Hawaiian Affairs, Research Division Demography (2017) report noted that the Native Hawaiian population in Hawaiʻi increased from 239,655 to 289,970 in the years between 2000 and 2010.

Gains in the sciences and scholarship have been made with over 140,000 publications (2018 Google Scholar search) and other enduring learning materials about Native Hawaiian health and culture. The number of Native Hawaiian physicians has increased from 12 in 1975, to more than 325 worldwide in 2018. The majority of these physicians are graduates of the University of Hawaiʻi School of Medicine (ʻAhahui o nā Kauka, 2019; Ambrose et al., 2012). An estimated 72% of the total number of Native Hawaiian physicians worldwide live and practice in Hawaiʻi; however, they make up only 3.4% of all licensed and practicing physician in Hawaiʻi (ʻAhahui o nā Kauka,

[1] Based on Indian Health Service date collected from 2015-2019 (Indian Health Service Profile Fact Sheet, downloaded from: https://www.ihs.gov/newsroom/factsheet/ihsprofile/)

2019; Ambrose et al., 2012). There have also been substantive increases in nursing, social work, and other health care professions, and in the health and life sciences (Minton, Taʻafaki & Ng-Osorio, 2017; Mokuau et al., 2016). The use of cultural and traditional healing methods is rising (Donlin, 2010; Galang & Foye, 2014; Genegabus, 2017; Hewett, Alailima, Kamakea-Ohelo, & Mann, 2001; Peʻa, 1990).

During fiscal year 2017-2018, Native Hawaiians made up 44.5% of the 3,210 adults and 44.7% of the 1,977 adolescents receiving treatment for alcohol and substance use disorder from the Hawaiʻi State Department of Health Alcohol and Drug Abuse Division (2019). Native Hawaiian cultural practices and healing are being integrated into treatment interventions for alcohol and substance disorders (Like, Gray, & Yurow, 2013; National Association of State Alcohol and Drug Abuse Directors [NASADAD], 2009; Yurow & Daniels, 2019). Additionally, culturally aligned suicide prevention efforts have intensified, particularly for youth (Goebert & Sugimoto-Matsuda, 2017), an area in which there were insufficient data in 1985 for youth and young adults.

Despite these gains, Native Hawaiian health disparities remain severe. For example, life expectancy remains lower for Native Hawaiians than all other major groups in Hawaiʻi (Wu et al., 2017). Hawaiʻi's average life expectancy is 82.4 years; however, for Native Hawaiians, it is 76.6 years, which is approximately 6 years less, and approximately a decade less compared to Asian populations in Hawaiʻi. Moreover, Native Hawaiian morbidity and mortality rates for cardiovascular disease, stroke, diabetes mellitus, cancer, asthma, and substance abuse are unchanged from 1985 (see Chapter 2: Mental and Behavioral Health and Wellness, and Chapter 3: Medical Health). Native Hawaiian teenage pregnancy rates remain the highest among all Hawaiʻi adolescents (Aparicio, Birmingham, Rodrigues, & Houser, 2018; Hawaiʻi Health Data Warehouse, 2016) and is worsening with the growing numbers of homeless, of which 44.4% are Native Hawaiian (Yuan, Stern, Gauci, & Liu, 2018). Among Native Hawaiian youth and young adults, anxiety, depression, and suicide are major sources of morbidity and mortality (Andrade et al., 2006; Goebert & Sugimoto-Matsuda, 2017). This situation warrants a renewed call to action.

Part of the work of the *E Ola Mau a Mau* leaders and contributors has been to identify the factors that might explain these mixed findings of gains and remaining disparities and gaps within each of their chapters. As a preliminary starting point, Andrade (2017, 2018) proposed five common themes or causal factors that explain these findings:

1. **Resources**: Insufficient legislative funding to develop and sustain a well-functioning health care system, i.e., funding provided amounts to $45 per Native Hawaiian per year in the State of Hawaiʻi.

2. **Model**: An optimal model was not developed to establish and operate the Native Hawaiian Health Centers. In 1988, the original health care practitioners' organization E Ola Mau, Inc.,[2] conceived of what was called the Ahupuaʻa Model, which was a model of health based upon land, household, and family. This group naively expected that they would be asked to develop and implement this Ahupuaʻa Model. Instead, an Indian Health Service approach was first used and then withdrawn after resistance from Native Hawaiians. In place of a cohesive, unifying model, local communities were left to design their own models, often without expert health care administrative guidance and consultation. The result was an insular, localized diversity that lacked a framework within which consistent collaboration, shared principles and goals, and exchange of ideas and learning could seamlessly occur.

3. **Authority**: The envisioned coordinating body, Papa Ola Lōkahi, was legislatively assigned a whole slew of duties, but given neither the statutory authority nor sufficient funding to coordinate and provide a framework of unifying principles and standards of quality and common goals throughout the Hawaiian Islands. They led on an administrative model of cooperation and goodwill rather than coordination and oversight. Despite these obstacles, Papa Ola Lōkahi remains one of the great strengths of the Hawaiian Health Law.

[2] In 1987, the Native Hawaiian health professionals and Traditional Native Hawaiian healers and cultural practitioners who were coauthors and co-contributors of the 1985 *E Ola Mau Health Needs Study* formally organized into a 501(c)(3) non-profit organization and named their health care organization E Ola Mau, Inc. Its membership grew during the subsequent years, including Native Hawaiian health professionals, allied health professionals, and traditional Native Hawaiian healers and cultural practitioners from all major islands of Hawaiʻi.

4. **Participation**: Only approximately 10% of Native Hawaiians living in Hawai‘i sought services, despite health promotion and education programs (Papa Ola Lōkahi, 2018).

5. **Treatment Unit**: Individuals, rather than families and communities, were primarily treated, based on a biomedical paradigm rather than a bio-psycho-social-spiritual paradigm consistent with Native Hawaiian values, practices, and aspirations. The social determinants of health were largely neglected. The exception was the traditional cultural practitioners who worked largely in family-centered treatments.

Therefore, the leaders of this *E Ola Mau a Mau – Native Hawaiian Health Needs Study* of 2019 commit themselves to rekindling trust among Native Hawaiians, and other ethnocultural groups who support indigenous Hawaiians, that local and national leaders at every social, political, economic, spiritual, and cultural level will join us to work toward and achieve the goal and vision of optimal Native Hawaiian health in Hawai‘i.

## Ola—Life, Health, Healing, and Well-Being

A major part of the work on the 2019 *E Ola Mau a Mau* report has been geared toward developing new ways of thinking about Native Hawaiian health. Ola is the Native Hawaiian cultural concept of life, health, healing, and well-being.

In the *E Ola Mau* report (1985), the central model for health was the cultural concept of Lōkahi, which was rooted in health for 18th- and early-19th-century Native Hawaiians who were thriving with a population of over 600,000 (Goo, 2015). Lōkahi means harmony or balance within oneself, with others, with the divine, and with the environment. One may become ill when lacking in any aspect of balance or harmony.

The 30-year outcomes of the Native Hawaiian Health Care Law indicated that Lōkahi was not the most effective cultural concept to use in the Native Hawaiian health care system that was developed (Papa Ola Lōkahi Historical/Cultural Task Force, 2017). This finding tells us that cultural concepts that worked in the past are not generic in their effectiveness. They are contextual and specific to the circumstances and challenges that one is attempting to address. For example, Lōkahi was indeed a powerful cultural concept for the men and women who made up the crews of Native Hawaiian voyaging canoes that recently completed their three-year sailing voyage around the world. On the voyaging canoe, diversity is framed within the unified focus of survival and success on the open ocean.

In contrast, the cultural concept of Ola has always been at the forefront of the Native Hawaiian Health Needs Study that triggered the public law. E Ola Mau may be translated as “To create and perpetuate Ola—health, life, healing, and well-being.” Within this context, Lōkahi is subsumed as part of Ola. Ola is the realization that you manage and protect your health and wellness by the choices you make, rather than leaving it to fate to allow an illness to decide if it is going to “get you”—the latter concept being perhaps a common perspective held by some Native Hawaiians.

The following story illustrates what Ola is *not*. In reflecting on the low participation of Native Hawaiians in health care services, the question can be posed: Why do Native Hawaiians not trust entering the health care system, despite growing numbers of Native Hawaiian physicians, nurses, etc.? During an all-day gathering with elders from every island for this update, the underlying reasons for this phenomenon were discovered. The elders shared the story of how leprosy devastated the fabric of Native Hawaiian families. The highly stigmatizing term “leprosy” is used intentionally, instead of Hansen’s disease, because it captures the fear, shame, and degradation that this term meant—and still means—for Native Hawaiians.

Leprosy was the last disease epidemic that devastated the Native Hawaiian population, beginning in the mid-19th century. The Native Hawaiian quarantine laws made having leprosy a crime. Nearly every Native Hawaiian family has a story of one or more of their relatives—a mother, father, sibling, uncle, aunt, cousin (men, women, and children) being forcibly removed from their families, put on ships and later airplanes, and sent to Kalaupapa, the Leper Colony on Moloka‘i. The quarantine laws ruptured the family structure and left the families who remained at home immersed in guilt, shame, humiliation, and indescribable sorrow for their loved ones. When babies were born in Kalaupapa, they were immediately taken from their mothers and sent to be raised by their relatives. This practice continued into the 1950s. And tragically, the police who had to enforce these quarantine laws were often Native Hawaiians. The phenomenon of historical trauma, described in more detail later in this chapter, refers to horrific losses such as the shattering of Native Hawaiian families. This story helps to comprehend viscerally the insidious and mostly unconscious effects of historical events which have resulted in diminishing and destroying Ola.

## Native Hawaiians

The population of the United States now numbers 327 million (U.S. Census, 2018) and is increasingly diverse. By 2044, the U.S. population will become a

majority-minority population. It is estimated that by 2060, minority populations will account for 56% of the total population. In addition, 2020 will be a milestone year in which more than 50% of the population of children will come from minority groups (Colby & Ortman, 2015; U.S. Census, 2015).

The health of these minorities reflects the health of the United States in general. It is unfortunate that minority groups *continue* to suffer from the health disparities that were clearly noted in the 1985 comprehensive report to Congress, the Heckler report (Heckler, 1985). For example, the National Health Care Disparities report of 2013 found that, in general, disparities in quality of care and access to care related to race, ethnicity, or income showed no significant change (National Health Care Disparities, 2013).

Native Hawaiians are the indigenous people of the Hawaiian Islands, and they too suffer from significant health disparities. Although Native Hawaiian data on the national level can be hard to discern as much of the data have not been disaggregated, these disparities are identified from more detailed data gathered by the State of Hawai‘i. Hawai‘i is unique in that it has had no majority ethnic population since the 1890s. That is when Native Hawaiians became minorities in their homeland due to a rapid decline in population resulting from introduced infectious diseases, as well as an influx of immigrants from Asia who came to work on the sugarcane plantations.

Since that time, all ethnic groups in Hawai‘i have remained at less than 50% of the population, including the White population. The 2010 U.S. Census showed Hawaii’s population at 1,360,301 (U.S. Census Bureau, 2010), with the following breakdown:

- Asian: 38.6% total
  - Filipino: 14.5%
  - Japanese: 13.6%
  - Chinese: 4%
  - Other Asian: 3.9%
  - Korean: 1.8%
  - Vietnamese: 0.7%
- White: 24.7%
- Native Hawaiian: 21.3% (including part-Native Hawaiian)
- Mixed, Two or More Races: 9.5%
- Other Pacific Islander: 4.7% total
  - Other: 2.7%
  - Samoan: 1.3%
  - Micronesian: 0.7%
- Black or African American: 1.6%
- American Indian and Alaska Native: 0.3%
- All “others (mixed race and populations less than 0.5%)”: 15.8%

(U.S. Census Bureau, 2010 - Census Redistricting Data)

There were 527,077 Native Hawaiians in the United States in 2010, with just over half, 289,970, living in Hawai‘i (see Figure 2 for distribution across the United States). This amounts to only 0.1% of the United States population being Native Hawaiian, and given this small percentage, Native Hawaiians have often been aggregated with Asian Americans and other Pacific Islanders (Ka Huaka‘i, 2014). Such aggregation has resulted in the masking of many health disparities specifically affecting Native Hawaiians. For example, Asian Americans have the longest life expectancy in Hawai‘i, whereas Native Hawaiians have the lowest (Wu et al., 2017).

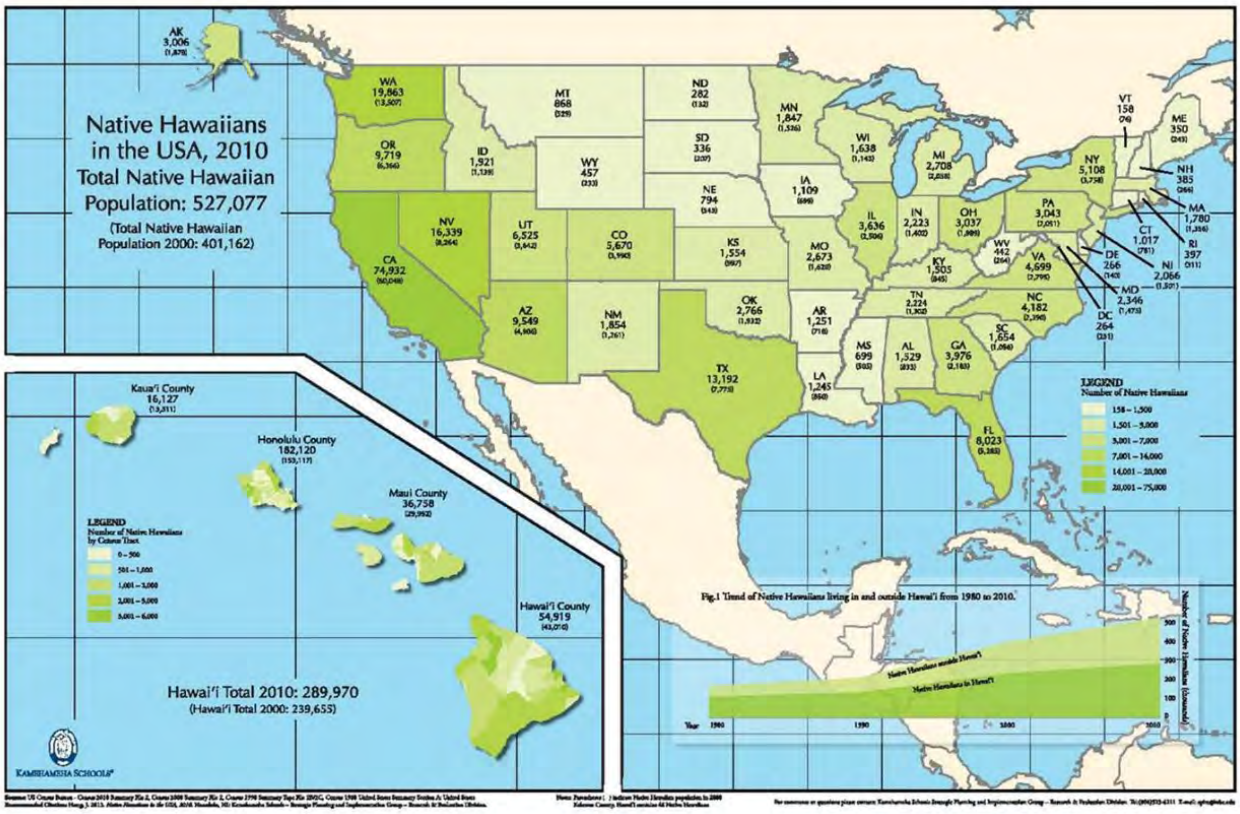



Figure 2. Distribution of Native Hawaiians across the United States (Ka Huakaʻi, 2014).

### Ethnocultural Identity

Ethnocultural identity is at the core of well-being. Ethnocultural evolution refers to the iterative process by which groups define and redefine themselves over time by utilizing different dimensions of culture (e.g., language) to simultaneously distinguish and connect one group with another (McDermott & Andrade, 2011). It combines the concepts of ethnicity and culture. Ethnicity includes both the concept of kinship, or external relationships, and a concept of the inner identity that unites the past with the present and future. Culture is the principal marker to distinguish, and more importantly, to connect one group with another. Therefore, ethnocultural identity is the means by which a group maintains its distinctiveness—of kinship, as well as ancestral and home country ties—over time, while creating ways of sustaining connections with other groups that are essential to their society's well-being.

The Native Hawaiian ethnocultural evolution can be described in two waves of historical events (McDermott & Andrade, 2011). The first wave, Renaissance (1810–1893), spanned nearly a century and began with the formation of a unified island nation by King Kamehameha I, whose reign was marked by the advancement of culture and the arts (Charlot, 1983). Ten months after Kamehameha's death, the New England missionaries arrived. Filled with Christian zeal and Calvinist austerity, they tried to remake Native Hawaiians in their image—educated, literate, devout Christians practicing New England temperance. Remarkably, they created a Native Hawaiian alphabet, transforming the spoken ʻŌlelo Hawaiʻi[3] into a written language. Within five years of their arrival, 80% of the Hawaiian population was literate. The Congregational Church ruled alongside the Aliʻi[4] by creating "blue laws" that aimed to redefine Native Hawaiian ethnicity by stripping away selected aspects of Native Hawaiian culture from Native Hawaiians. Because of this, Native Hawaiian culture went underground. To the horror of the missionaries, Native Hawaiian culture and ethnic pride emerged audaciously at the coronation of King David

[3] Hawaiian language

[4] chief, chiefess, ruler, monarch, royalty, noble

Kalākaua, called the "Merrie Monarch." The reign of Kalākaua marked the cultural renaissance of Native Hawaiian culture while integrating European grandeur with the building of ʻIolani Palace. Today, his mark on history continues with the annual Merrie Monarch Hula Festival in Hilo, a world-renowned event dedicated to the perpetuation of Native Hawaiian hula, arts, and culture.

The second wave, Social Mobilization (from 1970 onward), has been a period marked by the creation of a professional middle class of doctors, lawyers, and academics. It began at the University of Hawaiʻi in 1970 with the establishment of a four-year medical school. The Medical School Dean, Terrence Rogers, who described himself as "a haole working-class Brit," announced at his first meeting with the department chairs, "We are going to create a new middle class—of Hawaiian doctors." He succeeded brilliantly. From fewer than 10 Native Hawaiian physicians, there are now nearly 300; from a class size of 2% Native Hawaiians in 1974, Native Hawaiians now make up 18% of medical students in Hawaiʻi. Among the first Native Hawaiian medical students to be a part of the medical school's social engineering was Dr. Noa Emmett Aluli—one of the core leaders of Kahoʻolawe. The University of Hawaiʻi Law School produced the core cadre of political activist lawyers (among them the first Native Hawaiian Governor) who became the leaders of Native Hawaiian movements to restore Native Hawaiian lands. The University of Hawaiʻi College of Education produced a cadre of Native Hawaiian language scholars who reintroduced the teaching of Native Hawaiian language into public schools and universities that led to the University of Hawaiʻi School of Hawaiian Knowledge—Hawaiʻinuiākea. The outcome was an unprecedented outpouring of Native Hawaiian publications and Hawaiʻi radio and cable television stations.

As the land was restored, the traditional practices of loʻi kalo,[5] hula,[6] hoe waʻa[7], and mālama ʻāina[8] began to return. In 1976, Mālama ʻĀina became the rallying call and core cultural practice of the Kahoʻolawe ʻOhana. It raised the public psyche to cohere into a multi-ethnic, bipartisan group with the singular purpose of taking back Kahoʻolawe. During the same year, the voyaging canoe Hōkūleʻa and its crew restored the traditional wayfinding of the ancient navigators—using the moʻolelo[9] of Kahoʻolawe and other sources as one of their sources to successfully sail to Tahiti and back. And finally, in 1985, the landmark *E Ola Mau – The Native Hawaiian Health Needs Study* was published, setting the strategic focus that became the Native Hawaiian Health Care System and further accelerating Native Hawaiian research.

These two waves of events show that the Native Hawaiian ethnocultural evolution has been, at times, destructive and traumatic, and at other times, restorative and creative—a spiraling progression of survival, rebuilding, resilience, and advancement. Key findings from a Native Hawaiian community survey indicated that 78% of Native Hawaiians believed it was important to live and practice Native Hawaiian culture on a daily basis; 73% reported an interest in developing their knowledge of Native Hawaiian language; and 83% reported being proud of their ethnic heritage, compared with 73% of non-Hawaiians (Kanaʻiaupuni, Malone, & Ishibashi, 2005). The learned, shared, and transmitted values, beliefs, norms, and ways of life of Native Hawaiians guide thinking, decisions, and actions in modeled, intergenerational ways (Leininger & McFarland, 2005).

### Historical and Cultural Trauma

*I think with Native Hawaiians, and some compare with the indigenous people of America, with the displacement of their culture and history, you see a lot of generational trauma, and because of this generational [historical] trauma, having a kind of negative outlook sometimes of what people are good at or good enough for. You know, you see the increases in our physical health problems, such as diabetes…So I think those kinds of things play a big role in a lot of our Hawaiian people and in the problems that they experience.*

*[To discourage these impacts,] I think a big one is kind of really going back to values of what it means to be Hawaiian. The Hawaiian values really range in the community. Like one is ʻohana, you know. The families. And really bringing back the importance of the family and helping one another, each other out. Helping them not only physically but helping them to kind of speak up for each other, doing more of the traditional hoʻoponopono .*[10]

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Kīpuka o ke Ola (Rural Health Clinic)

Dr. Chun provides practical insight into the impact of historical trauma for his patients and families as well as ways to build resilience. Historical or cultural trauma is the cumulative emotional and

[5] taro farming
[6] Hawaiian practice of dance
[7] Canoe paddling
[8] traditional forestry to heal, restore, and sustain the land
[9] history or stories
[10] process for setting things right

psychological wounding over the lifespan and across generations, emanating from massive group trauma (Blaisdell, 1989; Blaisdell & Mokuau, 1991; Brave Heart, 1998, 1999a, 1999b, 2000; Brave Heart & DeBruyn, 1998; Brave Heart-Jordan & DeBruyn, 1995; DeCambra, Marshall, & Ono, 1998; Mokuau & Matsuoka, 1995; Trask, 1993, 1994). In a groundbreaking series of works, Brave Heart tied the plight of American Indians to the Holocaust experience—genocide, ethnic cleansing, and policies of forced acculturation. This analysis was preceded by local efforts to describe the impact of colonization on indigenous Hawaiians. Native Hawaiians have experienced a unique history of oppression and colonial exploitation which may contribute to poor health (Blaisdell & Mokuau, 1991; DeCambra et al., 1998; Kanahele, 1986; Mokuau & Matsuoka, 1995; Trask, 1993, 1994). Historical trauma is akin to kaumaha[11] syndrome—profound grief rooted in collective sadness and moral outrage (Kaholokula, 2007; McCubbin, Ishisaka, & McCubbin, 2007; Rezentes, 1996; Streltzer, Rezentes, & Arakaki, 1996). Historical trauma theory posits that while contemporary indigenous life has adapted, a significant proportion of Native people have poor well-being, in large part due to massive traumas (e.g., physical, emotional, social, and spiritual genocide) occurring in the past. Whitbeck, Adams, Hoyt, and Chen (2004) developed scales to measure historical trauma and its effects, finding that the current generation of American Indian adults not only had frequent thoughts about historical losses, but that these losses were associated with negative feelings of anxiety, depression, anger, and avoidance. Similarly, historical trauma has been demonstrated to be a predictor of substance use among Native Hawaiian college students (Pokhrel & Herzog, 2014). This study also found that historical trauma may have a protective effect against substance use, suggesting that thoughts and awareness related to historical trauma may not be harmful to health if issues associated with contemporary ethnic discrimination were addressed and individuals were equipped with skills and resources to manage stress or distress associated with perceived discrimination. Thus, there is a connection between historically traumatic events and contemporary stressors impacting physical and emotional well-being.

Within the context of historical trauma, the annual Navy bombing practice on the island of Kahoʻolawe and its representation of the modern-times destruction of an island, as well as the ethnocultural meaning the practice had—and still has—for Native Hawaiians (Andrade, Goebert, & Hishinuma, 2011), is reflected upon in this section. Kahoʻolawe, along with its surrounding reefs and seas, is used as a metaphor for Native Hawaiians and the history of the trauma they and their culture sustained—as well as how culture healed them. Historical trauma theory and its related manifestations of symptoms are explained, specific Native Hawaiian examples are offered, and ways to incorporate historical trauma into resilience, ethnocultural evolution, and healing in Hawaiʻi are described.

The sacred Hawaiian island of Kahoʻolawe is the kino lau[12] of Kanaloa—one of the four great gods or Akua of Native Hawaiian mythology (Melville, 1969; Valeri, 1985). The four Akua are: (1) Kāne, the god of fresh water, life, fire, and light; (2) Kū, the god of aggression, debate, and man-made creations, including war; (3) Lono, the god of healing, peace, the harvest, play, and sensuality; and (4) Kanaloa, Akua of the oceans and all living marine creatures; he is the god of mariners and navigators who sail through his vast domain. In most of the Pacific regions, Kanaloa is not seen as one of the major gods, but in Hawaiʻi, not only is he one of the four major Akua; his kino lau is an entire island dedicated to the ancient navigators. These ancient mariners believed that from Kahoʻolawe, the houses of the star constellations—along with powerful ocean currents leading into the ʻAlenuihāhā channel (the third most treacherous channel in the world) between Maui and Hawaiʻi island—would, at the right time of year, guide their great voyaging canoes back to the ancestral homeland of Tahiti. Voyagers to Hawaiʻi traveled across a distance of 5,000 miles of open ocean with family and others who served their personal, spiritual, military, and workforce needs. They also brought back domestic animals, plants, food, clothing, nets, rope, and other provisions needed for settlement. These ocean voyages required the support and guidance of the god of the sea; thus, Kanaloa became one of the paramount gods of Hawaiʻi. To destroy Kanaloa, as in the bombing and devastation of Kahoʻolawe, was to destroy the physical manifestation of a profound spiritual-cultural marker of Native Hawaiians' ancient history and oceanic prowess.

Historical trauma is the result of years of devastation. The symptoms associated with historical trauma encompass almost the entire range of psychopathology, including both internalizing (e.g., depression, anxiety) and externalizing (e.g., conduct disorder, substance use) symptoms (Whitbeck, Adams, Hoyt, & Chen, 2004). Undoubtedly, such effects on health and well-being are experienced by

[11] cultural loss

[12] Translated as "many bodies," referring to the many forms and physical embodiment of a god or divine being.

Native Hawaiians and the multicultural society for which they are the host culture, as described in Chapter 2: Mental and Behavioral Health and Wellness, and Chapter 3: Medical Health. Some Native Hawaiians refer to the ʻainoa, or breaking of the traditional spiritual system in 1819, as one of the first massive cultural traumas (Cook, Withy, & Tarallo-Jensen, 2003). Others point to the infectious diseases obliterating the Native Hawaiian population (see Appendix: Hawaiian Health Timeline and Events). Ongoing opposition contributes to the persistence of historical trauma, such as opposition to maintaining the integrity of iwi kupuna,[13] preserving wahi pana,[14] and recognizing the equality of the Native Hawaiian language with English as an official language of the State of Hawaiʻi (Liu & Alameda, 2011). This opposition may be exacerbated by the ethnic differential of social, political, and economic achievement in Hawaiʻi (see the section below on social determinants of health) and other perceived discrimination. The impact of historical trauma is widespread and may manifest in risky health behaviors and decreased well-being, contributing directly to pathways that increase the risk of chronic disease and mental illness (Crabbe, 1999; Kaholokula, Nacapoy, & Dang, 2009; Liu & Alameda, 2011). However, there is significant variation in how people experience and transmit intergenerational trauma (Denham, 2008).

Historical trauma is also the result of survival, which gives rise to resilience. Resilience typically refers to the positive capacity to cope with adversity as well as the ability to develop adaptive strategies that increase capacity for dealing with future negative events (Carlton et al., 2006; Masten, 2007). A number of factors and intervention components address the effects of historical trauma, and thereby enhance mental health and well-being. Native Hawaiians demanded an end to the military assault of Kahoʻolawe, and in 1976, activists occupied the island, making headlines across the country (Protect Kahoʻolawe ʻOhana, 2018). In 1990, the bombing stopped, and the Navy received funds to clean up the island. However, the cleanup was not completed, and other environmental problems remain. Native Hawaiians are restoring the island to its former health. Noa Emmett Aluli said, "We've taken on the biggest Navy in the world and held them responsible to the beliefs and practices of indigenous people…That is significant for the Native Hawaiian people."

Kahoʻolawe is one of the few places left in Hawaiʻi to learn about and immerse oneself in being Native Hawaiian (Protect Kahoʻolawe ʻOhana, 2018). Involvement in the Protect Kahoʻolawe efforts enables many Native Hawaiians to rediscover what it means to be Native Hawaiian and be trained in the rights and responsibilities of kahu o ka ʻāina.[15] Kahoʻolawe provides a place to experience meaningful connection to the culture, land, sea, kūpuna,[16] and akua.[17] Thus, Kahoʻolawe, as envisioned in the motto, "Kūkulu ke ea a Kanaloa,"[18] will be a cultural learning center where traditional cultural and spiritual customs, beliefs, and practices of the Native Hawaiian people can flourish. "E Kahoʻolawe, e hoʻomālamalama hou ana ka mauli ola Kohemālamalama" means "Kahoʻolawe, the Native Hawaiian lifestyle will again shine forth and flourish at Kohemālamalama."

Clearly, culture is reflected in help-seeking patterns, coping styles, social networks and support systems, the role of stigma, and treatment engagement (Satcher, 2001). To achieve cultural competence, the whole person as a cultural being must be observed and understood. To this end, resilience, family relationships, social and interpersonal stressors, and cohesion and functioning around family and community needs must be assessed. Furthermore, building cultural strengths reduces symptom dysfunction. This entails cultivating resilience in the face of multiple challenges; and developing coping strategies that enhance kinship ties, spirituality, and the creation of positive meaning. Programs that integrate cultural processes enhance participation, leading to improved self-concept, connectedness, health, and wellness (Carlton et al., 2011; Hill, 2006; Liddell & Burnette, 2017). This concept is imparted in the lyrics and music of "Mele O Kahoʻolawe" by Harry Kūnihi Mitchell (1977), who has played an integral role in the recovery of Kahoʻolawe. The last verse of this song gives hope for the future:

Hanohano nā pua o Hawaiʻi nei
No ke kaua kauholo me ka aupuni
Paʻa pu ka manaʻo o no ka pono o ka ʻaina
Imua nā pua
Lanakila Kahoʻolawe

*Popular are the young people of Hawaiʻi nei*
*For the civil strife they cause against the Government*
*Together in one thought to bring prosperity to the land*
*Forward, young people and bring*
*Salvation to Kahoʻolawe*

**Indigenization**

[13] Native Hawaiian human remains
[14] sacred sites
[15] stewards of the land
[16] elders, ancestors
[17] gods
[18] "The life and spirit of Kanaloa builds and takes form."

Indigenization is understood as ways of translating social forces into pedagogical processes in a socio-historical-political context (Singh, 2002). After years of colonization and historical trauma, indigenization entails "a belief that situations can be transformed, a belief and trust in our own peoples' values and abilities, and a willingness to make change…into the more positive rebuilding energy needed in our communities" (Wilson, 2004, p. 76). Indigenization occurs when Native Hawaiian ways of knowing and teaching of cultural knowledge and social voice prevail (Trinidad, 2009). Indigenization also means defining an identity and mission relevant to the community to which the organizations serving Native Hawaiians must be accountable, such as genealogy, propriety of traditional practices, wisdom of elders, servant leadership, sense of place, environmental kinship and spirituality, collectivism, and restorative values over retribution (Matsuoka, 2007*).* "Ko koa uka, ko koa kai," those of the upland, those of the shore (Pukui, 1983), can be used as a metaphor for bringing together many ways of seeing, knowing, and feeling for a collectively established purpose (Morelli & Mataira, 2010).

Indigenization represents a paradigm shift in developing, implementing, and sustaining Native Hawaiian programs by linking interventions to a sense of community (Kanahele, 1986; Meyer, 2001; Trinidad, 2009). Yet, far too many clinical and community-based health practices aimed at serving indigenous youth, adults, and elders often impose epistemological (i.e., ways of knowing) approaches that do not recognize cultural knowledge, values, or history, or the voices of the Native Hawaiian community (Trinidad, 2012). Native Hawaiian communities need to tell their stories and share their traditions and cultural practices in order for both communities and practices, once seen as marginalized, to become sources of hope and inspiration (Grande, 2008; Smith, 1999; Trask, 1993; Trinidad, 2009).

Native Hawaiian epistemology creates a sense of place, with community history at its center, and deepens the meaning of cultural values and knowledge in community action (Trinidad, 2009). A key component in this process is participation in creating knowledge that is relevant to culture, the history of exclusion, and how culture and history affect people individually and collectively. Such knowledge can spread to affect positively the well-being of one's family, work, and community.

Lawe i ka maʻalea a kūʻonoʻono.

*Take wisdom and make it deep.*

ʻŌlelo Noʻeau #1957
(Pukui, 1983, p. 211)

Indigenization is not exclusive; it can find value in Western notions of knowledge and education for Native peoples that can contribute to a fuller understanding of the world (Meyer, 2008; Reyes, 2016). Within Western educational spaces, Native peoples can seek to recognize how colonialism has shaped their experiences, to comprehend their past through a Native lens, to emphasize the value of Native ways of knowing, and to develop new ways of knowing that are rooted in the beliefs and understandings of their ancestors that will empower Native peoples (Grande, 2008; Reyes, 2016; Smith, 1999). By utilizing education with indigenous means and purposes, Native peoples can begin to heal from historical trauma and revitalize their communities (Denzin & Lincoln, 2008; Grande, 2008; Smith, 1999). Native scholars also become adept with Western academic tools that might be centered on Native values and community needs (Brayboy, 2005; Reyes, 2016).

Participation in higher education can be especially critical in preparing Native students with knowledge, skills, and social capital that can be used to work toward strengthening the political, economic, social, cultural, and spiritual well-being of Native nations (Brayboy, Fann, Castagno, & Solyom, 2012). For example, Hawaiʻinuiākea School of Hawaiian Knowledge seeks "to pursue, perpetuate, research, and revitalize all areas and forms of Hawaiian knowledge, including its language, origins, history, arts, sciences, literature, religion, education, law, and society, its political, medicinal, and cultural practices, as well as all other forms of knowledge" (Hawaiʻinuiākea School of Hawaiian Knowledge, 2018). Such indigenous programs are tied to community, self-determination, and sovereignty and are accountable to the needs and priorities of Indigenous peoples (Denzin & Lincoln, 2008; Grande, 2008; Meyer, 2003, 2008; Reyes, 2016; Smith, 1999). Thus, knowledge and attainment of knowledge are attached to kuleana[19] (Meyer, 2001; Reyes, 2016). Native Hawaiian scholars have a responsibility to utilize knowledge in ways that contribute to community well-being within Native Hawaiian communities, as well as using indigenous pedagogy to obtain knowledge throughout the process (Reyes, 2014, 2016).

## Social and Cultural Determinants of Health: A Systems Approach

[19] responsibility

Mōhala i ka wai, ka maka o ka pua.

*Unfolded by the water are the faces of the flowers.*

Flowers thrive where there is water, as thriving people are found where living conditions are good.

ʻŌlelo Noʻeau #2178
(Pukui, 1983, p. 237)

In understanding the underlying causes of chronic diseases, such as anxiety, depression, diabetes, and cardiovascular disease, the focus has traditionally been on genetic (i.e., hereditary traits), biological (high blood pressure, high blood cholesterol and obesity) and lifestyle (e.g., personal choices in diet and exercise) factors and access to quality health care. However, these factors are only the tip of the iceberg when it comes to accounting for the health inequities observed across ethnic and racial groups in the U.S. Collectively, biological factors, lifestyle behaviors, and access to health care account for only 30% to 50% of chronic disease prevalence. The other 50% to 70% is attributed to political, social, economic, and environmental factors, such as exposure to discrimination, lower educational qualifications and income, and issues of neighborhood safety and walkability (Catlin, Jovaag, Givens, & Van Dijk, 2016).

For example, income is strongly associated with longevity across all states in the U.S., including Hawaiʻi, even after accounting for access to health care (Chetty et al., 2016; Neumayer & Plumper, 2016). Income is also strongly associated with infant mortality and adverse birth outcomes in the U.S. (Komro, Livingston, Markowitz, & Wagenaar, 2016). Essentially, the more you make, the longer you live. Ethnic and racial discrimination is associated with indices of psychological distress, obesity, hypertension, cardiovascular disease, and adverse birth outcomes in many U.S. ethnic minority populations, including Native Hawaiians (Kaholokula, 2016). People of ethnic minority status, including Native Hawaiians, are more likely to live in obesogenic environments—that is, neighborhoods and communities that increase a person's risk for obesity because of poor access to healthy food and physical activity options, and safety issues that make regular physical activity challenging (Mau et al., 2008). Collectively, these political, social, economic, and environmental factors are referred to as the social determinants of health.

## Social Determinants of Health

Social determinants of health are the societal, political, and economic forces that influence the social structure and hierarchy and the distribution of power, resources, and opportunities in society that differentially impact the health and well-being of people. Social determinants of health help to explain health inequities among groups in the U.S. The World Health Organization defines health inequalities as inequities among groups of people within society that are avoidable because of social and economic conditions that place certain groups at risk for disease and illness (World Health Organization, 2018). In the U.S., those experiencing the greatest health inequalities linked to social determinants of health are Indigenous peoples, ethnic minorities, people of lower socioeconomic status, and people living in rural communities (e.g., Smedley, Stith, & Nelson, 2003). This is a social justice issue because these inequities are avoidable.

## Cultural Determinants of Health

Cultural determinants of health are the sociocultural conditions that influence group differences in health status. Cultural determinants are most relevant to Indigenous peoples who aspire to preserve their cultural traditions, to protect their sacred places and access to ancestral lands and resources, and to assert their indigenous identity and prerogatives. However, their values, practices, and aspirations are often at odds with those of the U.S. mainstream. A long history of physical, emotional, and cultural marginalization due to discriminatory acts and compulsory acculturation strategies (e.g., banning of Native languages) has adversely impacted the health and well-being of Indigenous peoples; this is often referred to as historical or cultural trauma (Kaholokula, 2017).

## Social and Cultural Determinants of Native Hawaiian Health

Figure 3 illustrates the social and cultural determinants of Native Hawaiian Health, which include historical events, the current political system, and environmental, socioeconomic, sociocultural, and interpersonal factors (Kaholokula, 2013; Native Hawaiian Health Task Force Report & Kaholokula, 2016). For example, there are historical events that have influenced present-day social and cultural determinants of health for Native Hawaiians, such as population decimation, Christianity and its

condemnation of traditional values and practices, land privatization, illegal overthrow of the Hawaiian Kingdom, ban on the Native Hawaiian language, militarization of Hawai‘i, tourism, migrations, and foreign investments. These have led to the displacement and marginalization of Native Hawaiians in their own homeland, causing disadvantages in education, housing, and workforce. The current political system and its allocation of resources influence the safety (e.g., crime and environmental toxins) and infrastructure (e.g., usable sidewalks) of neighborhoods, which in turn, influence a person’s access to healthy foods, safe and clean parks, and quality educational opportunities. In turn, the availability and affordability of options for healthy food and physical activity influence a person’s risk for obesity and obesity-related conditions, such as diabetes. Finally, the accessibility and affordability of quality health care influence a person’s health status. Native Hawaiians are most likely to live, work, learn, and age in environments where conditions impacting health are notably unfavorable compared to people of other ethnic groups in Hawai‘i.

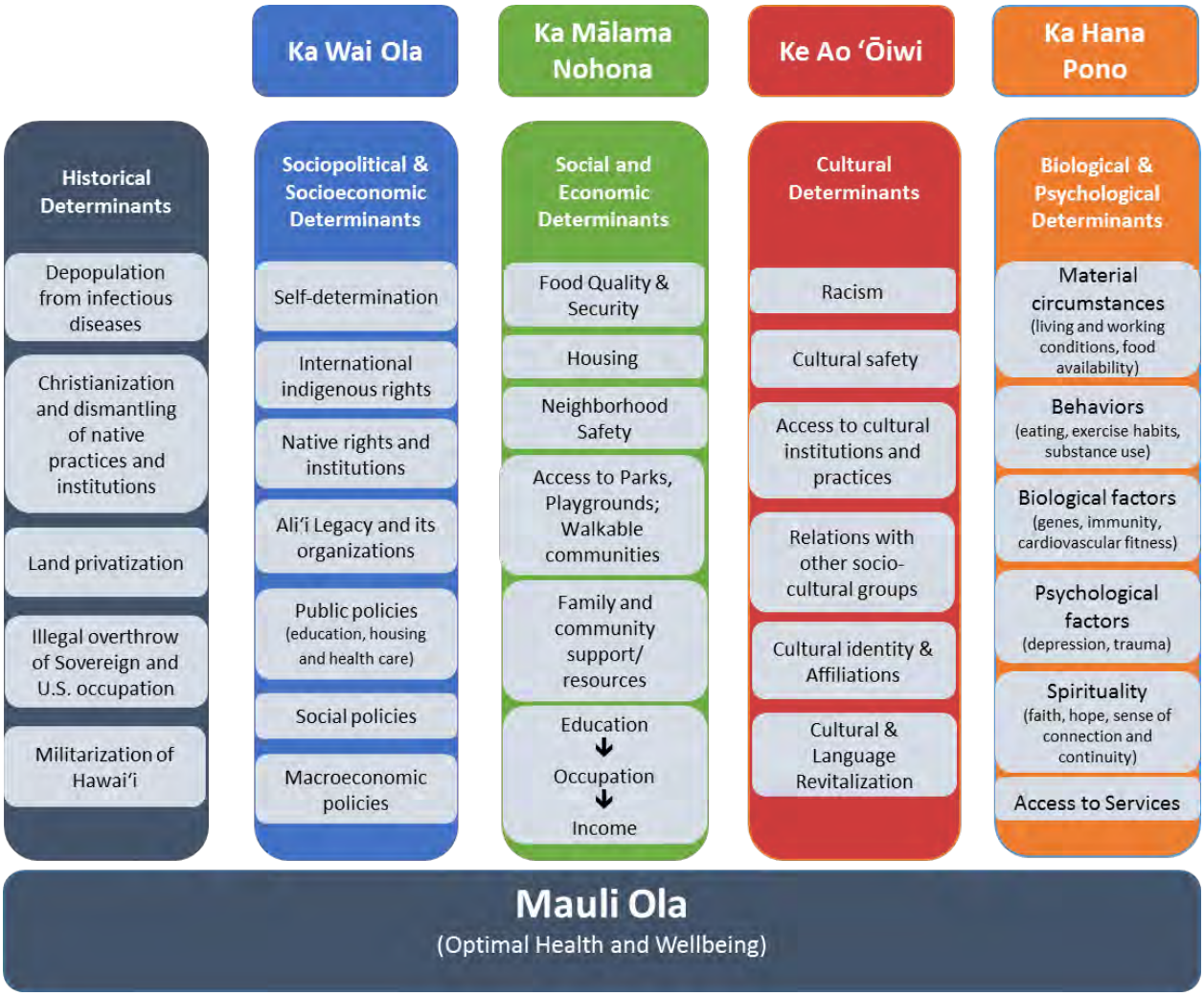



*Figure 3.* Social and cultural determinants of Native Hawaiian health.

## Political Factors

What is now referred to as Hawai‘i was once a sovereign nation under the Kingdom of Hawai‘i following the unification of all the Hawai‘i islands in 1810 by King Kamehameha the Great (Dougherty, 1992). In 1893, a U.S.-supported coup led by American businessmen who were missionary descendants illegally overthrew the sovereign Queen Lili‘uokalani and proceeded to set up a provisional government. Eventually, Hawai‘i was annexed to the U.S. in 1898 and made the 50th State in 1959, despite U.S. President Grover Cleveland's declaration of wrongdoing by the U.S. in 1893. U.S. President William (Bill) Clinton, with the Apology Resolution (Public Law 103-150) in 1993, again recognized the U.S.'s role in the seizure and occupation of Hawai‘i. The international legal community recognizes Hawai‘i as being illegally occupied by the U.S. because Native Hawaiians never relinquished their claims to their inherent sovereignty over their national lands to the U.S. (Sai, 2015), "either through the Kingdom of Hawai‘i or through a plebiscite or referendum," as stated in U.S. Public Law 103-150. Many Native Hawaiian continue to seek some form of political self-determination (Goodyear-Ka‘opua, Hussey, & Wright, 2014; Silva, 2004).

Currently, Native Hawaiians do not share the same political status as American Indians and Alaska Natives with respect to the U.S. government, despite this tumultuous history. Native Hawaiians are not eligible for support from Indian Health Services and do not have any form of formal federal recognition or a means of exercising their sovereignty. There are three federal policies in place that serve to improve the status of Native Hawaiians with respect to housing (i.e., Hawaiian Homes Commission Act), education (i.e., Native Hawaiian Education Reauthorization Act), and health (i.e., Native Hawaiian Health Care Improvement Act). The State of Hawai‘i established the Office of Hawaiian Affairs (OHA) in 1978 under Article XII of the state's constitution. OHA was established to manage the assets set aside for the welfare of Native Hawaiians. These federal laws were established to address past injustices and their adverse impact on Native Hawaiians.

## Environmental Factors

Neighborhoods with a higher concentration of Native Hawaiians are obesogenic neighborhoods. They are more likely to have more fast-food establishments and less physical-activity options (e.g., safe parks, usable sidewalks) than communities with a lower concentration of Native Hawaiians (Mau et al., 2008). For example, the Wai‘anae Coast of O‘ahu, where the highest concentration of Native Hawaiians reside in Hawai‘i, has among the highest number of automobile and pedestrian accidents and fatalities in Hawai‘i. Despite having a major high-traffic highway running through this region, the roads are absent of a median strip and usable sidewalks to prevent head-on collisions with oncoming traffic and to keep vehicles on the road. Traffic lights and pedestrian crossings are spread far apart along most of this highway; this set of circumstances increases the likelihood of jaywalking. The highway divides the residential areas from the beaches and parks. The more affluent communities of O‘ahu (i.e., Kāhala to Hawai‘i Kai) have median strips and sidewalks and more pedestrian crossings, and thus fewer automobile and pedestrian accidents and fatalities.

## Economic and Educational Factors

Poverty, either alone or in combination with other factors, can contribute to inequitable health outcomes. For example, research suggested that living at or below 200% of the federal poverty level imposed a greater societal health burden than either smoking or obesity (Hawai‘i State Department of Health, 2011). Across Hawai‘i, communities with higher concentrations of Native Hawaiians face significant socioeconomic challenges. For example, more than 40% of the residents of Wai‘anae, Moloka‘i, and Hana live at or below 200% of the federal poverty level.

Education is a core component not only of socioeconomic status, but also of health status. Within Hawai‘i, the earnings benefit of a college education was found to be higher among Native Hawaiians than among other major ethnic groups, suggesting that economic forecasts for the Native Hawaiian population were closely tied to their educational future (Kana‘iaupuni et al., 2005). It was also found that disparities between Native Hawaiians and non-Hawaiians widened during the high school years. In addition, the Native Hawaiian labor force had a lower rate of college degrees, and there were fewer graduates in fields such as science, technology, and business that received higher wages (Naya, 2007). Fortunately, several educational advancements over the years have positively impacted the economic well-being of Native Hawaiians. The Native Hawaiian Education Act of 1988 triggered a surge of activity in the mid-1990s, including addressing the needs of gifted and talented students; developing educational and vocational curricula that incorporate Native Hawaiian knowledge; developing community-based learning centers to serve preschoolers and after-school students; and researching and evaluating the educational status and needs of Native Hawaiians

(Look, Trask-Batti, Agres, Mau, & Kaholokula, 2013).

### Socio-Cultural and Interpersonal Factors

There is emerging evidence that factors related to interpersonal discrimination and acculturation (i.e., threats to cultural identity) are linked to the physical and mental health status of Native Hawaiians. The experience of discrimination by Native Hawaiians is associated with increased risk for psychological distress (Antonio et al., 2016; Kaholokula et al., 2017), obesity (McCubbin & Antonio, 2012), hypertension (Kaholokula, Iwane, & Nacapoy, 2010), and diurnal cortisol patterns associated with cardiovascular-disease risk (Kaholokula et al., 2012). In the biopsychosocial model of disease risk (Engel, 1997), the interpretation of an environmental event as being racist can lead to elevated psychological and physiological stress responses that intersect with socio-demographic, socioeconomic, and psychosocial stressors (Clark, Anderson, Clark, & Williams, 1999). Chronic activation of these stress responses can lead to abnormalities of the immune, neuroendocrine, and cardiovascular systems that increase risk for disease. The experience of racism affects physical health through psychological factors (Paradies et al., 2013). Perceived racism leads to psychological stress or distress for many people, which can manifest as depression, anxiety, emotional unrest, anger, resentment, and/or paranoia (Mohatt, Thompson, Thai, & Tebes, 2014).

A stronger cultural identity was found to be associated with suicidal attempts among Native Hawaiian adolescents (Yuen, Nahulu, Hishinuma, & Miyamoto, 2000) and diabetes risk among Native Hawaiian adults (Kaholokula, Nacapoy, Grandinetti, & Chang, 2008). Cultural identity appeared to be a marker of discrimination experience; studies have found a positive correlation between cultural identity and perceived ethnic discrimination in Native Hawaiians (Kaholokula et al., 2012; Kaholokula et al., 2010). It is likely that Native Hawaiians with a stronger cultural identity experience more cultural discord because of threats to this identity and challenges to their preferred modes of living (Kaholokula et al., 2009).

### Conceptual Models of Ola

*In Hawai‘i, for Native peoples, for indigenous Hawaiians, there’s another way, and perhaps we need to understand the Native and indigenous way and perspectives to contextualize how Hawaiians not only live and survive in today’s world in Hawai‘i but also may have a greater understanding of our historical cultural past that has contributed to a new state of being. And so, we should focus on our own traditional concepts of assessment, diagnosis, treatment development, and healing frameworks to help our own people adapt, adjust in Hawai‘i under a whole set of factors of Western intrusion. Why I say that is because the thing about medical treatment in Western medicine is the only concern is the individual. Hawaiian treatment concern is not only about you, the individual, but also does that have an impact on your ‘ohana?[20] Does that have an impact on your community? Is that spreading to other families, other communities? And if it is, then it’s really about people. So, we got to learn how to treat people, healthy people, healthy communities, and healthy families.*

Kamana‘opono Crabbe, PhD
Chief Executive Officer
Office of Hawaiian Affairs
June 2017

Dr. Crabbe’s interview highlights the importance of using Hawaiian models of health and well-being to guide and care for the individual, family, community, and lāhui.[21] In addition to the overarching systems-level approach indicated above by Kaholokula, several models of Native Hawaiian well-being have been put forth by Native Hawaiian scholars, building upon and strengthening this understanding, and rooted in the seminal work of revered Native Hawaiian historian Mary Kawena Puku‘i (Handy & Pukui, 1998; Pukui, Haertig, & Lee, 1972; Wong-Wilson, 2016). While all models highlight the need for a wholistic approach to Native Hawaiian well-being, such an approach is far from universal. Current efforts focus on influencing sociocultural determinants to have a greater impact on Native Hawaiian well-being.

[20] family

[21] people

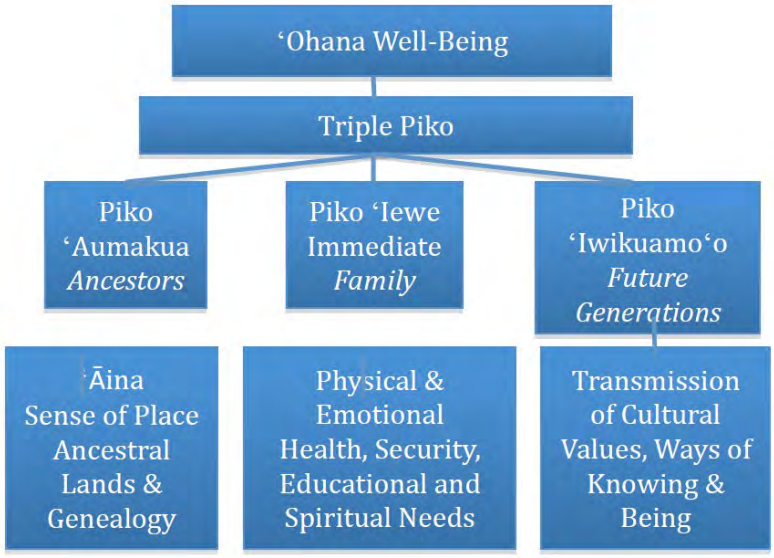



*Figure 4.* Mary Kawena Pukui's model of Native Hawaiian well-being (Adapted from Wong-Wilson, 2016, p. 112).

Rezentes (1996) proposed the Lōkahi Triangle to illustrate the indigenous concept of health (see Figure 5). His work focused on the importance of knowing one's ancestral ties and understanding connections to ʻāina[22] and Akua.[23] Health and well-being must be approached wholistically. Integrated mental, emotional, physical, and spiritual development enables Native Hawaiians to contribute to the cultural, linguistic, social, political, and economic development and sovereignty of their communities (Inglebert & Krebill-Prather, 2011). As health and well-being are addressed on multiple levels, people gain knowledge and skills that enhance their capacity to contribute to their communities.

In the ecological model of Native Hawaiian well-being, the emphasis shifts in scope from the individual to the ohana,[24] including community relations (McGregor, Morelli, Matsuoka, & Minerbi, 2003).

The dynamic model of Native Hawaiian well-being is illustrated by a flower (see Figure 6) in which the petals that represent emotional, social and cultural, physical, cognitive, and material and economic elements of well-being overlap in the center, indicating that these areas of well-being are interconnected and interdependent in forming the complete flower, and metaphorically the whole person (Kanaʻiaupuni, Malone, & Ishibashi, 2005).

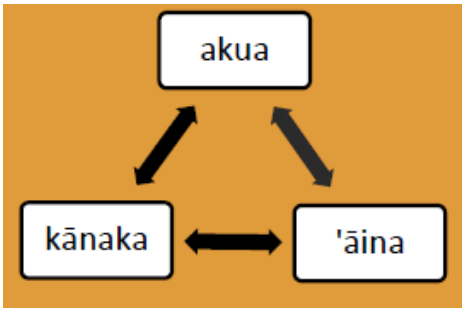



*Figure 5*. Lōkahi Triangle.

[22] land
[23] God, the supernatural
[24] family and extended family




*Figure 6.* Dynamic model of Hawaiian well-being (2005 *Native Hawaiian Education Assessment* – Kanaʻiaupuni, Malone, & Ishibashi, 2005).

Andrade (2006) developed a model of Indigenous Hawaiian ethnocultural identification to explain and predict how culture and ethnicity affect: 1) human development over the lifespan from infants to elders; 2) group affiliation and conformity to ethnic-group ideals; 3) levels of social function among individuals and their ethnic groups in a complex multicultural global community; and 4) ways in which individuals and groups define the existential meaningfulness of their lives, which allow them to be unique and different while they paradoxically remain an integral part of a unified whole (see Figure 7).

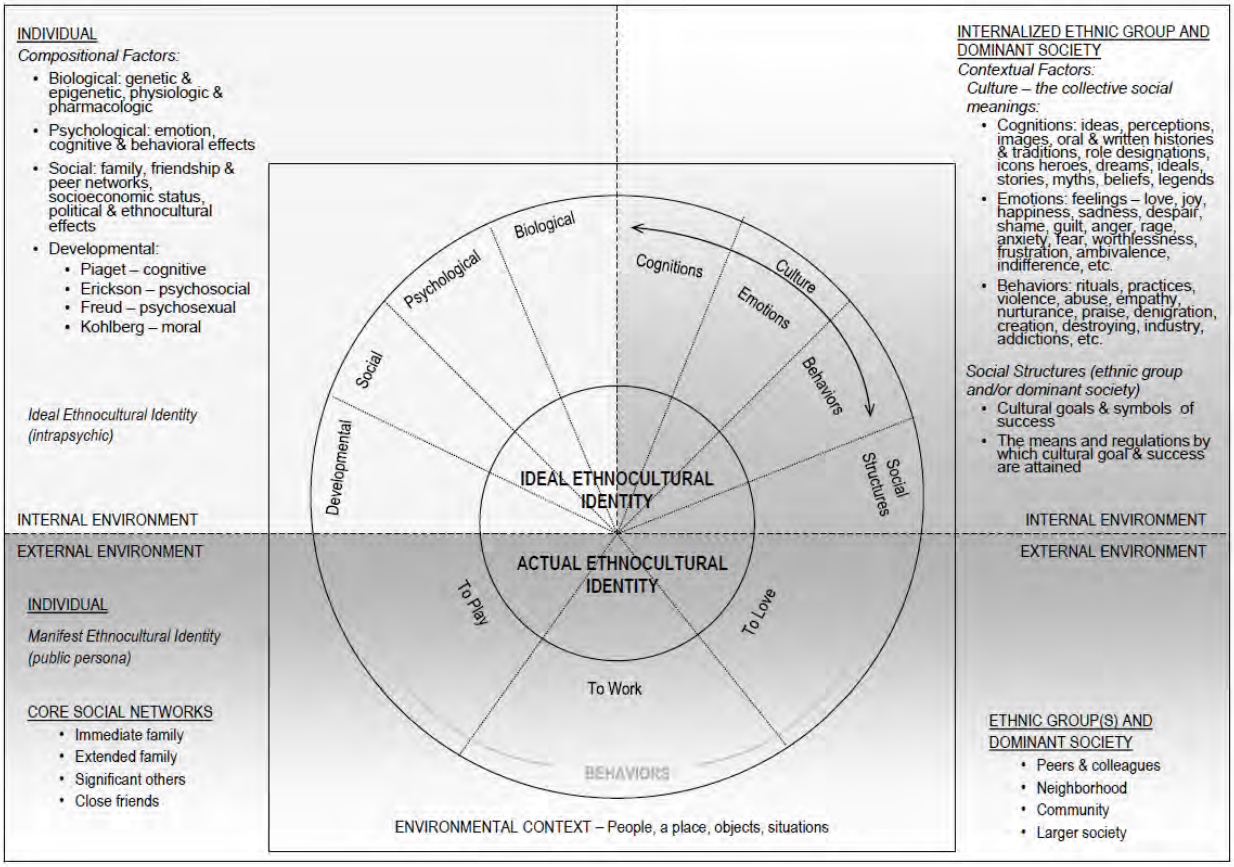



*Figure 7.* Ethnocultural Identification Dissonance Model

The relational world view of Native Hawaiian health and well-being is framed from an Indigenous perspective with interdependence, relationships, harmony, and balance at the center of the sphere, encircled by ancestors, culture, land, family, community, and nation (McCubbin, Kehl, Strom, & McCubbin, 2010). The core of this model is connectedness.

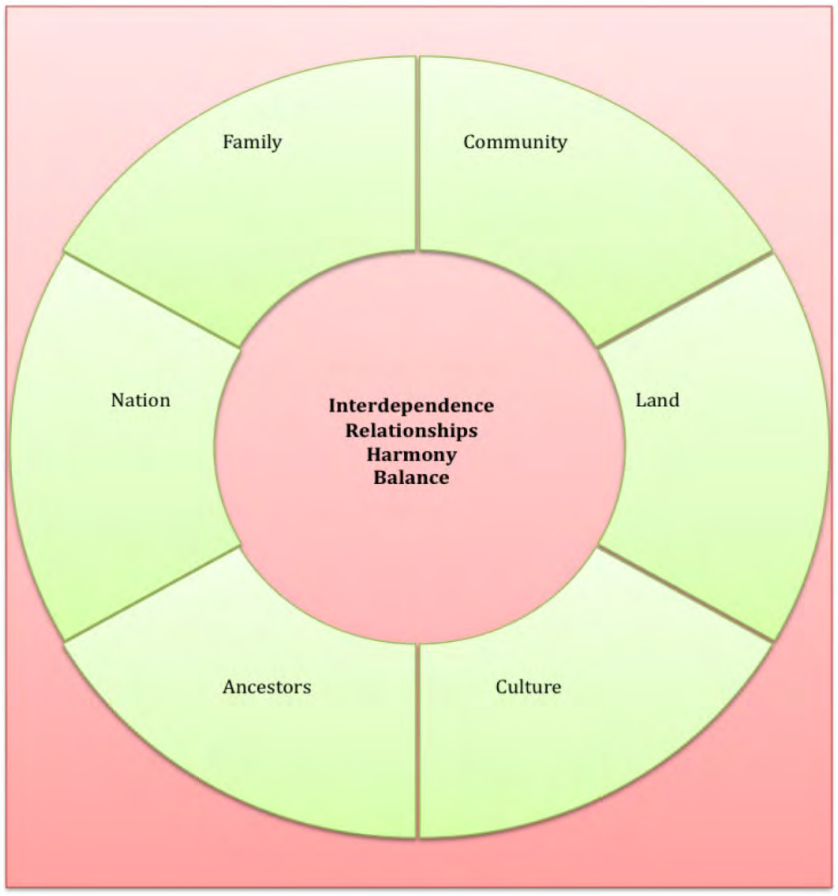



*Figure 8.* Relational worldview of Native Hawaiian health

The *Nā Pou Kihi* model of Native Hawaiian health and well-being includes four important domains (Kaholokula, 2014; Native Hawaiian Health Task Force & Kaholokula, 2016):

1. Ke Ao ʻŌiwi
   Native Hawaiian social and cultural space associated with health and well-being
2. Ka Mālama Nohona
   The quality of the environments where Native Hawaiians live, work, learn, play, and age that affect health and well-being
3. Ka Hana Pono
   Lifestyle choices and aspirations as Native Hawaiians strive for optimal health and well-being
4. Ka Wai Ola
   Attaining social justice through educational achievement and economic success for Native Hawaiians

Like the four corner posts of a solid house, each of the elements of *Nā Pou Kihi* are essential for optimal health. Figure 3 (above) also illustrates the alignment of *Nā Pou Kihi* with the social and cultural determinants of health.

ʻO ke kahua ma mua, ma hope ke kūkulu.

*The site first, and then the building.*

Learn all you can, then practice.

ʻŌlelo Noʻeau #2459
(Pukui, 1983, p. 268)

It is the hope of the contributors of *E Ola Mau a Mau* that this report will lay the foundation for future efforts.

## Content-Area Update

Many brought their manaʻo,[25] ʻike,[26] and hard work to breathe life into this report, thus making it a living document that is fluid in its recommendations and practice models. It is through these discussions and research that communities and organizations will continue to work on behalf of all of the lāhui.[27] The value of *E Ola Mau a Mau* with regard to improving the health and well-being of Native Hawaiians is critical. Health disparities cannot be adequately addressed by clinicians alone. It takes a community, including a community of health care providers, to address not only the disparities themselves, but the root causes of the disparities. Each chapter creates opportunities for dialogue within Native Hawaiian communities and establishes baseline data that can be reviewed on an ongoing basis to assist in determining needs, supports, and resources in these areas.

## The Chapters

Building upon the Historical/Cultural Task Force Report of the 1985 *E Ola Mau Health Needs Study*, the 2019 *E Ola Mau a Mau* incorporates and reorganizes the original four task force reports (i.e., historical/cultural, mental health, medical, and nutrition/dental) into five chapters that reflect the growing knowledge and changes of the past three decades. These changes include new knowledge about how history, ethnicity, and culture shape indigenous health and well-being; advances in the clinical, biomedical, and public health sciences that yield new models and theoretical constructs to explain and predict how disparities occur and how they can be ameliorated; and how a new generation of health care and policy leaders are able to envision and oversee the next iteration of the 21st-century Native Hawaiian health care delivery system.

Two new chapters have been added to this publication: 1) Data Governance, encompassing the collection, management, uses, and dissemination of data, which are critical to assessing effectiveness and efficacy while ensuring quality, privacy, and engagement of health care users; and 2) Workforce Development, which examines how the underrepresentation of Native Hawaiians among health care providers including cultural healers and practitioners, as well as among health care educators and researchers, has been addressed during the past 30 years.

**Chapter 1**

**Historical and Cultural Perspectives** grounds the reader in the essential historical events and ethnocultural elements that underpin the unique, complex identity of Native Hawaiians, Hawaii's indigenous, First Nations people. Chapter 1 sets the tone and evolving context of how and why Native Hawaiians remain in the 21st century C.E., a vibrant people with the will to rise above daunting health and social disparities, despite the historical trauma of deadly 18th- and 19th-century C.E. epidemics, the illegal overthrow of their sovereign nation, disenfranchisement, and government-sanctioned programs that attempted to obliterate their language, ways of teaching and learning, culture, health, well-being, and healing practices.

**Chapter 2**

**Mental and Behavioral Health and Wellness** draws together and critically examines the latest publications, reports, and perspectives concerning Native Hawaiian mental and behavioral health, interventions, programs, and policies based on a wholistic understanding of well-being. It identifies needs and provides guidance for the future.

**Chapter 3**

**Medicine** focuses on the five most common health disparities impacting Native Hawaiians: cardiovascular disease, diabetes, obesity, cancer, and asthma. The first three are examined within the context of cardiometabolic health and disease. The chapter presents new evidence and successful evidence-based interventions, with particular attention to interventions that involve culturally adapted programs within Native Hawaiian contexts.

**Chapter 4**

**Nutrition** reviews the current status of Native Hawaiians in Hawaiʻi with respect to nutritional aspects of health and well-being. Specific public policies that have improved Native Hawaiian nutrition since the 1985 *E Ola Mau Study* are presented. In addition, existing services and initiatives are reviewed, along with promising approaches and programs that improve Native Hawaiian nutritional status and ameliorate, control, and/or avoid chronic illness.

**Chapter 5**

**Oral Health** updates our understanding of disparities, needs, gaps, and effective and promising programs in connection with Native Hawaiian oral health, based on a review of the literature and

[25] viewpoints
[26] knowledge
[27] people

interviews conducted with Native Hawaiian and non-Native Hawaiian oral health professionals who serve the Native Hawaiian community in Hawai‘i.

**Chapter 6**

**Data Governance** asserts a uniquely Native Hawaiian cultural approach to data practices from collection to dissemination of health data and results. The chapter describes the processes by which Native Hawaiians need to address data quality and scope, undertaking analyses of large data sets with the aim of achieving data sovereignty to regain control over quantitative, qualitative, and mixed-method methodologies. This will heighten the cultural relevance and utility of Native Hawaiian health data to continually improve the quality of Native Hawaiian health practices.

**Chapter 7**

**Workforce Development** identifies and critically examines models of success that have increased the numbers of Native Hawaiian health care workers, providers, educators, and researcher/evaluators. In addition, this chapter identifies health care workforce shortages and provides strategic recommendations for filling these shortages, based on a review of initiatives, programs, and models that have accelerated or hindered progress.

Each chapter is organized into four sections:

1. **Increased Understanding**
   Advances in our knowledge since the 1985 *E Ola Mau*.
2. **Effective and Promising Approaches**
   Description of selected effective or promising approaches to improve Native Hawaiian health.
3. **Gaps**
   Areas in need of improvement to optimize Native Hawaiian health.
4. **Recommendations for Impact**
   Actions needed to attain Ola, optimal Native Hawaiian health and well-being.

In the pages that follow, the authors/contributors of the *E Ola Mau a Mau Study* have attempted to provide the reader with sufficient breadth and selected areas of depth to demonstrate the scope, impact, and meaningfulness of the Native Hawaiian Health Care Act of 1988 (P.L. 100-579) and its reauthorizations in 1992 (P.L. 102-396) and in 2010 (P.L. 111-148).

# References


‘Ahahui o nā Kauka. (2019). Website on Members information downloaded from: https://kaukahui.wordpress.com/members/

Ambrose, A. J. H., Arakawa, R.Y., Greidanus, B. D., Macdonald, P. R., Racsa, C.P., Shibuya, K.T., ...Yamada, S. (2012). Geographical maldistribution of Native Hawaiian and other Pacific Islander physicians in Hawai‘i. *Hawai‘i Journal of Medicine & Public Health, 71*(4), Supplement 1: 13-20.

Andrade, N. N. (2006, November). *Indigenous Hawaiian ethnocultural identification.* Keynote address at the Ku i Ka Lono Conference on Hawaiian Indigenous Education, Research, and Well-Being, Honolulu, HI.

Andrade, N. N. (2017, October). *Ola – An indigenous health system that could change our homeland.* American Academy of Child and Adolescent Psychiatry Jeanne Spurlock Lecture and Award on Diversity and Culture, Washington, DC.

Andrade, N. N. (2018, June). *E Ola Mau a Mau 2018 – What is the strategic and governing kuleana of Papa Ola Lōkahi?* Presentation to the Papa Ola Lōkahi Board and the Native Hawaiian Health Centers leadership. Honolulu International Airport Conference Center, Honolulu, HI.

Andrade, N. N., Goebert, D., & Hishinuma, E. (2011, May). *Kaho‘olawe: Healing a violently traumatized culture.* Presentation at the American Psychiatric Association Convention, Honolulu, HI.

Andrade, N. N., Hishinuma, E. S., McDermott, Jr., J. F., Johnson, R. C., Goebert, D. A., Makini, Jr., …Waldron, J. A. (2006). The National Center on Indigenous Hawaiian Behavioral Health study of prevalence of psychiatric disorders in Native Hawaiian adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry, 45*(1), 26-36. doi.org/10.1097/01.chi.0000184933.71917.f4

Antonio, M. C., Ahn, H. J., Ing, C. T., Dillard, A., Cassel, K., Kekauoha, B. P., & Kaholokula, J. K. (2016). Self-reported experiences of discrimination and depression in Native Hawaiians. *Hawai‘i Journal of Medicine & Public Health, 7*5(9), 266-272. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5030789/pdf/hjmph7509_0266.pdf

Aparicio, E. M., Birmingham, A., Rodrigues, E. N., Houser, C. (2018). Dual experiences of teenage parenting and homelessness among Native Hawaiian youth: A critical interpretive phenomenological analysis. *Child & Family Social Work.* 2018:1-10. https://doi.org/10.111/cfs.12618

Blaisdell, K. (1989). Historical and cultural aspects of Native Hawaiian health. *Social Process in Hawai‘i, 32,* 1–21.

Blaisdell, K., & Mokuau, N. (1991). Kānaka Maoli: Indigenous Hawaiians. In N. Mokuau (Ed.), *Handbook of social services for Asian and Pacific Islanders* (pp. 131-154). New York: Greenwood Press.

Brave Heart, M. (1998). The return to the sacred path: Healing the historical trauma and historical unresolved grief response among the Lakota through a psychoeducational group intervention. *Smith College Studies in Social Work, 68*(3), 287–305. doi:10.1080/00377319809517532

Brave Heart, M. (1999a). Gender differences in the historical grief response among the Lakota. *Journal of Health & Social Policy, 10*(4), 1–21. Retrieved from http://discoveringourstory.wisdomoftheelders.org/ht_and_grief/Brave_Heart_1999_Gender_Differences.pdf

Brave Heart, M. (1999b). Oyate Ptayela: Rebuilding the Lakota Nation through addressing historical trauma among Lakota parents. *Journal of Human Behavior in the Social Environment, 2*(1-2), 109–126. doi:10.1300/J137v09n01_08

Brave Heart, M. Y. H. (2000). Wakiksuyapi: Carrying the historical trauma of the Lakota. *Tulane Studies in Social Welfare, 21-22*, 245-266. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.452.6309&rep=rep1&type=pdf

Brave Heart, M., & DeBruyn, L. (1998). The American Indian holocaust: Healing historical unresolved grief. *American Indian & Alaska Native Mental Health Research, 8*(2), 56-78. Retrieved from http://www.ucdenver.edu/academics/colleges/PublicHealth/research/centers/CAIANH/journal/Documents/Volume%208/8%282%29_YellowHorseBraveHeart_American_Indian_Holocaust_60-82.pdf

Brave Heart-Jordan, M., & DeBruyn, L. (1995). So she may walk in balance: Integrating the impact of historical trauma in the treatment of Native American Indian women. In J. Adleman & G. Enquidanos (Eds.), *Racism in the lives of women: Testimony, theory, and guides to antiracist practice* (pp. 345–368). New York: Haworth Press.

Brayboy, B. M. J. (2005). Toward a Tribal Critical Race Theory in education. *Urban Review, 37*(5), 425-446. doi:10.1007/s11256-005-0018-y

Brayboy, B. M. J., Fann, A. J., Castagno, A. E., & Solyom, J. A. (2012). *Postsecondary education for American Indian and Alaska Natives: Higher education for nation building and self-determination.* San Francisco, CA: Wiley Periodicals, Inc.

Carlton, B., Goebert, D., Bell, C. K., Horton, M., Else, I., Marcinowski, M., & Yamada, L. (2011). Integrating cultural values into mental health treatment. *Multidisciplinary Research on Hawaiian Well Being, 7*, 159-184.

Carlton, B. S., Goebert, D. A., Miyamoto, R. H., Andrade, N. N., Hishinuma, E. S., Makini, G. K., . . . Nishimura, S. T. (2006). Resilience, family adversity, and well-being among Hawaiian and non-Hawaiian adolescents. *International Journal of Social Psychiatry, 52*(4), 291-308. doi:10.1177/002076400605136

Catlin, B., Jovaag, A., Givens, M., & Van Dijk, J. W. (2016). *2016 County health rankings: Wisconsin.* Madison, WI: Population Health Institute, School of Medicine and Public Health, University of Wisconsin-Madison. Retrieved from http://www.countyhealthrankings.org/sites/default/files/state/downloads/CHR2016_WI.pdf

Charlot, J. (1983). *Chanting the universe – Hawaiian religious culture.* Hong Kong: Emphasis International Limited.

Chetty, R., Stepner, M., Abraham, S., Lin, S., Scudent, B., Turner, N., …Cutler, D. (2016). The association between income and life expectancy in the United States, 2001-2014. *Journal of the American Medical Association, 315*(16), 1750-1766. doi:10.1001/jama.2016.4226

Clark, R., Anderson, N. B., Clark, V. R., & Williams, D. R. (1999). Racism as a stressor for African Americans: A biopsychosocial model. *American Psychologist, 54*(10), 805-816. Retrieved from http://www.isr.umich.edu/williams/All%20Publications/DRW%20pubs%201999/racism%20as%20a%20stressor%20for%20african%20americans.pdf

Colby, S., & Ortman, J. (2015). Projections of the size and composition of the U.S. population: 2014 to 2060. *Census Population Reports*. Washington, DC: U.S. Census Bureau.

Cook, B. P. I., Withy, K., & Tarallo-Jensen, L. (2003). Cultural trauma, Hawaiian spirituality, and contemporary health status. *California Journal of Health Promotion, 1*, 10-24. Retrieved from http://cjhp.fullerton.edu/Volume1_2003/IssueHI-TEXTONLY/10-24-cook.pdf

Crabbe, K. M. (1999). Conceptions of depression: A Hawaiian perspective. *Pacific Health Dialog, 6*(1), 122-126. Retrieved from http://pacifichealthdialog.org.fj/Volume206/No120Health20in20Fiji20and20The20Pacific/Viewpoints20and20Perspectives/Conceptions20of20depression20a20Hawaiian20perspective.pdf

DeCambra, H., Marshall, W. E., & Ono, M. (1998). Hoʻomau ke Ola: "To perpetuate life as it was meant to be." In N. Mokuau, L. G. Epstein, G. Pacheco, & J. W. Quinlan (Eds.), *Responding to Pacific Islanders: Culturally competent perspectives for substance abuse prevention* (pp. 73-96). Washington, DC: Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services. Retrieved from https://files.eric.ed.gov/fulltext/ED449290.pdf

Denham, A. R. (2008). Rethinking historical trauma: Narratives of resilience. *Transcultural Psychiatry, 45*(3), 391-414. doi:10.1177/1363461508094673

Denzin, N. K., & Lincoln, Y. S. (2008). Introduction: Critical methodologies and indigenous inquiry. In N. K. Denzin, Y. S. Lincoln, & L. T. Smith (Eds.), *Handbook of critical and indigenous methodologies* (pp. 1-20). Los Angeles, CA: Sage Publications, Inc.

Donlin, A.L. (2010). When all the kahuna are gone: Evaluating Hawaii's traditional Hawaiian healers' law. *Asian-Pacific Law & Policy Journal, 12*, 210-330.

Dougherty M. (1992). *To steal a kingdom: Probing Hawaiian history.* Waimanalo, HI: Island Style Press.

Engel, G. L. (1997). From biomedical to biopsychosocial: Being scientific in the human domain. *Psychosomatics, 38*(6), 521-528. doi:10.1016/S0033-3182(97)71396-3

Galang, B., & Foye, T. (2014, April). Traditional healing: Laws, politics, protocols and kupuna councils. Papa Ola Lōkahi presentation, Honolulu, HI.

Genegabus, J. (2017, June 18). Shaping hearts and minds. *Honolulu Star Advertiser*.

Goebert, D., & Sugimoto-Matsuda, J. (2017). Advancing suicide prevention in Hawai'i. *Hawai'i Journal of Medicine & Public Health, 76*(11), 310-313. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5694974/

Goo, S. K. (2015, April). After 200 years, Native Hawaiians make a comeback. Pew Research Center Report downloaded 02/23/2018: http://www.pewresearch.org/fact-tank/2015/04/06/native-hawaiian-population/

Goodyear-Kaʻopua, N., Hussey, I., & Wright, E. K. (2014). *A nation rising: Hawaiian movements for life, land, and sovereignty.* Durham, NC: Duke University Press. Retrieved from https://www.dukeupress.edu/a-nation-rising

Grande, S. (2008). Red pedagogy: The un-methodology. In N. K. Denzin, Y. S. Lincoln, & L. T. Smith (Eds.), *Handbook of critical and indigenous methodologies* (pp. 233-254). Los Angeles, CA: Sage Publications, Inc.

Handy, E. S. C., & Pukui, M. K. (1998). *The Polynesian family system in Ka-'U, Hawai'i.* Honolulu, HI: Mutual Publishing.

Hawai'inuiākea School of Hawaiian Knowledge. (2018). Hawai'inuiākea School of Hawaiian Knowledge. Retrieved from http://www.catalog.hawaii.edu/schoolscolleges/hawaiian/general.htm

Hawai'i Health Data Warehouse, Hawai'i State Department of Health, Office of Health Status Monitoring, Vital Statistics; United States Census. (2016). *Pregnancy rate in Hawai'i for females aged 15-19 years.*

Hawai'i State Department of Health. (2011). *Hawaii Behavioral Risk Factor Surveillance System*. Retrieved from http://hawaii.gov/health/statistics/brfss/index.html

Hawai'i State Department of Health Alcohol and Drug Abuse Division, ADAD. (2019, December). *Report to the Thirtieth Legislature State of Hawai'i 2019.* Downloaded from: https://health.hawaii.gov/opppd/files/2019/01/2019-ADAD-Leg-Report.pdf

Heckler, Margaret M. (1985). *Report of the Secretary's Task Force Report on Black and Minority Health Volume I: Executive Summary.* U.S. Department of Health and Human Services.

Hewett, K., Alailima, C., Kamakea-Ohelo, K., Mann, K. (2001). O ke Aloha ka Mea i Hoʻola 'Ai – Compassion is the healer: An indigenous peoples healing conference, Hawai'i. (2000, October). *Pacific Health Dialog* 8(2), 417-422.

Hill, D. L. (2006). Sense of belonging as connectedness, American Indian worldview, and mental health. *Archives of Psychiatric Nursing, 20*(5), 210-216.

Indian Health Service. (2019). IHS profile. Downloaded from IHS website: https://www.ihs.gov/newsroom/factsheets/ihsprofile/

Inglebert, E., & Krebill-Prather, R. L. (2011). *Views and perspectives of Native educational success: A national survey of American Indians, Alaska Natives, Native Hawaiians and others associated with Indian education.* Pullman, WA: Washington St. University. Retrieved from http://epub.sub.uni-hamburg.de/epub/volltexte/2015/38322/pdf/native_student_success_final_report.pdf

Ka Huakaʻi. (2014). The Kamehameha Schools. Accessed: http://www.ksbe.edu/_assets/spi/pdfs/kh/Ka_Huakai_2014/Chapter_One_-_Native_Hawaiian_Population.pdf on 5 September 2017).

Kaholokula, J. K. (2007). Colonialism, acculturation, and depression among Kānaka Maoli of Hawaiʻi. In P. Culbertson & M. N. Agee (Eds., with C. O. Makasiale), *Penina Uliuli: Confronting challenges in mental health for Pacific peoples* (pp. 180-195). Honolulu, HI: University of Hawaiʻi Press.

Kaholokula, J. K. (2013, August). Social determinants of health and health disparities in Native Hawaiians. Translational Health Disparities Course, National Institutes of Health Campus, Bethesda, MD. NIH, NIMHD DOI:10.13140/RG.2.1.1785.0646

Kaholokula, J. K. A. (2014). Achieving social and health equity in Hawaiʻi. In A. Yamashiro & N. Goodyear-Kaopua (Eds.), *The value of Hawaiʻi 2: Ancestral roots, oceanic visions* (pp. 254-264). Honolulu, HI: University of Hawaiʻi Press.

Kaholokula, J. K. (2016). Racism and physical health disparities. In A. N. Alvarez, C. T. H. Liang, & H. A. Neville (Eds.), *The cost of racism for people of color: Contextualizing experiences of discrimination* (pp. 163–188). Washington, DC: American Psychological Association. http://dx.doi.org/10.1037/14852-008

Kaholokula, J. K. (2017). Mauli ola: Pathways to optimal Kanaka ʻŌiwi health. In W. K. M. Lee & M. A. Look (Eds.), *Hoʻi Hou Ka Mauli Ola: Pathways to Native Hawaiian Health, Hawaiʻinuiākea Monograph* (No. 5, pp. 2-22). Honolulu, HI: University of Hawaiʻi Press.

Kaholokula, J. K., Antonio, M. C., Ing, C. K., Hermosura, A., Hall, K. E., Knight, R., & Wills, T. A. (2017). The effects of perceived racism on psychological distress mediated by venting and disengagement coping in Native Hawaiians. *BMC Psychology, 5*, 2. Retrieved from https://bmcpsychology.biomedcentral.com/track/pdf/10.1186/s40359-017-0171-6?site=bmcpsychology.biomedcentral.com

Kaholokula, J. K., Grandinetti, A., Keller, S., Nacapoy, A. H., Kingi, T. K., & Mau, M. K. (2012). Association between perceived racism and physiological stress indices in Native Hawaiians. *Journal of Behavioral Medicine, 35*(1), 27-37. doi:10.1007/s10865-011-9330- z

Kaholokula, J. K., Iwane, M. K., & Nacapoy, A. H. (2010). Effects of perceived racism and acculturation on hypertension in Native Hawaiians. *Hawaiʻi Medical Journal, 69*(5 Supplement 2), 11-15. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3158444/pdf/hmj6905_suppl2_0011.pdf

Kaholokula, J., Nacapoy, A., & Dang, K. (2009). Social justice as a public health imperative for Kānaka Maoli. *AlterNative: An International Journal of Indigenous Peoples, 5*(2), 116-137. Retrieved from https://www.researchgate.net/profile/Joseph_Kaholokula/publication/259190949_Social_Justice_as_a_Public_Health_Imperative_for_Kanaka_Maoli/links/0c96052a50c929d287000000/Social-Justice-as-a-Public-Health-Imperative-for-Kanaka-Maoli.pdf

Kaholokula, J. K., Nacapoy, A. H., Grandinetti, A., & Chang, H. K. (2008). Association between acculturation modes and Type 2 diabetes among Native Hawaiians. *Diabetes Care, 31*(4), 698-700. doi:10.2337/dc07-1560

Kanahele, G. (1986). *Kū kanaka/Stand tall: A search for Hawaiian values*. Honolulu, HI: University of Hawaiʻi Press.

Kanaʻiaupuni, S. K., Malone, N., & Ishibashi, K. (2005). *Ka Huakaʻi: Native Hawaiian educational assessment, 2005*. Honolulu, HI: Kamehameha Schools.

Komro, K. A., Livingston, M. D., Markowitz, S., & Wagenaar, A. C. (2016). The effect of an increased minimum wage on infant mortality and birth weight. *American Journal of Public Health, 106*(8), 1514-1516. doi:10.2105/AJPH.2016.303268

Leininger, M. M., & McFarland, M. R. (2005). *Culture care diversity and universality: A worldwide nursing theory*. Burlington, MA: Jones & Bartlett Learning.

Liddell, J., & Burnette, C. E. (2017). Culturally-informed interventions for substance abuse among indigenous youth in the United States: A review. *Journal of Evidence-Informed Social Work, 14*(5), 329-359.

Like, R. K., Gray, J. O., & Yurow, J. P. (2013, August). Native voices, native healing: A community effort to improve behavioral health in Hawaiʻi communities. Panel presentation at the American Psychological Association Convention, Honolulu, HI. Downloaded from: https://www.apa.org/news/press/releases/2013/08/behavioral-health.pdf

Liu, D. M., & Alameda, C. K. (2011). Social determinants of health for Native Hawaiian children and adolescents. *Hawaiʻi Medical Journal, 70*(11 Supplement 2), 9-14. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3254224/pdf/hmj7011_suppl2_0009.pdf

Look, M. A., Trask-Batti, M. K., Agres, R., Mau, M. L., & Kaholokula, J. K. (2013). *Assessment and priorities for health and well-being in Native Hawaiians and other Pacific peoples.* Honolulu, HI: Center for Native and Pacific Health Disparities Research.

Masten, A. S. (2007). Resilience in developing systems: Progress and promise as the fourth wave rises. *Development & Psychopathology, 19*(3), 921-930. doi:10.1017/S0954579407000442

Matsuoka, J. K. (Guest Ed.). (2007). Guest editorial: How changes in the Pacific/Asia region are shaping social work education and practice in Hawaiʻi. *Social Work, 52*(3), 197-199. doi:10.1093/sw/52.3.197

Mau, M. K., Wong, K. N., Efird, J., West, M., Saito, E. P., & Maddock, J. (2008). Environmental factors of obesity in communities with native Hawaiians. *Hawaiʻi Medical Journal, 67*(9), 233-236. Retrieved from http://hjmph.org/HMJ_Sep08.pdf

McDermott, J. F., & Andrade, N. N. (2011). *People and cultures of Hawaiʻi: The evolution of culture and ethnicity*. University of Hawaiʻi Press.

McCubbin, H. I., Kehl, L., Strom, I., & McCubbin, L. (2010). The well-being and health of Native Hawaiians. [Interdisciplinary Research Monograph]. Myron B. Thompson School of Social Work, University of Hawai'i at Mānoa, and Pullman Washington, Washington State University.

McCubbin, L. D., & Antonio, M. (2012). Discrimination and obesity among Native Hawaiians. *Hawai'i Journal of Medicine & Public Health, 71*(12), 346-352. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3525333/pdf/hjmph7112_0346.pdf

McCubbin, L. D., Ishisaka, M. E., & McCubbin, H. I. (2007). The Kanaka Maoli: Native Hawaiians and their testimony of trauma and resilience. In A. J. Marsella, J. L. Johnson, P. Watson, & J. Gryczynski (Eds.), *Ethnocultural perspectives on disaster and trauma: Foundations, issues, and applications* (pp. 271-298). New York: Springer.

McGregor, D. P., Morelli, P. T., Matsuoka, J. K., & Minerbi, L. (2003). An ecological model of wellbeing. In H. A. Becker & F. Vanclay (Eds.), *The international handbook of social impact assessment: Conceptual and methodological advances* (pp. 108-128). Cheltenham, UK: Edward Elgar.

Melville, L. (1969). *Children of the rainbow: A book concerning the religion, legends, and gods of the natives of pre-Christian Hawaii*. Wheaton, IL: Theosophical Publishing House.

Meyer, M. A. (2001). Our own liberation: Reflections on Hawaiian epistemology. *Contemporary Pacific*, *13*(1), 124–148. Retrieved from https://scholarspace.manoa.hawaii.edu/bitstream/10125/13319/1/v13n1-124-148-dialogue.pdf

Meyer, M. A. (2003). Hawaiian hermeneutics and the triangulation of meaning: Gross, subtle, causal. *Social Justice*, *30*(4), 54-63.

Meyer, M. A. (2008). Indigenous and authentic: Hawaiian epistemology and the triangulation of meaning. In N. K. Denzin, Y. S. Lincoln, & L. T. Smith (Eds.), *Handbook of critical and indigenous methodologies* (pp. 217-232). Los Angeles, CA: Sage Publications, Inc.

Minton, N., Ta'afaki, J., & Ng-Osorio, J. (2017, January). 'Ike Ao Pono, University of Hawai'i at Mānoa School of Nursing Native Hawaiian, Pacific Islander and Native American advancement and promotion program report. *University of Hawai'i School of Social Work.*

Mitchell, H. K. (1977). Mele o Kaho'olawe. [Recorded by Olomana.] On *And so we are* [Vinyl LP]. Seabird Sound – 1002.

Mohatt, N. V., Thompson, A. B., Thai, N. D., & Tebes, J. K. (2014). Historical trauma as public narrative: A conceptual review of how history impacts present-day health. *Social Science & Medicine, 106,* 128-136. doi:10.1016/j.socscimed.2014.01.043

Mokuau, N., & Matsuoka, J. (1995). Turbulence among a native people: Social work practice with Hawaiians. *Social Work, 40*(4), 465-472. doi:10.1093/sw/40.4.465

Mokuau, N., Stotzer, R., De Mattos, M., Kreif, T., Chang, L., Takamura, J., …Beppu, K.A. (2016). *Celebrating our 80th Anniversary – Myron B. Thompson School of Social Work, University of Hawai'i at Mānoa.* Honolulu, HI: Pacific Basin Publications.

Morelli, P. T., & Mataira, P. J. (2010). Indigenizing evaluation research: A long-awaited paradigm shift. *Journal of Indigenous Voices in Social Work, 1*(1), 1-12. Retrieved from http://hl-128-171-57-22.library.manoa.hawaii.edu/bitstream/10125/18773/1/v1i2_05morelli.pdf

National Association of State Alcohol and Drug Abuse Directors (ADAD). (2009, February). Hawai'i Report. Downloaded from: https://nasadad.org/wp-content/uploads/2010/12/8-09FebHawaii2pagerfinal.pdf

National Healthcare Disparities Report. (2013). U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality.

Native Hawaiian Health Task Force & Kaholokula, J. (2016). Native Hawaiian Health Task Force: 2017 Preliminary Report and Recommendations. Honolulu, HI: Hawaii State Legislature.

Naya, S. (2007). *Income distribution and poverty alleviation for the Native Hawaiian community.* Honolulu, HI: East-West Center Working Papers (No. 91). Retrieved from https://www.eastwestcenter.org/system/tdf/private/ECONwp091.pdf?file=1&type=node&id=32205

Neumayer, E., & Plumper, T. (2016). Inequalities of income and inequalities of longevity: A cross-country study. *American Journal of Public Health, 106*(1), 160-165. doi:10.2105/AJPH.2015.302849

Office of Hawaiian Affairs, Research Division, Demography. (2017). *Native Hawaiian Population Enumerations in Hawai'i.* Honolulu, HI. Retrieved from https://19of32x2yl33s8o4xza0gf14-wpengine.netdna-ssl.com/wp-content/uploads/RPT_Native-Hawaiian-Population-Enumerations.pdf

Organization for Economic Cooperation and Development – OECD (2017). Health at a glance 2017: OCED Indicators – Overview of health system performance in the United States. Downloaded from: https://www.oecd.org/unitedstates/Health-at-a-Glance-2017-Key-Findings-UNITED-STATES.pdf

Papa Ola Lōkahi. (2018). Data sourced from Uniform Data System reports & the Native Health Data Card.

Papa Ola Lōkahi Historical/Cultural Task Force. (2017, March 15). E Ola Mau a Mau small discussion and oral report to all task forces. Honolulu International Airport Conference Center: Honolulu, HI.

Papanicolas, I., Woskie, L. R., & Jha, A. K. (2018). Health care spending in the United States and other high-income countries. *Journal of the American Medical Association, 319*(10): 1024-1039.

Paradies, Y., Priest, N., Ben, J., Truong, M., Gupta, A., Pieterse, A., . . . Gee, G. (2013). Racism as a determinant of health: A protocol for conducting a systematic review and meta-analysis. *Systematic Review, 2,* 85. Retrieved from https://systematicreviewsjournal.biomedcentral.com/track/pdf/10.1186/2046-4053-2-85?site=systematicreviewsjournal.biomedcentral.com

Pe‘a, J. L. (1990, November 17). *The prevention program of integrating healing: Based on the Hawaiian concept of Pā-ola (Quick Healing).* Kailua-Kona, HI: The Institute of Pā-Ola Science of Integrating Healing.
Pokhrel, P., & Herzog, T. A. (2014). Historical trauma and substance use among Native Hawaiian college students. *American Journal of Health Behavior*, *38*(3), 420-429. doi:10.5993/AJHB.38.3.11
Protect Kaho‘olawe ‘Ohana. (2018). *Protect Kaho‘olawe ‘Ohana.* Retrieved from http://www.kahoolawe.org
Pukui, M. K. (1983). *‘Olelo no‘eau: Hawaiian proverbs & poetical sayings*. Bernice P. Bishop Museum Special Publication No. 71. Honolulu, HI: Bishop Museum Press.
Pukui, M. K., Haertig, E. W., & Lee, C. A. (1972). *Nana i ke kumu (Look to the source)* (Vols. 1 & 2). Honolulu, HI: Queen Lili‘uokalani Children’s Center.
Reyes, N. A. (2014). The multiplicity and intersectionality of indigenous identities. In D. Mitchell, Jr. (Ed.), *Intersectionality in higher education: Theory, research, and praxis* (pp. 45-54). New York: Peter Lang.
Reyes, N. A. (2016). *“What am I doing to be a good ancestor?” An indigenized phenomenology of giving back among Native college graduates.* Unpublished doctoral dissertation, University of Texas at San Antonio.
Rezentes, W. C. (1996). *Ka lama kukui: Hawaiian psychology: An introduction.* Honolulu, HI: ‘A‘ali‘i Books.
Sai, D. K. (2015). *Ua Mau Ke Ea: Sovereignty endures: An overview of the political and legal history of the Hawaiian Islands* (3rd ed.). Honolulu, HI: Pu‘a Foundation. Retrieved from http://www.puafoundation.org/product/ua-mau-ke-ea-sovereignty-endures-textbook/
Satcher, D. (2001). *Mental health: Culture, race, and ethnicity—A supplement to mental health: A report of the surgeon general*. Washington, DC: U.S. Department of Health and Human Services.
Silva, N. K. (2004). *Aloha betrayed: Native Hawaiian resistance to American colonialism.* Durham, NC: Duke University Press.
Singh, P. (2002). Pedagogising knowledge: Bernstein’s theory of the pedagogic. *British Journal of Sociology of Education, 23*(4), 571-582. doi:10.1080/0142569022000038422
Smedley, B. D., Stith, A. Y., & Nelson, A. R. (Eds.). (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care.* Washington, DC: National Academy Press. Retrieved from https://download.nap.edu/cart/download.cgi?record_id=10260
Smith, L. T. (1999). *Decolonizing methodologies: Research and indigenous peoples*. New York: Zed Books Ltd.
Streltzer, J., Rezentes, W. C., & Arakaki, M. (1996). Does acculturation influence psychosocial adaptation and well-being in native Hawaiians? *International Journal of Social Psychiatry*, *42*(1), 28-37. doi:10.1177/002076409604200104
Trask, H. (1993). *From a Native daughter: Colonialism and sovereignty in Hawai‘i.* Honolulu, HI: University of Hawai‘i Press.
Trask, H. K. (1994). Kupa‘a ‘Aina: Native Hawaiian nationalism in Hawai‘i. In U. Hasager & J. Friedman (Eds.), *Hawai‘i: Return to nationhood* (pp. 15-32). Copenhagen, Denmark: International Work Group for Indigenous Affairs.
Trinidad, A. M. O. (2009). Toward *kuleana* (responsibility): A case study of a contextually grounded intervention for Native Hawaiian youth and young adults. *Aggression & Violent Behavior, 14*, 488–498. doi:10.1016/j.avb.2009.07.008
Trinidad, A. M. (2012). Critical Indigenous pedagogy of place: A framework to Indigenize a youth food justice movement. *Journal of Indigenous Social Development, 1*(1), 1-17. Retrieved from http://hl-128-171-57-22.library.manoa.hawaii.edu/bitstream/10125/21977/1/v1i1_03trinidad.pdf
United State Census. (2010). *Census Redistricting Data (Public Law 94-171) Summary File (February 2011);* calculations by the Hawaii State Department of Business, Economic Development & Tourism, Hawaii State Data Center. Retrieved from http://dbedt.hawaii.gov/economic/databook/2010-individual/_01/
United States Census. (2015). *New census bureau report analyzes U.S. population projections.* Retrieved from https://www.census.gov/newsroom/press-releases/2015/cb15-tps16.html
United States Census. (2018). *U.S. and world population clock.* Retrieved from https://www.census.gov/popclock/
Valeri, V. (1985). *Kingship and sacrifice*. Chicago, IL: University of Chicago Press.
Wilson, A. C. (2004). Introduction: Indigenous knowledge recovery is Indigenous empowerment. *American Indian Quarterly*, *28*(3), 359-372. doi:10.1353/aiq.2004.0111
Whitbeck, L. B., Adams, G. W., Hoyt, D. R., & Chen, X. (2004). Conceptualizing and measuring historical trauma among American Indian people. *American Journal of Community Psychology*, *33*(3-4), 119-130. doi:10.1023/B:AJCP.0000027000.77357.31
Wong-Wilson, M. N. N. (2016). *Native Hawaiian well-being at Hawai‘i Community College: An initiative for academic success.* Unpublished dissertation, University of Waikato, New Zealand.
World Health Organization. (2018). *Backgrounder 3: Key concepts.* Retrieved from http://www.who.int/social_determinants/thecommission/finalreport/key_concepts/en/
Wu, Y., Braun, K., Onaka, A., Horiuchi, B. Y., Tottori, C. J., & Wilkens, L. (2017). Life expectancies in Hawai‘i: A multi-ethnic analysis of 2010 life tables. *Hawai‘i Journal of Medicine & Public Health, 76*(1), 9-14. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5226016/pdf/hjmph7601_0009.pdf
Yuan, S., Stern, I. R., Gauci, K. T., & Liu, L. (2018). *Street youth study*. Honolulu, HI: University of Hawai‘i at Mānoa, Center on Family.
Yuen, N. Y., Nahulu, L. B., Hishinuma, E. S., & Miyamoto, R. H. (2000). Cultural identification and attempted suicide in Native Hawaiian adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry*, *39*(3), 360-367. doi:10.1097/00004583-200003000-00019
Yurow, J. P., & Daniels, D. (2019, June). State approaches to culturally competent services. Presentation at the 2019 Annual Meeting of the Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment

(CSAT)/Center for Substance Abuse Prevention (CSAP), Bethesda, MD. Downloaded from: https://nasadad.org/wp-content/uploads/2019/06/Day-2-session-4-Culturally-Competent-Services.pdf



# Chapter One:
## *Historical and Cultural Perspectives*

# Historical and Cultural Perspectives

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Kim Kuʻulei Birnie, Sheri Daniels, Shaylin Chock, Anaeliz Colon,
Hailama Farden, Babette Galang, Blane Garcia, Pearl Ulunuikamamalu Kanakaʻole Garmon*,
Loretta Hussey, Betty Jenkins, Nanette Kapulani Mossman Judd, Aletha Kaohi, Momi Lovell,
Stanley Lum, George Makini, Eli Nāhulu, Asia Olivieri, Mark Patterson,
Adriano (Puna) Sabagala, Dexter Soares, Hardy Spoehr, DeDe Young

**Haliʻa Aloha[1]: Pearl Ulunuikamamalu Kanakaʻole Garmon, an esteemed kupuna[2] and Traditional Native Hawaiian cultural practitioner, ua hala[3] on May 10, 2018.*

**Executive Summary**

***Increased Understanding***

In 30 years, about 5,000 publications, video/audio recordings, and reports on Native Hawaiian history and culture impacting heath, well-being, and healing practices have been produced. Findings include:

- Native Hawaiians were ocean wayfinders from Tahiti and the Marquesas who made Hawaiʻi landfall from the late 3rd c. C.E. They sailed to the South Pacific and back, bringing more people, domestic plants and animals, and implements to create a distinct society, culture, and ethnocultural identity.
- *Hōkūleʻa* and its sister voyaging canoes proved the accuracy of non-instrument navigation and the prowess of Hawaiian wayfinders. *Hōkūleʻa* completed its circumnavigation of the world in June 2017.
- By the 11th c. C.E., Hawaiʻi consisted of well-developed island kingdoms. By 1810 C.E., King Kamehameha I established a monarchy and multi-island nation state. Native Hawaiians are the lineal descendants of these first-nation people who currently make up 21% (294,000) of Hawaii's total population of 1.4 million.
- A Pew Research Center study showed: When Captain Cook arrived in 1778, Hawaii's non-moneyed socioeconomic system of agriculture, aquaculture, and optimal land and water resource management supported an estimated population of 683,000 Native Hawaiians.
- Europeans and Americans brought infectious disease epidemics and changes to the Hawaiian socioeconomic, political, and religious-spiritual system, lifestyle, and food production, decimating the native population by 84%. Between 1836-1838, virtually no native child lived beyond 2 years. By 1840, only 109,280 Native Hawaiians remained.
- Despite the adverse European-American impact on pre- and post-contact Hawaiʻi that attempted to diminish the Native Hawaiian culture, cultural practices, and language, from 1985 to the present there has been a resurgence of Native Hawaiian language use and a demonstrated commitment by schools at the preschool, K-12, and college levels to teach and perpetuate Native Hawaiian language, cultural practices, and scholarship.
- History has revealed the ways in which distrust, disparities, and injustice in healthcare stemming from foreign desires, diseases, and oppression can be overcome by Power, Protection, Prevention, and Perpetuation of Intact Families:

[1] to remember fondly
[2] elder, ancestor
[3] passed away, died

*In 1804, Kamehameha I used his power to direct ships' doctors to train kāhuna[4] (Hawaiian healers) and stopped the ma'i ōku'u, "squatting disease," possibly cholera. From 1836 to 1838, when no Hawaiian child lived beyond 2 years, a little girl was protected by her physician father and lived…to be Queen Emma, wife of Kamehameha IV—founders of The Queen's Hospital and Health Systems. In 1853, the smallpox epidemic introduced immunization and prevention. The 1866 quarantine law fractured families to halt the ravages of leprosy. It spawned deep distrust and disparities of healthcare that continue today. It taught us that perpetuation of intact families is essential to the health and well-being of our people. Power, protection, prevention and perpetuation…It's about our history and culture being taught and practiced in Hawaiian families.*

Benjamin B. C. Young, MD
Kupuna and History of Medicine Scholar

***Effective and Promising Approaches***

- Papa Ola Lōkahi[5]—with limited resources and statutory authority—fulfills its purposes to sustain the cooperation of a statewide network of public and private organizations that form the Native Hawaiian Health Care Systems.
- Federal, state, and private organizations have provided funding and developed programs that have moderately advanced, and inconsistently sustained, Native Hawaiian culture, biomedical, psychosocial, and disparities research, and health promotion, prevention, and interventions, including traditional Hawaiian cultural interventions.
- Hawaiian organizations (e.g., Office of Hawaiian Affairs, Papa Ola Lōkahi, E Ola Mau, ALU LIKE, Kamehameha Schools, Pūnana Leo, The Queen's Health Systems, Queen Lili'uokalani Trust, Association of Hawaiian Civic Clubs, and King William Charles Lunalilo Trust) have developed and are executing strategic plans advancing Native Hawaiian education, social services, cultural practices, and the health and well-being of parents/prenates, infants, children, adolescents, adults, and elders.
- The University of Hawai'i has implemented strategic plans advancing Hawaiian studies, language and culture, a School of Hawaiian Knowledge, a College of Hawaiian Language, and a Department of Native Hawaiian Health, Native Hawaiian Centers of Excellence in the Schools of Law and Medicine, a Native Hawaiian and Indigenous Health specialization in the School of Social Work and Public Health, and a program within the School of Nursing to promote, mentor and prepare nursing professionals to support the health, well-being, and recovery of Native Hawaiians/Pacific Islanders. Hawaii's private universities have also committed to the advancement of Native Hawaiian culture and education. Chaminade University is a Native Hawaiian-Serving University with a dedicated programmatic focus on advancing Native Hawaiians along with Native Hawaiian culture. Hawai'i Pacific University's Windward O'ahu campus has a program that teaches the cultivation of wetland taro, a major Native Hawaiian crop staple that grows in the communities within the windward district of O'ahu.
- Increasing numbers of cultural and sacred sites have been restored and are now protected through state, federal, and private funding, including robust volunteerism, throughout the Hawaiian archipelago. Healing sites are maintained.
- Multimedia communications on cable television programs and online websites, platforms, and online applications have significantly increased access to education and practical training in Native Hawaiian language and culture.

***Gaps***

- Native Hawaiian health and wellness programs/activities form a quasi-health and wellness system made up of semi-autonomous components with inconsistent levels of effectiveness and quality.
- University curricula do not exist that would train Healthcare Administrators to develop and manage health care services, personnel, finances, facilities, and systems that serve Native Hawaiians and sustain networks of partnerships that appropriately combine traditional Native Hawaiian healing and cultural practices with Western allopathic and osteopathic models, and Eastern and alternative treatment protocols.
- Papa Ola Lōkahi's statutory authority and budget are insufficient to direct, coordinate, plan, and successfully execute the government, education, research, and clinical activities that can transform the present system into a

[4] healer, master, sorcerer, priest
[5] "Board of Health, wellness, and unity in body, mind, spirit and environment"

clearly defined, effective Native Hawaiian Health System of Care. In addition, Papa Ola Lōkahi must have the funding to establish and successfully execute a plan to accelerate its inter-connectedness with previously described Native Hawaiian agencies to increase community engagement programs and culturally adapted interventions that could align strategies and leverage resources to create innovative models and projects to serve Native Hawaiians across the lifespan—both in Hawai'i and on the continental U.S.

- The number of master-level kupuna[6] Native Hawaiian traditional healers and cultural practitioners is decreasing as these elders are lost to morbidity and mortality. Exacerbating this problem is that most Native Hawaiian, culture-centered health and wellness programs are not reimbursed by health insurers. There are insufficient outreach, funding, and resources to operate an effective process of certification (and re-certification) and advanced training for proficient Native Hawaiian traditional healers and cultural practitioners to sustain their practice.
- There does not exist a Native Hawaiian geriatric system of health and housing (e.g., designing kauhale[7] as multigenerational family-care environments) to protect and perpetuate the dignity and capacity of kūpuna[8] to maintain and transmit ancestral knowledge and wisdom.
- Native Hawaiian 'ōpio[9] do not <u>fully</u> know and/or appreciate the extent and power of their indigenous Hawaiian ethnocultural identity. Moreover, there is no generative strategy to transform 'ōpio[8] and their families into articulate, assertive citizens able to employ ancestral narratives that advance a resonating 21st-century ethnocultural identity.
- While outcomes research on traditional healing and cultural interventions has been conducted since 1985, the overall numbers and kinds of outcomes studied must be increased to determine the effectiveness, efficacy, and replicability of these interventions.

***Recommendations for Impact***

- **Increase Support for Community Engagement Programs.**
  - Enhance the statutory authority and increase the annual budget of Papa Ola Lōkahi, thereby strengthening its capacity to appraise, direct, coordinate, and consolidate effective/promising Native Hawaiian health and wellness activities/programs that produce a fully functional, high-quality Native Hawaiian Health System.
- **Increase Culturally Based and Culturally Adapted Interventions.**
  - Identify, evaluate, and sustain promising/effective culture-directed intervention approaches/programs (e.g., Board and Stone, Lomilomi, Ho'oponopono, and La'au Lapa'au)[10] across the life span for parents/prenates, infants, children, youth, adults, and elders.
  - Continue to expand the work of the Kūpuna Councils on all islands to increase the exchange of information, authentication of competence, and continuing education and training for traditional Native Hawaiian healing and cultural practices.
- **Improve and Ensure Access.**
  - Partner with healthcare insurers/providers to complete due diligence for an optimal, affordable health insurance program that will shape Native Hawaiian population health strategies for care and wellness.
- **Develop and Train the Workforce for Traditional Native Hawaiian Healers and Culture Practitioners.**
  - Sponsor programs to educate, train and gather Native Hawaiian traditional healers and cultural practitioners.

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[6] elder, ancestor, singular

[7] group of houses comprising a Hawaiian home; a home, settlement; in modern vernacular usage, a community-based system of agencies/organizations that provide interconnected services for a specific population of clients/patients

[8] elders, plural

[9] youth, juvenile

[10] Board and Stone is a family-centered intervention in which a stone poi pounder and poi board are made, applying Native Hawaiian cultural practices that strengthen family relations between parents and their children, and within the community members. Lomilomi is Traditional Native Hawaiian massage therapy. Ho'oponopono is a family- or group-based traditional healing therapy that identifies, manages, and resolves conflict, and initiates reconciliation that restores correct, healthy relationships among family or group members. La'au Lapa'au is a traditional Native Hawaiian healing practice that uses herbs and plants.

- ❖ Create curricula within Hawai‘i universities to educate and train Healthcare Administrators at the baccalaureate and master’s levels with a specific emphasis on managing health care programs, facilities, and systems that serve Native Hawaiians.

❖ **Expand Funding and Resources.**

- ❖ Increase Papa Ola Lōkahi funding to adequately fund the provisions of the Native Hawaiian Health Care Improvement Act (P.L. 102-396).
- ❖ Sponsor programs to educate, train and gather traditional cultural practitioners and healthcare administrators.
- ❖ Fund quality improvement and health/wellness outcomes research that include evaluation of economic impact on health for traditional native health interventions.
- ❖ Provide funding to develop a system of Native Hawaiian geriatric care—from aging in place to assisted living to nursing/intermediate care facilities—that is directed by Native Hawaiian cultural values.

E ‘ike ka hoku o ka nalu, o hoku ‘ula, o hoku lei.

*Behold the stars of the waves, the red star, the wreath of stars.*

When the rising and setting stars are near the ocean horizon, they provide clues to direction.

Paka‘a and Kuapaka‘a Chant

## Introduction

❖ ***E Ola Mau* Revisited**

Over thirty years ago, the Historical/Cultural Task Force members who were part of the *E Ola Mau Health Needs Study* (Native Hawaiian Health Research Consortiums, 1985a, 1985b), examined the historical and cultural context surrounding the health status of Native Hawaiians. They reached seven general conclusions:

1) Historical and cultural health data were inadequate due largely to inconsistent measures (e.g., racial categories, ancestry, ethnic identification, Hawaiian/Part-Hawaiian, Native/native Hawaiian) used to define this population.
2) Despite these data limitations, the available information showed that for 1,500 years before European/American contact in 1778, Native Hawaiians had developed an island-based monarchical society made up of generally robust people with a unique set of cultural values and practices upheld by a system of sacred laws called the **kapu** that effectively promoted wellness while preventing and controlling illness.
3) Beginning in 1778, Western contact caused the physical, social, and spiritual devastation and despair of Native Hawaiians through a) infectious disease epidemics brought in on foreign ships, and b) loss of native lands and economic and political control to European/American merchants, whalers, traders, planters, and entrepreneurs.
4) The illegal overthrow of the Hawaiian kingdom by a European-American oligarchy aided by U.S. armed forces in 1893, and the subsequent annexation to the U.S. in 1898 without consent from or compensation to Native Hawaiians, exacerbated their disenfranchisement and loss of their culture, language, socioeconomic status, sovereignty, and self-determination. These losses suffered by a population that seemed to be approaching extinction were the crucible within which Native Hawaiians became the group with the worst health status among Hawai‘i’s ethnic groups.
5) Despite their grim health status, Native Hawaiians showed resilience and fortitude. They kept and perpetuated traditional (pre-contact) cultural beliefs and practices which, the task force concluded, mitigated their health adversities.
6) Policy and law makers had two options to address Native Hawaiian health problems: a) Maintain the status quo by continuing to ignore Native Hawaiians and allowing their health problems and already shortened life span to worsen, or b) Support and strengthen cultural beliefs and practices that accelerated healing and supported resilience.
7) Native Hawaiians themselves needed to reclaim, revitalize, and maintain their ethnic identity, self-determination, and traditional cultural concepts and practices that promoted health and wellness.

Thirty-five recommendations were developed within seven overarching systems-based areas outlined below:

1) Promote steadfast wholistic awareness that health is only one aspect of well-being, alongside pride of heritage (e.g., ancestral narratives and genealogies).

2) Emphasize concern for and kākoʻo[11] of ka poʻe Hawaiʻi[12] to provide input in all stages of planning, implementation, and evaluation, with the goal of having capable Native Hawaiians educated, trained, and given the experiences required to design, execute, and evaluate their own programs.
3) Define realistic, practical, and meaningful goals for wholistic, early interventions that promote health and prevent and control disease within appropriate cultural contexts. Recognizing that existing benchmarks for health are based on non-Hawaiian, European-American (i.e., White) health factors, measures of health improvement for Native Hawaiians should be determined by Native Hawaiian sociocultural measures of physical, mental, behavioral, dental, and nutritional health across the lifespan.
4) Health education for Native Hawaiians should be conducted by trained Native Hawaiians at the ʻohana[13] and community levels, and should utilize Native Hawaiian cultural concepts, language, and practices that advance health and well-being.
5) Health education and Native Hawaiian cultural training of health personnel should include Native Hawaiian and non-Native Hawaiian Western-trained health professionals *and* traditional Native Hawaiian healers and cultural practitioners.
6) Coordinate public and private health agencies and institutions that serve Native Hawaiians to avoid duplication of services, identify and fill gaps in service, maintain continuity and stability of existing effective programs, discontinue ineffective ones, and secure and deploy resources to create new effective programs as needed.
7) Integrate Native Hawaiian health programs with programs to promote the reclaiming of Hawaiian lands, in-migration population flow, understanding of laws related to civil rights and health, and political self-determination.

These recommendations were envisioned to redesign and bring into being a Hawaiʻi homeland that possesses the needed components and multifaceted supports to transform the *internal environment* (i.e., a person's constitutional biological-psychological-social-cultural-spiritual make-up) and *external environment* (i.e., historical, cultural, socioeconomic, and political factors that influence a population group) to promote Native Hawaiian culture-based health and wellness, beginning with the family, local communities within which Native Hawaiians live, and other social support systems. On October 31, 1988, the Native Hawaiian Health Care Improvement Act (P.L. 100-579; reauthorized by Congress October 6, 1992 as P.L. 102-396) became the vehicle through which these recommendations could be put into action.

### ❖ *E Ola Mau A Mau*

Historical and cultural contexts exert powerful influences that strengthen or weaken the well-being and health status of humankind. In turn, these contextual effects influence constitutional factors (e.g., our genetic and physiologic makeup) that strengthen or weaken our capacity to fend off illness and disease. Three decades after the first publication of the *E Ola Mau Health Needs Study*, discoveries from anthropology, archeology, genetics, history, literature, the performing arts, and primary and secondary source materials on ancient to contemporary indigenous health and healing principles and practices demonstrate the powerful influence—for good and bad—that history and culture have had on the health status and well-being of Native Hawaiians.

Compared to Hawaii's other ethnic groups, Native Hawaiians have the highest rates of chronic physical, psychological, and behavioral illnesses. Native Hawaiians suffer disproportionately from obesity, cancer, diabetes mellitus, alcohol and substance abuse, cardiovascular and pulmonary disease, dental caries and periodontitis, anxiety, depression, and suicide. Despite these health problems, regardless of socioeconomic class, Native Hawaiians avoid seeking help from health care providers until their illnesses are in advanced stages associated with life threatening dysfunction and disability. Even among incarcerated Native Hawaiian men, women, and youth, who are over-represented within the criminal justice system, culturally based programs that increase engagement with health care programs, mental health and substance abuse programs, and traditional Native Hawaiian healing interventions such as hoʻoponopono[14] are insufficient (Native Hawaiian Justice Task Force Report, 2012).

### Timeline of Historical/Cultural Events

An important overall contribution by the 1985 Historical/Cultural Task Force was the compilation of

[11] support, upholding
[12] Native Hawaiians within their homeland of Hawaiʻi
[13] family
[14] to correct; a family- or group-based traditional healing therapy that identifies, manages, and resolves conflict, and initiates reconciliation that restores correct, healthy relationships among family or group members

a "Hawaiian Health Timeline and Events," which detailed the significant events from the arrival of the first Polynesian-Hawaiians in the 3rd century C.E., who settled and made Hawai'i home, to the historical and cultural events of the 21st century that continue to impact Native Hawaiian health. During the past 30 years this timeline has been regularly updated as scholars, researchers, navigators, and practitioners have uncovered previously unknown facts about pre- and post- European-American-Asian contact, and new advances post-1985 in Native Hawaiian health, healing, education, etc., have been occurring. The current timeline is presented as part of *E Ola Mau A Mau*.

**Population changes**.

We focus here on the events of the past 240 years – from 1778, the year Captain James Cook's ships came upon the Hawaiian archipelago that had been unknown and uncharted in European and American navigation maps, to 2018. The Native Hawaiian population, which began at over 683,000 in 1778, dropped to 24,000 by 1920—a 96.5% reduction caused primarily by European and American contact, infectious diseases, weaponry, and social, economic, and political power and influence (Blaisdell, 1985; Swanson, 2016; Schmitt & Nordyke, 2001; Young, 2017). However, since the 1980s, the Native Hawaiian population has been growing and is projected to continue to grow. The 2000 U.S. Census shows that there were 560,000 Americans who identified themselves as Native Hawaiian: 201,600 (36%) identified as Native Hawaiian and another race, 145,600 (26%) as Native Hawaiian with two other races, and 184,800 (33%) as exclusively Native Hawaiian (Goo, 2015).

The population growth of Native Hawaiians is good news that is tempered by a lifespan 6 years shorter than Hawaii's average lifespan of 80 years. Given the projected population growth, it is imperative that we continue to identify the causal, mediating, and risk factors associated with Native Hawaiian morbidity and mortality. In addition, work needs to continue in identifying protective and resilience factors—particularly historical and cultural factors—that strengthen the connection of Native Hawaiians to health care and wellness networks within their neighborhoods and communities. Successful outcomes in these areas would improve health status and wellness, and reduce health care costs and related economic losses such as sick leave and unemployment.

Public Law 102-396 set into motion the formation of a Native Hawaiian Health Care System with the purpose of improving the health status and well-being of Native Hawaiians in their homeland. Papa Ola Lōkahi, a 501(c)3 non-profit corporation, was the designated entity through which the Secretary of the U.S. Department of Health and Human Services would contract to develop and implement a master plan to meet the purposes of this law.

**Purpose**

*E Ola Mau A Mau: The Next Generation of Native Hawaiian Health* was commissioned by Papa Ola Lōkahi to review the activities and outcomes of this law and to evaluate the effects of this public policy on the lives of Native Hawaiians living within the State of Hawai'i. This chapter focuses on the historical and cultural contexts that influence Native Hawaiian health status and well-being. In the sections that follow we review the ways in which the seven recommendations of the original 1985 Historical/Cultural Task Force have guided the implementation of the Native Hawaiian Health Care Improvement Act. We organize our review into four areas: 1) increased understanding; 2) effective and promising approaches to health promotion, disease prevention, and intervention; 3) gaps in knowledge, skills, expertise, resources, technology, etc., that hinder and obstruct progress; and 4) recommendations for impact, including some which are updated from 1985 along with new recommendations based on the evaluative experience of the past 30 years.

**Process**
**Task force members and contributors.**

Thirty-three contributors from the islands of O'ahu, Kaua'i, Moloka'i, Maui, and Hawai'i comprised the membership of the 2018 Historical and Cultural Task Force. Of these 33 members, six had played significant roles in the preparation and implementation of the original 1985 *E Ola Mau Health Needs Study*. Thirty members were Native Hawaiian, two were European-American, and one was Japanese-American. Most members had either been born and raised in Hawai'i, while the remainder had lived in Hawai'i for more than 40 years. Occupations and fields of expertise represented were Native Hawaiian health/wellness cultural practitioners, physicians (including Native Hawaiian professors and doctors of medicine and psychiatry), health care and medical school administration, health education, nursing, social work, educational psychology, public health (including epidemiologists and graduate students), Native Hawaiian middle school principal, teacher, teachers of Hawaiian culture, and Native Hawaiian community health and culture workers and staff.

**Task force meetings.**

From December 2016 through April 2017, a period of 5 months, meetings lasting an average of 2 hours were held every 2-3 weeks. In addition, individual and smaller group meetings were held with the task force chair and members to discuss specific aspects of the information gathered and manuscript preparation from May 2017 through March 2018. Meetings reviewed the oral and written histories and salient publications related to Native Hawaiian history, culture, health, and well-being. Particular emphasis was placed on information, history, and new as well as old knowledge of Hawaiian history and culture over the past 30 years, to assess successes, gaps, causal factors, promising initiatives, and ways to improve; traditional Native Hawaiian health and healing practices; success of education and training programs for Native Hawaiian professionals, growth of the scholarly and scientific literature on Native Hawaiian history and culture, language usage, and Hawaiian cultural interventions; Native Hawaiian leadership in health professions; advancement of Native Hawaiian cultural-healing practices, practitioner-trainees, and teaching practitioners (referred to as "native healers" in the 1985 *E Ola Mau Health Needs Study*); new Native Hawaiian cultural approaches to health, wellness, and healing; and visions and proposals for strengthening the Native Hawaiian Health System. Notes were taken at all meetings. Sometimes, particularly when kūpuna[15] experts attended meetings, audio and visual recordings were made with the consent of the attendees.

**Multi-island meetings with Native Hawaiian traditional cultural practitioners and Native Hawaiian health care providers.**

In addition to the regularly scheduled meetings, two all-day meetings of experts were held. The first meeting, called the *Kūpuna Kūkākūkā*, was held on March 9, 2017, at Kamuela, Hawai'i Island. Attended by 14 participants, the meeting was a facilitated kūkakūka[16] among kūpuna[17] and mākua[18] from four islands with experience and training in Native Hawaiian history and traditional cultural and/or healing practices. The discussion focused on elder care and behavioral/mental health, transforming the current Native Hawaiian Health System model, and the role of traditional Native Hawaiian cultural practices in elder care, mental/behavioral health, and the Native Hawaiian Health System. Within each of these topic areas, participants were asked to share their individual and collective knowledge of Native Hawaiian history and culture in connection with Native Hawaiian health, well-being, help-seeking behaviors, and the relationships between Native Hawaiians and the existing health care system in Hawai'i.

The second all-day meeting, held on July 25, 2017, was a session called *Pū'ulu: Mana i ka Leo* which gathered an assembly or pū'ulu of informed experts, practitioners, and students to conduct an in-depth exploration of the Native Hawaiian health and wellness concept of Mana i ka Leo, which is based on traditional health practices updated for contemporary application in a program called Board and Stone (Genegabus, 2017). It is a promising intervention that is built on the traditional practice of making the implements, i.e., a pounding board and stone, to prepare poi, the Native Hawaiian staple made of steamed kalo[19] corms. Pū'ulu attendees included 42 Native Hawaiian practitioners and experts in Mana i ka Leo and other Native Hawaiian cultural practices used for health and healing, and other health professionals, educators, scholars, researchers, administrators of schools and of prisons for women and youth, and Native Hawaiian community leaders who utilized Mana i ka Leo and/or Board and Stone interventions.

**Interviews.**

Project assistants conducted 1-1.5-hour semi-structured interviews with 31 identified Native Hawaiian health leaders, traditional Native Hawaiian healers and/or cultural practitioners, and non-Hawaiians who were overseeing the care of Native Hawaiians.

**Literature review.**

Project assistants and three of the chapter authors conducted literature searches of all peer-reviewed, non-peer reviewed, governmental, and private publications; newsletters; county, state, and federal statute and laws; undergraduate and graduate theses; graduate dissertations; and audio or audiovisual recordings since 1985 on Native Hawaiian history and culture, and Native Hawaiian healing and counseling. The search used the key words "Traditional," "Hawaiian," "Native Hawaiian," and "Indigenous Hawaiian," cross-referenced with healing; religious

[15] elders
[16] thoughtful deliberation
[17] elders from the grandparent generation
[18] adults from the parent generation
[19] taro

and spiritual traditions/practices; herbal medicine and other Native Hawaiian treatments such as laʻau lapaʻau,[20] lomilomi,[21] and hoʻoponopono;[22] hula, chants, ʻŌlelo Hawaiʻi,[23] language, and mele;[24] and practices leading to ola[25] and lōkahi. In addition, library and web searches were done on publications, oral histories, and translated Hawaiian language newspapers that described the infectious disease epidemics, examining their impact on Native Hawaiians and the interventions utilized to address those epidemics – along with sources, particularly those written since 1985, that describe the chronic diseases that continue to adversely impact Native Hawaiian health.

**Moʻolelo[26] and mele[27].**

Over the past 30 years, cultural masters and emerging scholars fluent in ʻŌlelo Hawaiʻi have translated large numbers of Native Hawaiian stories, oral histories, chants, songs and poems preserved through archival audio recordings, manuscripts, and Hawaiian newspapers into English, providing the larger Native Hawaiian and non-Hawaiian public with previously inaccessible knowledge on the history, myths, sacred wisdom, cultural beliefs and practices, and social mores of traditional Hawaiian stories. These invaluable sources of knowledge were also reviewed and mined by task force members via our meetings, interviews, and literature review.

Information from these meetings, interviews, literature review, moʻolelo[26] and mele[27] has served to generate the content and fulfill the purpose of this report.

## Increased Understanding

During the three decades since the publication of the 1985 *E Ola Mau: The Native Hawaiian Health Needs Study*, scholars and researchers have enriched our knowledge and expanded the literature on Native Hawaiian history and culture. About 5,000 publications, audio/video recordings, and articles have been produced regarding Native Hawaiian history and culture as influences upon health, well-being, and healing principles and practices. While a complete review is beyond the scope of this report, some of these works are described and cited herein and in other chapters. This growing body of knowledge, skills, and practices moves us beyond the scarcity of information and the preconceived notions that existed in 1985.

Information from oral histories and mele once secreted within family elders have been and are continuing to be shared. Nearly-forgotten troves of museum archival reports and newspapers written in the Hawaiian language are being translated by contemporary Native Hawaiian-speaking scholars (Hoʻoulumahiehie & Nogelmeier, 2013; Kameʻeleihiwa, 1992; Kauanui, 2008; Kepelino, 2007; Merry, 2000; Nogelmeier, 2010; Osorio, 2002). Native Hawaiian scholars began to correct and complete the often biased and half-told stories written predominantly by European-Americans in the 19th and 20th centuries, and to provide facts and truth that mitigate the Native Hawaiian stereotypes of decades past. These resources provide a multi-dimensional understanding of the historical and cultural factors that influence—in positive and negative ways—the health and wellness of Hawaiʻi's indigenous, First Nation people. Salient findings from this body of work are summarized below and will be elucidated in the sections that follow.

### Settlement of the Hawaiian Islands and First Nation Indigenous Status

Scholarly and research findings have dispelled previous suppositions of how the Hawaiian Islands were settled, cultivated, and populated (Greig, 1993; Kirch, 1985; Kirch & Sahlins, 1992; Lum, Rickards, Ching, & Cann, 1994). After making landfall in 300 C.E., the first Polynesian-Hawaiians sailed back on 40- to 60-foot double-hulled ocean voyaging canoes to their original home islands, and then returned to Hawaiʻi (a 5,000-mile round-trip voyage) with family, friends, and others who served their spiritual, military, and workforce needs – bringing dogs, pigs, and chickens, varieties of kalo,[28] sweet potatoes, bananas, coconuts, and other plants needed for making cloth, and cord for ropes and nets. These ocean voyages stopped by 1200 C.E., as a distinct and sovereign Native Hawaiian society had become established (Andrade & Bell, 2011). Empirical evidence of the ocean voyages that populated the Hawaiian Islands was gathered through multiple trips to the South Pacific and back to Hawaiʻi by the *Hokuleʻa* and its sister ocean voyaging canoes, *Hikianalia* and

[20] medicine; traditional Native Hawaiian healing practice using herbs and plants
[21] traditional Native Hawaiian massage therapy
[22] to correct; a family- or group-based traditional healing therapy that identifies, manages, and resolves conflict, and initiates reconciliation that restores correct, healthy relationships among family or group members
[23] Native Hawaiian language
[24] chant, song, poem
[25] life, well-being and health
[26] story, history, myth, tale, tradition, legend, fable, article
[27] chant, song, poem
[28] taro

*Hawai'iloa*, which used traditional non-instrument navigation methods used by ancient Native Hawaiian-Polynesians. Their latest 3-year Mālama Honua[29] Worldwide Voyage began in Hawai'i, circumnavigated the world and returned safely to Hawai'i in June 2017 (Polynesian Voyaging Society, 2018).

By the 11th century C.E., Hawai'i consisted of well-developed island kingdoms. By 1810, King Kamehameha I had established a monarchy and multi-island nation state. Formal diplomatic relations between the Kingdom of Hawai'i and the United States were established in 1853. These treaties and relations remained in effect until Hawai'i became a territory of the United States in 1898 (MacKenzie, Serrano, Sproat, Obrey, & Poai, 2015). Native Hawaiians, the lineal descendants of these first-nation people, currently make up 21% (294,000) of Hawaii's total population of 1.4 million (Andrade & Bell, 2011; Goo, 2015; Hawai'i State Department of Health, Health Surveillance Program, 1990; Jaworowski, 1998).

As the First Nation and indigenous people of Hawai'i, Native Hawaiians have been recognized by the United States in more than 300 individual federal acts since Hawai'i became a territory of the United States (e.g., 1900 Organic Act, 1921 Hawaiian Homes Commission Act, 1959 Statehood Admission Act), the State of Hawai'i in its Hawai'i Revised Statutes (State Constitution; Section 10H-1), and the United Nations as beneficiaries of the United Nations Declaration on the Rights of Indigenous Peoples.

This Native Hawaiian national and global network of relationships was recognized and extended as part of the Mālama Honua Worldwide Voyage, in which the crew members who sailed on the Native Hawaiian voyaging canoe *Hokule'a* made landfall in 150 ports, 23 countries and territories, and eight United Nations Educational, Scientific, and Cultural Organization (UNESCO) Marine World Heritage sites, bringing the Native Hawaiian culture, language, mele, and humble mastery of traditional non-instrument navigation. Their aim was to build global relationships, and bridge traditional and new technologies for protecting the Earth and living sustainably. In a powerful historical irony, in contrast to the 17th- and 18th-century European-American explorers who brought disease and destruction to Hawai'i, the crews of the *Hokule'a* brought mālama honua. Drawing upon the resilience of Hawai'i's indigenous First Nation people who overcame near-extinction from the 19th-century epidemics, loss of a kingdom, and disenfranchisement, the 245 participating crew members on this 3-year voyage are role models and cultural heroes for 21st-century Native Hawaiians.

**Native Hawaiian Language**

Scholarly efforts to study and translate traditional Native Hawaiian literary works recorded from the late 18th, 19th, and early 20th century have been augmented by increasingly common usage of and proficiency in 'Ōlelo Hawai'i.[30] Today, it is not uncommon to hear Native Hawaiian (and non-Native Hawaiian) children speaking 'Ōlelo Hawai'i in Hawaiian language charter schools; and universities in Hawai'i have Hawaiian knowledge, history, and language schools, departments, and centers that advance the study of Native Hawaiians. The number of Hawaiian language speakers in Hawai'i has increased ten-fold from an estimated 1,000-2,000 Hawaiian language speakers in 1985 to about 19,000 in contemporary Hawai'i (New York Times Archives, 1985; Hawai'i State Data Center, 2015). In 1985, there were three Hawaiian language pre-schools. Today, a statewide network of 12 internationally accredited Hawaiian language and cultural immersion pre-schools exist. In 1985, there were no K-12 public schools with Hawaiian language and cultural immersion curricula. Thirty years later, there are 15 public schools and six charter schools educating K-12 students in Hawaiian language and culture ('Aha Pūnana Leo, 2017, 2018; Neason, 2016). At the college and university level, Hawaiian cultural practice and scholarship significantly increased with undergraduate and graduate degrees in Hawaiian studies, language, immersion education, and Library and Information Science. There is a cable television station, 'Ōiwi TV, dedicated to Hawaiian language, and a weekly opinion editorial published in the Hawaiian language in the *Star Advertiser*, the main newspaper for the city and county of Honolulu.

**Native Hawaiian Reluctance to Seek Help Within Traditional Western Clinical Settings**

While the previously described advances in Native Hawaiian scholarship, research, language usage, cultural practices, and education are notable, Native Hawaiians often continue to avoid physicians, nurses, and traditional Western health care facilities, until they have developed advanced and often debilitating disease, illness, or disability. The underpinnings of this deep-seated, visceral avoidance remain only partially understood. The historical context reveals that disparities and injustice in

[29] mālama – to care for, tend, honor; honua – the Earth
[30] Hawaiian language

healthcare, and the resulting distrust, have been engendered by foreign desires, diseases, oppression, and historical trauma (Blaisdell, 1985, 1989; Bushnell, 1963; Fuchs, 1961, Kameʻeleihiwa, 1992; Kauanui, 2008; Liliʻuokalani, 1990; Merry, 2000; Stannard, 1989). In contrast, oral and written stories, particularly from the 19th through 20th centuries C.E., show that power infused with Native Hawaiian values such as aloha,[31] lōkahi,[32] haʻahaʻa,[33] and mālama[34] that are directed toward promoting well-being, preventing illness, and perpetuating intact, multigenerational families can lessen the effects of, and in some cases overcome, these adverse historical factors (Lee & Look, 2017).

A 2017 meeting of Native Hawaiian elders was convened to discuss ways that historical/cultural knowledge could have far-reaching effects upon Native Hawaiian help- and wellness-seeking behaviors. The group attempted to discern some of the critical factors that have shaped and continue to shape Native Hawaiian health and well-being, and the ways in which power, protection, prevention, and perpetuation used at the right time by the right people in the right circumstances can have far-reaching effects.

*In 1804, Kamehameha used his power to direct ships' doctors to train kahuna[35] and stopped the maʻi ōkuʻu.[36] From 1836 to 1838, when no Hawaiian child lived beyond 2 years, a little girl was protected by her physician father and lived…to be Queen Emma, wife of Kamehameha IV—founders of The Queen's Hospital and Health Systems. In 1853, the small pox epidemic introduced immunization and prevention. The 1866 quarantine law fractured families [well into the mid-1900s] to halt the ravages of leprosy. It spawned deep distrust and disparities of healthcare that continue today. It taught us that perpetuation of intact families is essential to the health and well-being of our people. Power, protection, prevention, and perpetuation…It's about our history and culture being taught and practiced in Hawaiian.*

Kūpuna Kūkākūkā Meeting
March 9, 2017

These words, spoken by Dr. Benjamin B. C. Young, physician, kupuna,[37] professor emeritus, and history of medicine scholar, summarized a segment of historical and cultural discussion at an elders' conference, highlighting the enduring positive effect of the survival beyond age 2 of a Native Hawaiian girl born in 1836. She grew up to be Hawaiʻi's great Queen Emma, whose legacy was to build and sustain the largest academic medical center on the islands with its mission to advance health care for Native Hawaiians and all the people of Hawaiʻi. Dr. Young also refers to the devastating negative effect of the passage of the Act to Prevent the Spread of Leprosy in January 3, 1865, which was led by European/American physicians on the Hawaiian Kingdom Board of Health in 19th-century Hawaiʻi.

**The final 19th-century epidemic**.

The final 19th-century infectious disease epidemic that came to Hawaiʻi on foreign ships was leprosy, the first case being diagnosed in 1848. The disease ravaged peripheral nerves, resulting in sensory loss, facial disfigurement, shrinking of fingers and toes, blindness, and hearing loss. It killed Native Hawaiian men, women, and children. In 1865, the Quarantine Law mandated that the afflicted be taken from their families by law enforcement personnel and exiled to the leper colony on the island of Molokaʻi. A year after its enactment, in January 1866, the first group of patients arrived on Molokai's Kalawao-Kalaupapa peninsula. Over the next 103 years, 8,000 more patients would follow, of whom over 90% were Native Hawaiian. The quarantine and forced separation would continue until 1969, when the law was finally eliminated.

Native Hawaiian and European-American sociocultural reactions to leprosy were strikingly different (Amundson & Ruddle-Miyamoto, 2010). European-Americans perceived the physical changes and disabilities as viscerally disgusting, "loathsome, repulsive and indescribably horrible" (Clifford, 1889), and they shunned and segregated those with leprosy. Native Hawaiians had no sense of disgust, and the non-afflicted sought to keep and care for the afflicted close to them in their neighborhoods and family households.

*Significantly, Hawaiians did not name the disease for what it did to their bodies but for what it did to their ʻohana;[38] they called it ʻmai hoʻokaʻawale', meaning the separating sickness.*
(Inglis, 2004; Amundson & Ruddle-Miyamoto, 2010)

[31] love, affection, compassion, mercy, show of kindness, greeting or farewell, charity, pity
[32] unity, agreement, accord, harmony; Native Hawaiian concept of health characterized by harmony and balance among the body, mind, spirit, and environment
[33] humble, modest, unpretentious, unassuming, unobtrusive
[34] to care for, tend, honor
[35] Native Hawaiian healers
[36] "squatting disease," possibly cholera or dysentery
[37] elder
[38] family

After the quarantine laws were enforced, healthy family members chose to go to Moloka‘i as kokua.[39] European-Americans could not understand nor relate to the perceptual and social differences between themselves and Native Hawaiians. Afflicted Native Hawaiians and Hawai‘i immigrants (i.e., non-Native Hawaiians who made up 3% of those exiled) were victims of a disease that made them criminals rather than patients under the care of physicians and nurses. The quarantine laws were not repealed until 1969, impacting Native Hawaiian families well into the late 20th century.

**Native Hawaiian distrust of Western medicine and physicians.**

Using the word leprosy, rather than the less stigmatized term Hansen’s Disease, is important here because it conveys the visceral sense of dehumanizing trauma, shame, fear, and distrust that Native Hawaiians came to associate with Western medicine, physicians, and nurses. Moreover, the perceptual and social differences of illness and disfiguring disabilities between Native Hawaiians and the Western trained health professionals who were supposed to care for them formed a fundamental breach between the Native Hawaiian patients and their health providers that we propose is a causal factor explaining why Native Hawaiians avoid seeking health care until their illness is far advanced.

**Native Hawaiian Perception of Health and Wellness**

Ola[40] is the overarching cultural term denoting health and wellness for Native Hawaiians. It is comprised of at least four elements that have the common purpose of defining, balancing, and managing relationships: 1) lōkahi, or harmony and balance within individual persons with respect to their inner/outer environments; 2) conflict management/resolution between leaders and people, that is pono,[41] and sustaining a state of ulu pono[42] to invent, produce, and sustain ideas, mores, and institutions that endure; 3) a high functioning and self-reliant ‘ohana,[43] the fundamental social unit of Native Hawaiians, patterned after the crews of the ancient voyaging canoes made up of men, women, and youth (elders, children, and infants were rare voyagers because of the grueling demands of ocean voyaging) who were related by kinship ties of ancestry, marriage, friendship, and servitude; and 4) interdependent and socially responsible kauhale[44] in which ‘ohana reside and form communities whose leaders and members develop effective ways to alu like mai[45] and kūkulu kumuhana.[46]

The concept of lōkahi, which conveys the way in which an individual seeks balance within his/her body, mind, and spirit, and harmony with the environment, other persons, their spiritual ancestors, and the divine, is an important element of ola. Another element of ola is the concept of being pono.[47]

Pono in cultural usage describes the ideal way in which one should lead one’s self and others through conflict. Being pono is having the capacity to effectively manage two important aspects of leading oneself and others: 1) aggression, the ability to persist in transforming creativity and vision into artificial inventions and instruments, and the capacity for one’s body, mind, and spirit to heal itself; and, 2) peace or calm, the ability to be generative, to seek/prepare the material, emotional, and spiritual lā‘au[48] needed for healing. In traditional Hawaiian belief, the first aspect of pono harnesses the power of Kū, the deity associated with war, man-made or artificial things, and the body’s healing power. The second aspect of pono harnesses the power of Lono, the deity associated with peace, fertility, the harvest, generativity, and medicine that aids in healing the body.

In addition to the paramount deities such as Kū and Lono, Native Hawaiians also believed in the creation deities Papa, Wākea, and Ho‘ōhokūkalani who created the earth, sky, and islands of Hawai‘i (Charlot, 1983; Gutmanis, 1983; Valeri, 1985).[49] In

[39] helpers
[40] life, well-being and health
[41] right, moral, ethical, and sound
[42] a state of thriving or growth that reflects the meaningful connections of humanity with other individuals, the community, the environment, and transcendent spiritual realms
[43] family, relative, kin group, extended family, related by blood, aloha, and/or a unified purpose
[44] group of houses comprising a Hawaiian home; a home, settlement; in modern vernacular usage, a community-based system of agencies/organizations that provide interconnected services for a specific population of clients/patients
[45] to come together and work in unity
[46] to pool everyone’s thoughts and prayers within a family, group, or team to do the work of solving problems, particularly spiritual and relational problems; this is the initial step in the therapeutic process of ho‘oponopono
[47] right, moral, ethical, and sound
[48] medicine, especially medicinal native herbs and plants harvested from the land and sea
[49] Papa is the Earth Mother, Wākea is the Sky Father, and Ho‘ohōkūkalani (“the making of the stars in the heavens”) is their daughter.

addition, the mating of Papa and Hoʻohōkūkalani produced the first taro plant called Hāloanakalaukapalili (also called Hāloa ʻekahi or Hāloa I in the vernacular), followed by the first kanaka,[50] Hāloa (called Hāloa ʻelua or Hāloa II in the vernacular).[51] The taro plant is the kino lau[52] of Hāloa I, which nourishes Hāloa II and all humankind; i.e., the mana[53] of the creation deities to give and sustain life is contained within the taro plant. The clinical moʻolelo[54] or vignette below illustrates how ola[55] can be restored even when a cure is still out of reach for an oncology patient.

**Clinical moʻolelo.**

*A 58-year-old Native Hawaiian woman with lung cancer received radiation treatment, with a resulting esophagitis that caused intense pain when she swallowed. She was placed on intravenous feeding while the inflammation in her esophagus subsided. Over the course of 2 weeks, this usually cheerful, socially engaging woman who loved being surrounded by her large family became depressed and despondent, and isolated herself by asking her family not to visit. A psychiatric consultation indicated she met the diagnostic criteria for a major depressive disorder; however, antidepressant medication was not started because of her physically weakened condition, additional medical side effects, and potential drug interactions. A Native Hawaiian third-year medical student newly assigned to the case completed a history and physical on the patient. When the student asked the patient how she was feeling about not being able to eat, the patient replied, "My grandfather who raised me…he taught me you have to eat poi. He told me, 'You eat poi because poi not just food, poi is medicine…poi make you strong…give you life…especially when you sick!' I eat poi 2-3 times a week before I got sick. Now, I cannot swallow. I cannot eat poi. I'm getting weaker every day…like my life is draining out…I may as well be dead." The student described the problem to the treatment team and recommended that they treat her by feeding her poi at least once a day. The treatment team informed the patient that she would be able to eat poi: They had her swallow a xylocaine suspension to numb her esophagus, followed by a cup of poi. This treatment was administered once a day. After two days of poi treatment, the patient began talking and smiling, and that evening called her family to come visit. On day 3 of poi treatment, the patient was her usual cheerful and socially engaging self with no symptoms of depression; her physical health status remained unchanged. When asked how she was feeling, the patient, who knew she had an advanced-stage cancer with a poor prognosis, replied, "I can eat poi…I feel good…I have my family with me…I am well!"*

Poi is made up of steamed taro corms that are pounded or ground into a paste that is diluted with water. Poi is to Native Hawaiians what rice is to Asians and bread and potatoes are to Europeans. The spiritual-cultural belief is that poi is the kino lau[56] of Hāloa, the god of long life. Thus, when kalo is eaten, the mana of Hāloa – the sacred power to give long life – is taken within a person.[57] The Native Hawaiian medical student knew the sacred story of Hāloa and poi; her Native Hawaiian patient did not. However, the patient's grandfather had taught her that poi was laʻau or medicine that would give her life. The medical student had told the Asian-American oncologist about his patient's beliefs about poi and her own knowledge of Hāloa, when she asked if there was a way to feed the patient poi by mouth. The oncologist accepted this cultural justification and developed a treatment that was successful in restoring his patient's sense of well-being or Ola that was paramount to the success of her cancer treatment. This vignette shows Ola in practice:

1. The patient perceived not being able to eat poi as severing her ancestral tie to her grandfather who represented her founding ʻohana, which was continuous with her multigenerational extended family of husband, children, grandchildren, siblings, etc. Her lōkahi became impaired: She could not rally her usual psychosocial and spiritual strengths; she began withdrawing from her ʻohana, which she thought she had already

[50] human being
[51] Hāloa: "long breath of life." Hāloa I and Hāloa II are divine siblings whose relationship sustains life in each other. Hāloa I's kino lau ("physical plant form") is the taro plant that is the main staple in the traditional Native Hawaiian diet that gives long life; Hāloa II is the first ancestor of all human beings.
[52] physical plant form of a deity that contains the mana ("spiritual power") of that deity
[53] divine power, authority, spiritual power and authority, privilege; divinely powerful
[54] story, history, myth, tale, tradition, legend, fable, article
[55] life, well-being and health
[56] Translates as "many bodies" referring to the many forms and physical embodiment of a god or divine being. In this vignette, poi is the physical plant form of the deity Hāloa.
[57] The Christian spiritual-cultural analog is the consumption of the Eucharist when bread and wine are consecrated into the sacramental elements of the body and blood of Christ Jesus. When the sacramental elements are consumed by Christians, the cultural-spiritual belief is that they are consuming the body and blood of Christ (i.e., it is the kino lau of Christ), which fills a person with the Holy Spirit of the Christian triune God.

lost; and she became despondent, hopeless, without life.

2. The treatment team was a medical kauhale that was part of the extended network making up the patient's (health care) community. The oncologist's conduct was pono: He listened to the medical student (and patient), then mobilized the team to action, thereby practicing alu like mai and kūkulu kumuhana. He developed a treatment which was considered unorthodox because it used Western allopathic medicine to deliver a culturally-based treatment, i.e., combining the mana of Kū and Lono to restore the patient's lōkahi.
3. The patient's ability to eat poi reconnected her to her grandfather, the source of her cultural and spiritual beliefs and ʻohana (Enos & Johnson, 1995, 1996). It began to restore lōkahi within her.
4. Within three days, she was no longer depressed. She had regained Ola: Her lōkahi was restored, she had regained her connection to her ʻohana, and she felt pono in facing her cancer treatment and prognosis—concluding, "I am well!"

The patient and her treatment team had discovered a way in which Ola, health and wellness as defined by her native ancestors, could prevail. The treatment restored to her the personal responsibility and mana[58] to face a deadly illness with resolve, on her own terms as a Native Hawaiian.

**Native Hawaiian traditional healers and cultural practitioners.**

In 1985, traditional Native Hawaiian healers practiced predominantly within close-knit extended family-based networks. Traditionally, their training took decades after being chosen by the family elder who was the designated healer or haku[59] of the clan, serving as haumana[60] and then as a kākoʻo.[61] Many, if not most, healers were respected kūpuna[62] revered by both their extended family and community. With a few exceptions, most healers rarely made public appearances, quietly passing their knowledge and skills through carefully selected family members from the next generation. The 1988 Native Hawaiian Health Care Act formally recognized these healers and became a catalyst through which they formally organized in January 1989 under the name Papa o Kupuna Laʻau Lapaʻau, which was renamed Kupuna Laʻau Lapaʻau o Hawaiʻi in 1990. Donlin (2010) and Galang and Foye (2014) reviewed how this organization, supported by Papa Ola Lōkahi, began to increase the number of healers who emerged from their family-centric practices to work in a range of settings statewide.

Together, these healers began to broaden their reach and exchange of knowledge, skills, and experience of traditional healing, refine the roles of traditional practitioners, and examine culture-based standards of training and specific practices such as laʻau lapaʻau,[63] laʻau kahea,[64] and lomilomi.[65] In addition, these healers and cultural practitioners and their haumāna began publishing manuals, books, articles, videotapes, and DVDs to reach and educate a larger audience of Native Hawaiians and non-Native Hawaiians (Abbott, 1992; Chun, 2006, 2009, 2011; Gutmanis, 1976/1979; Kaʻaiakamanu & Chun, 2003; Peʻa, 1990). In 1985, fewer than 10 kupuna masters of Native Hawaiian traditional healing came forward publicly to share their knowledge, out of an estimated 60-80 healers (Chang, 2001; Pinkney, 1990). By 2006, over 50 traditional practitioners were actively engaged in developing state policies that established certification, as opposed to licensure, to ensure that the integrity of the Native Hawaiian spiritual-cultural, ethical, and moral core would not be overrun by Western-oriented licensure, fee, and reimbursement structures (Donlin, 2010; Galang & Foye, 2014).

Today, each island's Native Hawaiian Health Center, along with designated community health and wellness centers that serve Native Hawaiians, have Kupuna Councils made up of Native Hawaiian Traditional Healing Practitioners and Native Hawaiian Cultural Practitioners. The former must be proficient in both Native Hawaiian healing *and* cultural practices, while the latter are proficient in cultural practices only. Both kinds of practitioners are involved in developing culturally appropriate approaches to health and wellness. Significantly, the founding organization of Native Hawaiian master healers, Laʻau Lapaʻau o Hawaiʻi, further distinguished practitioners who were koko ("blood") descendants of the indigenous, first-nations people of Hawaiʻi (as defined within the Native Hawaiian

[58] divine power, authority, spiritual power and authority, privilege; divinely powerful
[59] spiritual leader who leads the family, e.g., in family healing interventions such as hoʻoponopono
[60] student, pupil, apprentice, recruit, disciple
[61] helper who is chosen by the master healer to be his/her successor
[62] elders
[63] healing with Hawaiian herbs
[64] healing that incorporates calling spiritual powers to set broken bones for healing
[65] traditional Hawaiian massage

Health Care Act, 1988), and koko‘ole (“without blood”) practitioners who are non-indigenous Hawaiians schooled and trained in Native Hawaiian

Today, Kupuna Councils oversee the different cultural/healing practices for their respective islands, connect with patients who desire traditional healing and cultural practices, and develop ways to conduct traditional healing and cultural practices while upholding state and federal laws and regulations for the delivery of care. In 1985, Native Hawaiians accessed traditional Native Hawaiian healing through word-of-mouth family and neighborhood connections. Thirty years after the Native Hawaiian Health Care

healing and/or cultural practices by a recognized Native Hawaiian master healer.

Act became law, 28.3% of all clients/patients served by Native Hawaiian Health Care Centers seek and receive traditional Native Hawaiian healing/cultural services. This percentage does not include individuals who seek Native Hawaiian traditional healing from other community health centers (e.g., federally qualified health centers and rural health clinics). Hence, the number of people who seek traditional Native Hawaiian healing and cultural interventions is likely significantly higher than 28.3%.

**Effective and Promising Approaches**

Being healthy and filled with a sense of well-being requires a sustained and pervasive will among a people and their society to change their *internal* (i.e., a person’s constitutional biological-psychological-social-cultural health factors) and *external* (i.e., historical, cultural, socioeconomic, and political contextual factors that impact a population) *environments*. Several approaches have shown capacity and effectiveness in transforming internal and external environments such that historical and cultural contexts may serve as protective and/or mitigating factors against biological-psychological-social-cultural and economic adversities that worsen vulnerability, morbidity, and the likelihood of premature death.

**Understanding and Applying Ola to Strategically Accelerate Health Care Progress**

Ola is the framework within which Native Hawaiian health and wellness are centered – a framework which we believe is flexible enough to allow Western, Eastern, and other alternative health and wellness paradigms to co-exist because the common synthesizing thread that flows through the four elements of Ola (i.e., lōkahi, ‘ohana, pono, and kauhale) balance, redefine, and sustain relationships amid conflict and adversity. Within this framework of Ola, health education, promotion and prevention programs, and interventions can be developed by systematically and appropriately applying traditional *and* contemporary Native Hawaiian cultural principles and practices, in addition to Western, Eastern, and alternative medicine approaches.

**Aligning non-Hawaiian institutions and organizations.**

Augmenting the moderate, and at times inconsistent, advances made by non-Native Hawaiian federal, state, and private organizations that serve this indigenous population, such as the State Department of Health and University of Hawai‘i college of health sciences, will be important to better understand the effects of culture, psychosocial and population health research, and traditional Native Hawaiian cultural interventions. An Ola approach to health and wellness could be an effective framework within which these non-Native Hawaiian advances could be aligned with the work of Native Hawaiian organizations that have all developed and begun implementing strategic plans to fulfill their respective missions in serving Native Hawaiians. These Native Hawaiian organizations and their missions include:

1. State Office of Hawaiian Affairs: Overall advancement of Native Hawaiians
2. Kamehameha Schools: Improve the capability and well-being of Native Hawaiians through educational opportunities
3. Queen’s Health Systems: Provide health care services
4. Queen Lili‘uokalani Trust: Promote the health and wellness of children, particularly those at high risk
5. King William Charles Lunalilo Trust: Care for elders, particularly destitute elders
6. University of Hawai‘i’s School of Hawaiian Knowledge and its dedicated Native Hawaiian

centers and departments: Advance Native Hawaiian knowledge, language, scholarship and research in history, culture, law, traditional healing, and health services outcomes
7. Chaminade University: A Native Hawaiian-serving university with dedicated programs to advance the success of Native Hawaiian learners
8. State Department of Hawaiian Homelands: Native Hawaiian land settlement and housing

Transforming Ola into an operating system in which different Native Hawaiian and non-Native Hawaiian models of health co-exist and are applied to the right patients/clients, in the right way, at the right time, and in the right circumstances, requires an overseeing entity that has the demonstrated track record to align and coordinate the efforts of these different entities. Papa Ola Lōkahi is arguably the best suited to play this role in Hawai‘i because of its mission that is singularly dedicated to the advancement of Native Hawaiian health and wellness.

**Role of Papa Ola Lōkahi[66]**

Papa Ola Lōkahi was created specifically to develop and execute a master plan related to P.L. 102-396. During the past 30 years, Papa Ola Lōkahi has met its purpose of implementing and sustaining a model of cooperation that forms a statewide network of public and private organizations, which includes the five Native Hawaiian Health Care Centers that are funded by P.L. 102-396. Papa Ola Lōkahi operations have provided a needed integrative focus for the Native Hawaiian Health Care Centers, which have strategically and programmatically progressed at differing rates as a function of their local island's organizational and administrative capabilities.

**Advances in traditional Native Hawaiian health interventions.**

With fidelity to Native Hawaiian historical and cultural integrity, Papa Ola Lōkahi has been able to assist the centers and their communities in incorporating traditional Native Hawaiian healing and cultural practices into their traditional Western allopathic/osteopathic health and wellness programs. The work of Papa Ola Lōkahi is depicted in the Timeline that is part of this overall *E Ola Mau a Mau* publication, showing the chronology of events related to traditional Hawaiian healing practices since 1985. Appendix A of this chapter shows the progression of public policy, licensure, certification, and development of organizational councils within each Native Hawaiian Health Center to maintain the historical and cultural integrity of Native Hawaiian traditional healing, whose traditions and practices go back to the first Native Hawaiian-Polynesian settlers of the Hawaiian archipelago (Gutmanis, 1976/1979; Ka‘aiakamanu & Chun, 2003).

*The recent death* [December 31, 2000] *of Henry "Papa" Auwae, whom I consider the last living person of the traditional practices described by Kaupunihana, Akina and Ka‘aikamanu, is a warning to those interested in traditional medicinal practices of the imminent demise of any authentic link to these traditions. It is still possible, especially with the public interest now in native plants, to use the vast historical record of traditional medicine to not only recreate their practice but to discovery (sic) their formulation of treatments. If this is to succeed, it will take a new commitment and teaming of multi-disciplinary skills in medicine, botany, horticulture, anthropology, and Hawaiian studies to provide the analysis, but there must also be the commitment to funding and the natural resources needed to undertake such a long term project…Such a project may revival (sic) traditional healing arts, but it may also contribution (sic) the greater public health in the possible discoveries of materials for today's diseases, illnesses, and ailments.*

Malcolm Naea Chun
Waialae Nui, Honolulu
September 2003

A major outcome of Papa Ola Lōkahi's work with Native Hawaiian healers was the formation of the Kupuna Council, consisting of traditional Native Hawaiian cultural/healing practitioners from all major islands of Hawai‘i, with the knowledge, skills, and experience to certify incoming practitioners, as earlier described. In 2002, the Kupuna Council was given statutory authority by State law in Hawaii Revised Statutes (HRS) 453-2(c). (See Appendix A.) Perhaps more than any other entity, the Kupuna Council, supported by Papa Ola Lōkahi, is best equipped to ensure that those seeking to become traditional Native Hawaiian healers are competently trained, are knowledgeable of medicinal plants and protocols, and complete apprenticeships (which once took decades) in a time frame required to achieve proficiency.

In addition to the Kupuna Council, Papa Ola Lōkahi has recognized, supported, and helped to disseminate knowledge and training through programs

[66] Board of Health, wellness, and unity in body, mind, spirit, and environment

that support Ola and its core elements. While its annual budget has been relatively modest for the scope of its operations spanning a multi-island state, Papa Ola Lōkahi has been able to identify, augment, and partner with other Native Hawaiian health and educational organizations, Native Hawaiian communities, and universities and colleges with Native Hawaiian curricula and programs—on language, history, culture, learning styles, etc.—to further its overarching master plan for Ola among its people.

Papa Ola Lōkahi has used its influence and modest funds to help accelerate publications by intervention programs that utilize traditional cultural Ola principles and practices that are applied and synthesized for 21st- century health and wellness problems facing Native Hawaiians (Chun, 2009), from which innovative methods and interventions have been developed to restore Ola within families and among participants from Native Hawaiian (and Non-Hawaiian) communities, organizations, and schools. One of the most promising of these programs is Board and Stone, which is described in the next section.

**Updating Mana i ka Leo for the 21st Century – "A Board and Stone in Every Home"**

*Mana i ka leo, "words have power," whether spoken aloud or silently in your mind, words have the power to hurt or heal…to persuade, influence and change attitudes and behavior…to transform a person, a family…a community.*

*My grandmother worshipped the old gods…She was very powerful in five areas; mana i ka leo was one—she could harm (we call it 'anā'anā) or heal—she had the power to voice life or death. My mother rejected the kahiko ("old, ancient") gods…She was a warrior…mana i ka leo showed her that her voice possessed the power of life or death, wholeness or brokenness…Hence, she was ever-mindful of her words.*

*I don't have the mana of my mother and grandmother. From them I learned, then found my own way…my own understanding of mana i ka leo, "the power of the voice"…Mana i ka leo is the voice within each person that is trained—not judged or threatened—to exist within a framework of mindfulness…Where they find and use their voice as an inner-directed affirmation and belief to direct the mana of their spirit, intellect, emotion, and physical being to mālama[67] themselves, their 'ohana and others.*

*The training is called hana pono…it's a series of activities and tasks or focused work with a specific outcome. The work toward the outcome is what generates Ola. Hana pono is started and must be completed for mana i ka leo to take full effect.*

*As a boy, I pounded poi for my family…hard work, a hundred pounds a week with the board and stone. Ten years ago, I found out pounding poi with your own papa ku'i'ai[68] and pohaku ku'i'ai[69] wasn't done anymore…The practice was neglected, getting lost…maybe forgotten. Same thing like Ola—people neglect it, then start to lose it…After a while, they forget how to be healthy and well.*

Uncle Earl Kawa'a
Honolulu, Hawai'i
February 2018

Board and Stone was developed eight years ago by Earl Kawa'a, MSW, a 71-year-old Native Hawaiian resource specialist for Kamehameha Schools.[70] Born and reared on a kalo[71] farm in Hālawa valley on Moloka'i, his first language was 'Ōlelo Hawai'i, and his ancestral heritage part of Hawai'i's famed Moloka'i kahuna.[72] Kawa'a is a respected kupuna and culture expert who lives Ola—effortlessly balancing the Native Hawaiian ethnocultural identity that he formed as a boy with the European-American traditions he learned as man. Applying his 21st-century understanding and application of mana i ka leo, Kawa'a synthesized the ancestral cultural learning from his grandmother and his mother with his understanding of the historical and cultural contexts that he—and those he taught and served—lived within, to expand the theory of mana i ka leo into a process to attain Ola. He developed a method (i.e.,

[67] to care for, tend, honor
[68] poi board
[69] stone to pound taro into poi, poi pounder
[70] Kamehameha Schools is a private charitable educational trust endowed by the will of Hawaiian princess Bernice Pauahi Bishop (1831-1884), the great-granddaughter and last direct descendant of King Kamehameha I. It serves over 6,900 students of Native Hawaiian ancestry at its K-12 campuses on O'ahu, Maui, and Hawai'i Island, and at 30 preschool sites statewide. Furthermore, its extension programs educate an additional 40,000 learners in community collaborations with public charter schools, enhancement programs for public schools, and public schools that serve significant numbers of Native Hawaiian children.
[71] taro
[72] healer, master, sorcerer, priest

hana pono) to teach and train men, women, children, and youth over a 6- to 9-week period, with a focus on families.

During the 6-9 weeks, participants create the tools to prepare poi, selecting and shaping wood slabs to make the papa kuʻiʻai, and selecting and sculpting the fresh water stones for their pohaku kuʻiʻai. When these are completed, participants are able to pound steamed kalo corms into poi to feed themselves and their ʻohana. Along with the physical labor of making their board and stone, hana pono requires that participants' attitudes, social skills, and behaviors be reshaped and honed via prayer, listening, mindfulness, and conflict resolution—all necessary skills and attitudes that promote family unity, lifelong learning, and the attainment of Ola (Genegabus, 2017; Kawaʻa et al., 2017).

Participants of the Board and Stone training have described the process as giving them skills to deal with life challenges and stressors in their personal and professional lives, a sense of empowerment and self-efficacy, enhanced awareness of and respect for social and communication skills, and parenting skills. Essentially, they have learned, experientially, about the elements of Ola.

Kawaʻa and colleagues are currently developing two additional programs that build upon the board and stone program but extend it to meet two different sets of needs among Native Hawaiians. The first is a prenatal health program for mothers and fathers to prepare for the arrival of a newborn. A core principle is that the infant's first food after breast milk is poi. The poi is prepared with the board and stone the parents have made together, while their hana pono is to acquire the skills of parenting and raising a family. The second program under development is to use board and stone as an initiating step for incarcerated men, women, and youth to reintegrate into their families and communities after release from prison. This program may be particularly valuable given the high proportions of Native Hawaiians among those incarcerated in the state: 41% of the men, 44% of the women, and 50.5% of the youth (Office of Hawaiian Affairs, 2010).

**Other Promising Approaches**

The progress made and the promising approaches implemented over the past 30 years are substantive. Hawaiian organizations such as the Office of Hawaiian Affairs, Papa Ola Lōkahi, Kamehameha Schools, Pūnana Leo, The Queen's Health Systems, Queen Liliʻuokalani Trust, Association of Hawaiian Civic Clubs, and the King William Charles Lunalilo Trust have worked independently and collaboratively to develop and execute strategic plans that advance Native Hawaiian education, social services, cultural practices, and health and well-being of parents/prenates, infants, children, adolescents, adults, and elders. Notable advances through these strategic plans include:

- The University of Hawaiʻi system of campuses advancing Native Hawaiian knowledge, culture, education, skills, and practices via a School of Hawaiian Knowledge, College of Hawaiian Language, Center for Hawaiian Studies, the ʻIke Ao Pono Native Hawaiian Nursing Program, Ka Huli Ao, the School of Law's Native Hawaiian Center of Excellence, and the Department of Native Hawaiian Health and its own Native Hawaiian Center of Excellence within the School of Medicine
- In addition to the University of Hawaiʻi, Hawaii's two private universities are committed to the advancement of Native Hawaiians. Hawaii Pacific University offers courses on cultivating kalo.[73] Chaminade University is a Native Hawaiian-Serving Institution in which 28% of the student population is Native Hawaiian/Pacific Islander. Its Office of Native Hawaiian Partnerships is a resource for students, staff, and faculty that offers programs and services to promote Native Hawaiian culture and knowledge.
- During the past three decades, several studies have shown promising uses, with at least one case of replicable effectiveness (Kaholokula et al., 2017), of traditional Native Hawaiian healers and cultural practitioners to address attitudes toward traditional Native Hawaiian healing utilization (Chang, 2001; Bell et al., 2001), enhance well-being (Oneha, 2001), offer Laʻau Lapaʻau herbal healing (Kaʻaiakamanu & Chun, 2003; Judd, 1998), use hula to improve management of high blood pressure (Kaholokula et al., 2017), and prevent suicide (Goebert et al. 2018). Notably, no studies were found that evaluated the economic health impact of traditional Native Hawaiian healing and cultural interventions.
- Increasing numbers of cultural and sacred sites are protected and restored through state, federal, and private funding, along with robust volunteerism, on all islands of the Hawaiian archipelago. These include Native Hawaiian cultural and sacred archeological sites, e.g., fish ponds, which have been restored and protected through public and private grants and the volunteerism of Native Hawaiians and non-Native Hawaiians. These sites have served as

[73] taro

living classrooms within which students and community members are able to learn more about Native Hawaiians.

- Another promising approach is ʻŌiwi TV and online language website apps. ʻŌiwi TV is a cable channel broadcast on all major islands that produces documentaries, news, and multimedia content from a uniquely Native Hawaiian perspective. The language used on this cable channel is predominantly ʻŌlelo Hawaiʻi, the Hawaiian language. ʻŌiwi TV is a powerful communications and social media tool to gather and disseminate information about Native Hawaiian history and culture, and events and activities that advance Native Hawaiian health and wellness. Interactive language website platforms with apps were executed successfully in 2018, through the partnership of two Native Hawaiian school organizations (Kanaekona and Kamehameha Schools) with Duolingo, the world's most popular online language-learning site.

**Need for Alignment and Partnerships**

Federal, state, and non-Native Hawaiian private organizations have provided funding for programs that have moderately advanced, and inconsistently sustained, Native Hawaiian culture; biomedical, psychosocial, and disparities research; and health promotion, prevention, and interventions, including traditional Hawaiian cultural interventions. However, there is a need for greater, more formalized alignment and networking of these efforts to promote their effective and timely impact on Native Hawaiian health and wellness. Papa Ola Lōkahi could serve as the catalyst to align and formally network these diverse organizations, approaches, and interests by defining the common ground among them and providing the framework within which each entity could contribute to advance Ola. Ensuring Papa Ola Lōkahi's success would require legislative (federal and state) authority and higher levels of funding to augment, accelerate, and expand their work.

## Gaps

The original *E Ola Mau Health Needs Study* catalyzed the drafting and passage of U.S. Public Law 100-579, which was reauthorized as P.L. 102-396, the Native Hawaiian Health Care Act. This Congressional legislation established federal policy "1) to improve the health status of Native Hawaiians to the highest possible level and 2) to provide all the resources necessary to effectuate this policy," and began a process to cohere and direct the public will to improve the health and well-being of Native Hawaiians. Our review of the past 30 years since its enactment shows some success and much promise (as described in the Promising Approaches section above). Gaps, however, remain and must be closed to achieve the full intent of this public policy. The seven gap areas described below indicate the utility of a well-crafted law whose implementation has, by design, revealed anticipated and unanticipated hindrances inherent in the process of personal and societal transformation leading to health and well-being.

**1. Lack of health and wellness programs and activities to serve all Native Hawaiians**

The Native Hawaiian health system that was envisioned in the 1985 *E Ola Mau Health Needs Study* does not yet exist as a fully integrated statewide community health system. Its present form consists of a diverse spectrum of programs housed within community-based Native Hawaiian Health Centers. Some centers are highly organized, with ambulatory clinics, community programs, and seamless linkages to traditional Native Hawaiian healers and cultural practitioners; while a few are less organized, providing less than optimal health, wellness, and navigator services. The centers range from mediocre to outstanding levels of effectiveness and quality.

The strongest health system components involve centers with a committed cadre of physicians, nurses, social workers, and community outreach staff who are led and supported by capable health care administrators. These centers have ready access to cultural practitioners to whom they can refer patients.

Centers that struggle are those lacking health care administrators who are formally trained in, for example, public health and/or administration, and who can deploy management skills to develop a health and wellness delivery system to attain ola[74] for the community members they serve. They also lack a critical mass of committed health care professionals in medicine, nursing, and the social services who can provide supervision to the community outreach workers. The extent to which Native Hawaiian traditional healers and cultural practitioners are called upon to work with other staff and patients at these centers depends upon the professional staff, particularly physicians.

**2. Need for Native Hawaiian Health Care Administrators formally trained in health care services delivery, finances, personnel, and**

[74] life, well-being and health

**operations to sustain community-based, ambulatory and inpatient services for Native Hawaiians within rural, suburban, and urban communities**

As cited in the previous paragraph, a factor contributing to the struggle of some Native Hawaiian Health Centers is the lack of a formally trained, and ideally experienced, executive manager who also understands Native Hawaiian cultural and healing practices, values, and history. There are no existing university curricula to train Health Care Administrators to develop and manage health care services, personnel, finances, facilities, and systems that serve Native Hawaiians and sustain networks of partnerships that appropriately combine traditional Native Hawaiian healing and cultural practices with Western allopathic and osteopathic models, and Eastern and alternative treatment protocols.

**3. Papa Ola Lōkahi lacks the statutory authority and budget to meet its mission.**

While Papa Ola Lōkahi has made remarkable progress over the last 30 years, it requires additional statutory authority from Congress and the Hawai‘i State legislature to direct, coordinate, plan, and successfully execute necessary political, educational, research, and clinical activities on the islands of O‘ahu, Kaua‘i, Moloka‘i, Lāna‘i, Maui, and Hawai‘i. That Papa Ola Lōkahi has sustained a track record of success with only modest resources, and an indirect model of administrative oversight based on cooperation rather than coordination, indicates that with increased funding and statutory authority giving them direct (i.e., coordinating) oversight, Papa Ola Lōkahi could transform the present system into a clearly defined, effective Native Hawaiian Health System of Care with seamless access to and benefit from cultural practitioners. Increased funding and resources would, for example, provide Papa Ola Lōkahi with the personnel infrastructure to recruit health strategies consultants to work with the Native Hawaiian Health Centers and the island communities they serve, to optimize community engagement and identify, leverage, and deploy the neighborhood, community, private, and governmental resources needed to sustain a vibrant and valued Native Hawaiian Health System.

**4. Decreasing numbers of Native Hawaiian traditional healers and cultural practitioners and inadequate reimbursement for cultural practitioner services**

Sadly, but not unexpectedly, most of the original master traditional healers of the Kupuna Council have died during the past 30 years, and their haumana[75] are unable to develop full-time careers in cultural practices for Native Hawaiian health and healing without compensation for their services. The result is that there are insufficient numbers of trained and competent traditional Native Hawaiian healers and cultural practitioners. Papa Ola Lōkahi—with appropriate levels of funding—would be able to support and oversee the revitalization and renewed growth and integration of the Kupuna Councils on all islands.

Compounding the challenge of increasing the number of Native Hawaiian traditional healers and cultural practitioners is the lack of culturally appropriate compensation (as a general rule, Native Hawaiian traditional healers and cultural practitioners do not participate in fee-for-service paradigms). Furthermore, most Native Hawaiian culture-centered health and wellness programs are not reimbursed by health insurers. While these cultural practitioners have received statutory authority from the State (see discussion of the Kupuna Council above), they are not licensed healthcare providers. This non-licensed designation was a policy decision made by these native practitioners to protect against exploitation of their native healing by participants (predominantly non-Native Hawaiian) in their workshops who would then charge for these Native Hawaiian healing services and name the Native Hawaiian healer who led the workshop as their kumu.[76] From the perspective of the kumu, a student/apprentice must train for many years before they meet competency to practice independently. Thus, Native Hawaiian cultural practitioners, who are vital to imparting the principles of Ola to Native Hawaiians, cannot be reimbursed for their services. A reauthorization of P.L. 102-396 must include funding to support designated practitioners who provide interventions that are part of the health care centers' menu of services.

**5. Lack of a Native Hawaiian kūpuna[77] geriatric health care system**

Native Hawaiian elders are the human repositories of ancestral stories and traditional culture and practices. The shorter lifespan of Native Hawaiians makes it imperative that P.L. 102-396 close this gap by extending the health policy to advance

[75] student, pupil, apprentice, recruit, disciple
[76] master teacher
[77] elders, ancestors, plural; kupuna without the macron over the first "u" is elder, ancestor, singular

Native Hawaiian elder care. The King William Charles Lunalilo Trust is the smallest endowed Hawaiian trust whose mission is to serve elders, with preference for destitute Native Hawaiians. They have just completed a 10-year strategic plan that would extend their model of culture-centered housing and care environments (i.e., a kauhale system of seamless care) that protect and perpetuate the health, wellness, and dignity of elders, and thereby enhance their generative capacity to pass on their ancestral knowledge and wisdom, particularly to ʻōpio.

**6. Inadequate emphasis on the ethnocultural identity of Native Hawaiian youth**

Hawaiian ʻōpio[78] do not fully know or appreciate the extent and power of their Hawaiian ethnocultural identity. Unlike Earl Kawaʻa, and nearly all the cultural practitioners in the study, whose Native Hawaiian ethnocultural identities were molded as youth surrounded by the Hawaiian language and way of life, many of today's Native Hawaiian youth do not develop a Native Hawaiian ethnocultural core. Moreover, there is no generative strategy to transform ʻōpio and their families into articulate, assertive citizens able to employ ancestral narratives that advance a resonating 21st-century ethnocultural identity. Programs like board and stone, taught in schools, may help to close this gap. Native Hawaiian youth, like most youth in Hawaiʻi and the continental United States, are accustomed to, and in many instances more comfortable with, social media, online website platforms, and apps that can be accessed through mobile phones and devices. Hence, developing new strategies that use website platforms, apps, and social media to promote access to Native Hawaiian culture, language, Native Hawaiian Health Centers, and Native Hawaiian traditional healers and cultural practitioners, as well as Western allopathic and osteopathic physicians, nurses, physician assistants, social workers, and community health navigators would open up additional avenues of connectedness and communication, particularly to youth, young adults, and tech-savvy elders.

**Cable television and online websites for Native Hawaiian language learning.**

The use of technology such as ʻŌiwi TV would be invaluable for engaging Native Hawaiians through a medium they are accustomed to using. Funding through POL could extend the reach of ʻŌiwi TV via mobile phone and other portable electronic device applications that could promote Native Hawaiian language use, values, practices, and principles, particularly for young adults and youth who communicate largely through social media and website apps. On October 8, 2018, in observance of Indigenous Peoples Day, Duolingo (a popular education platform available online and as an app), Kanaekona (a network of more than 50 Native Hawaiian culture-based schools), and Kamehameha Schools came together and launched a free virtual Hawaiian language-learning website with an app platform, which is available internationally (Schweizer, 2018; Wu, 2018). This online app and website have the ability to extend the reach of education in Native Hawaiian language and culture. Online website platforms and apps such as these should likewise be developed to link Native Hawaiian youth and young adults to health care networks. Funding through Papa Ola Lōkahi could extend the reach of communications technology to make available to children, youth, and adults the elements of Native Hawaiian lifestyles (e.g., language, cultural values, principles, healing practices, and coping strategies) that bring to life Ola and resilience.

**7. Insufficient outcomes research and scholarly development**

While our review of the literature, which included audio and video recordings, showed a tremendous increase in the existing knowledge of Native Hawaiian historical and cultural perspectives, there was still a paucity of publications of quantitative and qualitative studies that documented a) ancestral knowledge of health and healing theories and methods; b) with the exception of the Mana i ka Leo/Board and Stone model to attain Ola, techniques or methods that advance traditional healing and cultural interventions that innovatively address 21st-century sociocultural contexts; and c) the economic health impact for those who have received traditional Native Hawaiian healing and cultural interventions. Outcomes research using qualitative and qualitative designs is rare, but is necessary to empirically distinguish those interventions that are effective/efficacious from those that are not.

## Recommendations for Impact

The recommendations for this report were derived from task force meetings, multi-island meetings of elders and experts (Kūpuna Kūkākūkā and Pūʻulu: Mana i ka Leo), key informant interviews, literature review, moʻolelo and mele, and review of the timeline

[78] youth

and track record of activities and successes achieved by Papa Ola Lōkahi with modest resources.

❖ **Increase Support for Community Engagement Programs.**

1. Enhance the statutory authority and increase the annual budget of Papa Ola Lōkahi, thereby strengthening its capacity to appraise, direct, coordinate, and consolidate effective/promising Native Hawaiian health and wellness activities/programs so as to produce a fully functional, high-quality Native Hawaiian Health System.

❖ **Increase Culturally Based and Culturally Adapted Interventions that Demonstrate Empirical Effectiveness and/or Efficacy.**

2. Identify, evaluate, and sustain promising culture-directed intervention approaches and programs, e.g., Board and Stone, across the life span for parents/prenates, infants, children, youth, adults, and elders.
3. Fund quality improvement, health/wellness outcomes research, scholarly documentation of ancestral knowledge, and contemporary innovative applications of traditional native health and culture interventions.

❖ **Improve and Ensure Health Care Access.**

4. Partner with health care insurers and providers to complete due diligence for an optimal, affordable health insurance program that will shape Native Hawaiian population health strategies for care and wellness.

❖ **Develop Workforce for Traditional Cultural Practitioners and Health Care Administrators.**

5. Provide funding to Papa Ola Lōkahi to sponsor and oversee programs to: a) educate and train traditional cultural practitioners, b) work with Hawai‘i-based health insurers to develop a mechanism to reimburse traditional cultural practitioners, and c) develop strategic and business plans to include these practitioners in Native Hawaiian Health Centers as equitably compensated health and wellness providers.

A major part of this chapter focused on the need for Native Hawaiian cultural approaches to health and wellness. It is of vital importance to create opportunities for well-trained Native Hawaiian cultural practitioners, particularly kūpuna with expertise at the kahuna[79] master level and their mo‘olono[80] and haumana,[81] to work within a Native Hawaiian health community network to perform their distinct assessments and interventions. This would also be invaluable in providing Western- trained clinicians with a grounding and fundamental proficiency in comprehending how Native Hawaiian cultural approaches work within indigenous Hawaiian communities.

6. Provide funding to Hawai‘i universities to create curricula and programs to educate and train a cadre of Native Hawaiian health care administrators at the baccalaureate and master’s levels in organizational management and/or public health administration, with specific training in concepts and processes to advance health and wellness from both Native Hawaiian and Western perspectives and traditions.

❖ **Expand Funding and Resources.**

7. Increase Papa Ola Lōkahi funding in the reauthorization of P.L. 102-396 to expand and accelerate the role of this organization that has proven its effectiveness in addressing and advancing many of the findings and recommendations of the 1985 *E Ola Mau Health Needs Study*. Papa Ola Lōkahi is core to the continued success of this public policy to improve the health and wellness of Native Hawaiians in their homeland.

## Conclusion

P.L. 102-396 set forth a public policy which, over the past 30 years, has shown its value to Hawaii’s indigenous, first-nation people. From a historical and cultural perspective, the policy made bold attempts to promote traditional Native Hawaiian cultural practices. Through the authority and charge given to Papa Ola Lōkahi by this law, traditional practitioners were gathered and formally organized into a cohesive group, the Kupuna Council, that can more clearly discern and articulate what they would require as

[79] expert in any profession; usage here implies expertise at the master level in traditional Native Hawaiian healing and Native Hawaiian cultural practice

[80] qualified practitioner who is an apprentice to a kahuna

[81] student, pupil, apprentice, recruit, disciple

community leaders to make a larger and more meaningful impact on the health and wellness of Native Hawaiians. Public and private universities and organizations have developed programs and strategic plans to advance Native Hawaiian health and well-being. The literature on Native Hawaiian history and culture has grown exponentially because of this federal policy, augmented by state statutes and funding that supported the federal policy; and has re-examined adverse events, e.g., the quarantine laws for leprosy that lasted from 1865 to 1969, which explain the continued resistance of Native Hawaiians to seeking care from Western-trained nurses and allopathic/osteopathic physicians. Promising innovations have applied traditional health and wellness concepts such as Ola and Mana i ka Leo to 21st-century Western health care models to augment and accelerate Native Hawaiian healing, health, and wellness.

Well-crafted public policy reveals gaps due to previously unidentified needs and unanticipated economic downswings; it sharpens the distinction between what works and what does not work; and it identifies new ideas and initiatives that show promise.

Five of our seven recommendations (1, 4, and 5-7) highlight the gains made, balanced by the gaps that need to be addressed, through a few straightforward amendments to the existing policy. One set of amendments (Recommendations 1 and 7) gives Papa Ola Lōkahi: a) additional statutory authority to coordinate and align the multiple public, private, Native Hawaiian, and non-Hawaiian entities into a formal, high-functioning, high-quality Native Hawaiian health care system and network; and b) establishes new funding guidelines to ensure that Papa Ola Lōkahi has the budget to accelerate its work and efforts in a prudent manner that is regularly evaluated. A second amendment, associated with recommendation #4, would set forth the policy for Papa Ola Lōkahi to exercise due diligence and develop strategic and business plans to establish a Native Hawaiian insurance program with one or more of Hawaii's existing health insurers. The final set of amendments to P.L. 100-579 would meet the workforce needs (Recommendations 5 and 6) in two areas that require increased numbers of individuals with formal training as: a) master's-level Native Hawaiian Health Administrators, and b) traditional Native Hawaiian cultural practitioners.

Thirty years ago, our colleagues who made up the Historical/Cultural task force set forth bold recommendations based on their review of the knowledge and information they systematically gathered that showed urgent needs in this domain. A full generation later, our 2019 Historical and Cultural task force review has shown that while progress has been made, the needs remain compelling and urgent. Nevertheless, our work indicates that these needs have become more clearly defined and focused; above all, the task of addressing them is eminently feasible with the implementation of our recommendations and suggested amendments to a reauthorized P.L. 102-396.

# References


Abbott, I. A. (1992). *La‘au Hawai‘i: Traditional Hawaiian uses of plants.* Honolulu, HI: Bishop Museum Press.

‘Aha Pūnana Leo. (2017). A timeline of revitalization. Downloaded from: http://www.ahapunanaleo.org/index.php?/about/a_timeline_of_revitalization/

‘Aha Pūnana Leo. (2018). Pūnana Leo preschools. Downloaded from: http://www.ahapunanaleo.org/index.php?/programs/youth_programs_-_punana_leo/

Amundson, R., & Ruddle-Miyamoto, A. (2010). A wholesome horror: The stigmas of leprosy in 19th-century Hawaii. *Disability Studies Quarterly*, *30*(3-4). DOI: http:dx.doi.org/10.18061/dsq.v30i3/4.

Andrade, N. N., & Bell, C. K. (2011). Chapter 1 – The Hawaiians. In *People and cultures of Hawai‘i: The evolution of culture and ethnicity* (pp. 1-31). Honolulu, HI: University of Hawai‘i Press.

Bell, C. K., Goebert, D. A., Andrade, N. N., Johnson, R. C., McDermott, Jr., J. F., Hishinuma, E. S., …Miyamoto, R. H. (2001). Sociocultural factors influencing adolescent preference and use of native Hawaiian healers. *Complementary Therapies in Medicine*, *9*, 224-231.

Bell, C. K., Goebert, D. A., Miyamoto, R. H., Hishinuma, E. S., Andrade, N. N., Johnson, R. C., & McDermott, Jr., J. F. (2001). Sociocultural and community factors influencing the use of Native Hawaiian healers and healing practices among adolescents in Hawai‘i. *Pacific Health Dialog, 8*(2), 249-259.

Blaisdell, R. K. (1985). Historical/Cultural task force report. In *E ola mau: The Native Hawaiian health needs study* (pp. 18-22). Honolulu, HI: ALU LIKE, Inc.

Blaisdell, R. K. (1989). Historical and cultural aspects of Native Hawaiian health. *Social Process in Hawai‘i, 32*, 1-21.

Bushnell, O. A. (1963). *The gifts of civilization: Germs and genocide in Hawai‘i*. Honolulu, HI: University of Hawai‘i Press.

Chang, H. K. (2001). Hawaiian health practitioners in contemporary society. *Pacific Health Dialog*, *8*(2), 260-273.

Charlot, J. (1983). *Chanting the universe – Hawaiian religious culture.* Hong Kong: Emphasis International Limited.

Chun, M. N. (2009). *It might do good: The licensing of medicinal kāhuna.* Honolulu, HI: First Peoples’ Production.

Chun, M. N. (2006). *Ka wana series. Kapu: Gender roles; Ho‘omana: Understanding the sacred and spiritual. Alaka‘i: Traditional leadership; Hewa: The wrong way of living. Ola: Tradtional concepts of health and healing. Kākā‘olelo: Traditions of oratory and speech making. Welina: Traditional and contemporary ways of welcome and hospitality; Pono: The Way of Living. Ho‘oponopono: Traditional Ways of Healing to Make Things Right Again. A‘o: Educational Tradition.* Honolulu, HI: Pihana Na Mamo.

Chun, M. N. (2009). *Ho‘onohonoho: Traditional Ways of Cultural Management.* Honolulu, HI: Pihana Na Mamo.

Chun, M. N. (2011). *No Na Mamo: Traditional and Contemporary Beliefs and Practices*. Honolulu, HI: University of Hawai‘i Press.

Clifford, E. (1889). Father Damien and leprosy in India. *Fortnightly Review*, 140-150.

Donlin, A. L. (2010). When all the kahuna are gone: Evaluating Hawaii’s traditional Hawaiian healers’ law. *Asian-Pacific Law & Policy Journal*, *12*, 210-330.

Enos, E. (1995). *A handbook of kalo basics: For its planting, care, preparation and eating*. Mililani, HI: Islander Group.

Enos, E., & Johnson, K. (1996). *A handbook of kalo basics: For its planting, care, preparation and eating* (2nd ed.). Wai‘anae, HI: Ka‘ala Farms, Inc.

Fuchs, L. H. (1961). *Hawaii pono – An ethnic and political history.* Honolulu, HI: Bess Press.

Galang, B., & Foye, T. (2014, April). Traditional healing: Laws, politics, protocols and kupuna councils. Papa Ola Lōkahi presentation, Honolulu, HI.

Genegabus, J. (2017, June 18). Shaping hearts and minds. *Honolulu Star Advertiser*.

Goebert, D., Alvarez, A., Andrade, N. N., Balberde-Kamalii, J. B., Carlton, B. S., Chock, S., …Sugimoto-Matsuda, J. (2018). Hope, help, and healing: culturally embedded approaches to suicide prevention, intervention and postvention services with Native Hawaiian youth. *Psychological Services*, *15*(3), 332-339.

Goo, S. K. (2015, April). After 200 years, Native Hawaiians make a comeback. Pew Research Center Report. Downloaded 02/23/2018: http://www.pewresearch.org/fact-tank/2015/04/06/native-hawaiian-population/

Greig, T. F. (1993). *Plants in Hawaiian culture.* Honolulu, HI: University of Hawai‘i Press.

Gutmanis, J. (1976/1979). *Kahuna la‘au lapa‘au.* Honolulu, HI: Honolulu Publishing Co., Ltd.

Gutmanis, J. (1983). *Na pule kahiko – ancient Hawaiian prayers*. Honolulu, HI: Editions Limited.

Hawai‘i State Department of Health, Health Surveillance Program. (1990). Data of self-reported Native Hawaiian ethnicity.

Hawai‘i State Data Center. (2015, November 3). Census data highlight for language spoken at home.

Ho‘oulumahiehie (Author), & Nogelmeier, P. (Ed.). (2013). *The epic tale of Hi‘iakaikapoliopele.* Honolulu, HI: Awaiaulu, Inc.

Inglis, K. (2004). *A land set apart: Disease, displacement, and death at Makanalua, Moloka‘i* (Doctoral dissertation). University of Hawai‘i at Mānoa.

Jaworowski, S. (1998, December). Hawaiian demographic data: ‘Ehia kānaka maoli?. Honolulu, HI: Legislative Reference Bureau (pp. 3-5, 10).

Judd, N. L. K. M. (1998). Laau lapaau: Herbal healing among contemporary Hawaiian healers. *Pacific Health Dialog 5*(2), 239-245.

Ka‘aiakamanu, D. K. M. (Author), & Chun, M. N. (Trans.). (2003). *The Territory of Hawai‘i – Native Hawaiian medicine, Vol. III.* Honolulu, HI: First People’s Productions.
Kaholokula, J. K., Look, M., Mabellos, T., Zhang, G., de Silva, M., Yoshimura, S., …Sinclair, K. A. (2017). Cultural dance program improves hypertension management for Native Hawaiians and Pacific Islanders: A pilot randomized trial. *Journal of Racial and Ethnic Health Disparities, 4*(1), 35-46.
Kame‘eleihiwa, L. (1992). *Native lands and foreign desires*. Honolulu, HI: Bishop Museum.
Kauanui, J. K. (2008). *Hawaiian blood: Colonialism and the politics of sovereignty and indigeneity.* Durham, NC: Duke University Press.
Kawa‘a, E., Paglinawan, L., Kauahi, D., Kaohi, A., Perreira, N., Patterson, M., …Farden, H. (2017, July 25). *Pū‘ulu: Mana i ka leo*. Discussion session at Kaumakapili Church Hall, Honolulu, HI.
Kepelino. (2007). *Kepelino’s traditions of Hawai‘i*. Honolulu, HI: Bishop Museum Press.
Kirch, P. V. (1985). *Feathered gods and fishhooks.* Honolulu, HI: University of Hawai‘i Press.
Kirch, P. V., & Sahlins, M. (1992). *Anahulu: The anthropology of history in the Kingdom of Hawaii.* Vol I: *Historical ethnography*. Chicago, IL: University of Chicago Press.
Lili‘uokalani. (1990). *Hawaii’s story by Hawaii’s Queen.* Honolulu, HI: Mutual Publishing.
Lee, W. K. M., & Look, M. A. (Eds.). (2017). *Ho‘i hou ka mauli ola: Pathways to Native Hawaiian health.* Honolulu, HI: University of Hawai‘i Press and Hawai‘inuiākea School of Hawaiian Language.
Lum, J. K., Rickards, O., Ching, C., & Cann, R. I. (1994). Polynesian mitochondrial DNAs reveal three deep maternal lineage clusters. *Human Biology 66*(4), 567-590.
MacKenzie, M. K., Serrano, S. K., Sproat, D. K., Obrey, A. K., & Poai, A. K. (Eds.) (2015). *Native Hawaiian law: A treatise*. Honolulu, HI: Kamehameha Publishing.
Merry, S. E. (2000). *Colonizing Hawai‘i: The cultural power of law*. Princeton, NJ: Princeton University Press.
Native Hawaiian Health Research Consortium. (1985a). *E ola mau: The Native Hawaiian health needs study.* Honolulu, HI: ALU LIKE, Inc.
Native Hawaiian Health Research Consortium. (1985b). *E ola mau: The Native Hawaiian health needs study: Mental Health Task Force Report* (pp. 3-6). Honolulu, HI: ALU LIKE, Inc.
Native Hawaiian Justice Task Force Report. (2012). Downloaded 06/19/2019 from: https://www.oha.org/wp-content/uploads/2012NHJTF_REPORT_FINAL_0.pdf
Neason, A. (2016, June 8). How Hawaiian came back from the dead: A legacy of colonialism nearly wiped out the language and its culture. These immersion schools weren’t having it. *Slate.* Downloaded from: http://www.slate.com/articles/life/tomorrows_test/2016/06/how_the_ka_papahana_kaiapuni_immersion_schools_saved_the_hawaiian_language.html
*New York Times* Archives. (1985, September 22). Hawaiians fear loss of the native language p. 1001038. Downloaded from: https://www.nytimes.com/1985/09/22/us/hawaiians-fear-loss-of-the-native-language.html
Nogelmeier, P. (2010). *Mai pa‘a i ka leo: Historical voice in Hawaiian primary materials – Looking forward and listening back.* Honolulu, HI: Bishop Museum Press.
Office of Hawaiian Affairs. (2010). *The disparate treatment of Native Hawaiians in the criminal justice system.* Honolulu, HI: OHA.
Oneha, M. F. M. (2001). Ka mauli o ka ‘āina a he mauli kānaka: An ethnographic study from an Hawaiian sense of place. *Pacific Health Dialog 8*(2), 299-311.
Osorio, J. K. K. (2002). *Dismembering Lāhui: A history of the Hawaiian nation to 1887*. Honolulu: University of Hawai‘i Press.
Pe‘a, J. L. (1990, November 17). *The prevention program of integrating healing: based on the Hawaiian concept of Pā-ola (quick healing).* Kailua-Kona, HI: The Institute of Pā-Ola Science of Integrating Healing.
Pinkney, D. S. (1990). Native healers: Sharing the cures and hopes of traditional Hawaiian medicine. *American Medical News, 33*(4), 9-11.
Polynesian Voyaging Society. (2018). The Mālama Honua worldwide voyage continues into 2018. Downloaded on 06/19/2019 from: http://www.hokulea.com/worldwide-voyage/
Schmitt, R., & Nordyke, E. (2001). Death in Hawai‘i: The epidemics of 1848-1849. *Hawaiian Journal of History*, *35*, 1-13.
Schweizer, L. (2018, October 8). Learning ‘olelo Hawai‘i is now at your fingertips. KITV Island news report.
Stannard, D. E. (1989). *Before the horror*. Honolulu, HI: University of Hawaii Press.
Swanson, D. (June 2016). The number of Native Hawaiians and Part-Hawaiians in Hawai‘i , 1778-1900: Demographic estimates by age, with discussion. Conference paper at Canadian Population Society, Calgary, Alberta, Canada. Downloaded 02/23/2018 from: https://www.researchgate.net/.../David_Swanson10/...HAWAIIANS...HAWAIIANS...
Valeri, V. (1985). *Kingship and sacrifice*. Chicago, IL: University of Chicago Press.
Wu, N. (2018, October 8). Hawaiian language course now available on Duolingo. *Star Advertiser*. Honolulu, HI.
Young, B. C. (2017, March 9). Kūpuna kūkākūkā session, Waimea, Hawai‘i Island, HI.

# Appendix A

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## CHRONOLOGY OF EVENTS RELATING TO TRADITIONAL HAWAIIAN HEALING PRACTICES SINCE 1985

The following chronology is an attempt to identify major public policy events around which discussion of traditional Native Hawaiian healing practices has occurred. It is not a comprehensive listing of all activities that have occurred during the past two decades around traditional Hawaiian healing practices.

**1985**

December 1985: The Native Hawaiian Health Research Consortium under *ALU LIKE* releases its *E Ola Mau – Native Hawaiian Health Needs Study*, which identifies the importance of culture and traditional healing practices for addressing health issues and improving health and wellness in the Native Hawaiian community.

**1986**

June 16, 1986: The organization *E Ola Mau* is formed by Dr. Kekuni Blaisdell and later incorporated under Dr. Chiyome Fukino as its first president to bring together Native Hawaiian traditional practitioners and western-trained health professionals.

October 11, 1986: The *Office of Hawaiian Affairs (OHA)* along with *ALU LIKE* and *E Ola Mau* sponsor ʻAha Kupuna Laʻau Lapaʻau with guidance from Uncle Harry Mitchell. This was one of the first state gatherings of traditional practitioners and was held on Oʻahu.

**1988**

February 14-17, 1988: OHA sponsors the second ʻAha Kupuna Laʻau Lapaʻau gathering at the Keauhou Beach Hotel in Kailua-Kona, Hawaiʻi. This was the second such gathering and attended by more than 40 participants.

October 31, 1988: The United States promulgates the Native Hawaiian Health Care Improvement Act (P.L. 100-579) which recognizes the role of Native Hawaiian traditional healing practices and defines *Traditional Native Hawaiian Healer* (42 USC 11707(9)):

*The term "traditional Native Hawaiian healer" means a practitioner-*

*(A) who-*
*(i) is of Hawaiian ancestry, and*
*(ii) has the knowledge, skills, and experience in direct personal health care of individuals, and*

*(B) whose knowledge, skills and experience are based on a demonstrated learning of Native Hawaiian healing practices acquired by-*
*(i) direct practical association with Native Hawaiian elders, and*
*(ii) oral traditions transmitted from generation to generation.*

The Act goes on to state:

*Nothing in this Act shall be construed to restrict the authority of the State of Hawaii to license health practitioners (42 USC 11708).*

**1989**

After the OHA sponsored conference, follow up gatherings, "Own Identity, Own Voice," were held throughout the year on different islands sponsored by E Ola Mau to provide the opportunity for the practitioners to continue their conversation.

**1992**

October 6, 1992: The United States promulgates the reauthorization of the Native Hawaiian Health Care Improvement Act (P.L. 102-396) which incorporates the above definition (42 USC 11711(10)) and includes the statement enabling licensure by the State of Hawaii (42 USC 11712).

**1995**

October 17-19, 1995: *POL* and others support the *1995 Hawaii Symposium on Healing Alternatives* sponsored by the US Department of Veterans Affairs. Presenters included: Papa Henry Auwae, Aunty Margaret Machado, Aunty Ulunui Garmon, Hinano Paleka, Aunty Betty Jenkins, Frank Hewett, and Uncle Kalua Kaiahua.

**1996**

August 22, 1996: A major organization of traditional healing practitioners, *Kupuna Laau Lapaau o Hawaii*, under Po'okela Papa Henry Auwae, incorporates with the mission to "perpetuate the art of *laau lapaau*."

**1998**

January 1998: SB 1946 introduced into the State Legislature which recognizes the importance of traditional healing practices and definitions noted in the federal Native Hawaiian Health Care Improvement Act and mandates Papa Ola Lōkahi (POL) to develop a process that would protect traditional Hawaiian healing practices and Native Hawaiians who practice them. The Act exempts Native Hawaiian practitioners from state licensure for practicing medicine for two years until July 1, 2002, to enable time for public discussions and input.

July 14, 1998: SB 1946 passes as Act 162.

The Act is codified in *HRS 453-2(C) License required; exceptions:*

*Nothing herein shall prohibit traditional Hawaiian healing practices by traditional native Hawaiian healers, both as recognized and certified as such by the panel convened by Papa Ola Lokahi*

October 29-31, 1998: POL convenes a gathering of respected Native Hawaiian *kupuna kahuna* of traditional healing practices and their *kako'o* to discuss Act 162 in Kailua-Kona, Hawai'i. Those master practitioners (and their *kako'o)* invited to attend are:

Papa Henry Auwae (Haunani Kalama Smith)
*Kahu David Kaalakea (Keoki Sousa)
*Aunty Abbie Napeahi
Aunty Margaret Machado (Nerita Machado)
Aunty Agnes Cope (Kamaki Kanahele)
Aunty Malia Craver (Millie Kawaa)
Uncle Kalua Kaiahua (Janice Nielson)
*unable to attend

October 31, 1998: This group develops the **KAHUNA STATEMENT** for the legislature. It states:

*WE, THE UNDERSIGNED KUPUNA PRACTITIONERS OF HAWAIIAN HEALING HAVE COUNSELED AND AGREE:*

***(1)*** *THAT WE ARE ONLY INSTRUMENTS IN THE HEALING PROCESS AND THAT THE TRUE SOURCE OF HEALING COMES FROM THE ALMIGHTY, KNOWN AS AKUA, 'IO, OR GOD. IT IS THIS SOURCE THAT GIVES US OUR CALLING TO PRACTICE;*

***(2)*** *THAT WE ARE ONLY INSTRUMENTS IN THE HEALING PROCESS AND THAT THE TRUE SOURCE OF HEALING COMES FROM THE ALMIGHTY, KNOWN AS AKUA, 'IO, OR GOD. IT IS THIS SOURCE THAT GIVES US OUR CLLING TO PRACTICE;*

***(3)*** *THAT THE LEGISLATURE OF THE STATE OF HAWAI'I IS NOT KNOWLEDGEABLE IN THE HEALING TRADITIONS OF THE HAWAIIAN PEOPLE; AND*

***(4)*** *THAT WHILE WE ARE GRATEFUL THAT THE LEGISLATURE HAS PASSED S.B. 1946, THE BLOOD QUANTUM, LICENSURE, AND CERTIFICATION ISSUES RAISED IN THE LEGISLATION ARE INAPPROPRIATE AND CULTURALLY UNACCEPTABLE FOR GOVERNMENT TO ASCERTAIN. THESE ARE THE KULEANA OF THE HAWAIIAN COMMUNITY ITSELF THROUGH KUPUNA WHO ARE PERPETUATING THESE PRACTICES.*

*FURTHER, WE AGREE THAT KUPUNA HENRY AUWAE SERVES AS CHAIRMAN OF THIS COUNCIL OF MASTER PRACTITIONERS AND HAS THE CONSENT OF ITS MEMBERS TO ADDRESS FUTURE ISSUES RELATED TO THIS LEGISLATION.*

*SIGNED:*
*Henry Auwae, Po'okela*
*Agnes Cope*
*Malia Craver*
*Kalua Kaiahua*
*Margaret Machado*

December 9, 1998: Master practitioner Kahu David Kaalakea of Maui ua hala.

**1999**

January 10, 1999: POL submits its report with the KAHUNA STATEMENT to the State Legislature.

**2000**

Waianae Coast Comprehensive Health Center (WCCHC) opens its Native Hawaiian Traditional Healing Center

August 8, 2000: Master practitioner Kalua Kaiahua of Maui ua hala.

September 19-20: *POL* participates with the *Waimānalo Health Center* in its hosting of its "O Ke Aloha Ka Mea i Ho'ola Ai" Healers Conference. Act 304 is discussed in depth. A number of kupuna note their concerns with the act. Two major recommendations from the conference were made to POL:

(i) promote more discussion on each of the islands through 'aha; and
(ii) be accountable for legislation regarding Act 304.

*POL* contracts Kumu Kawaikapu Hewett to conduct kūkākūkā sessions with kupuna statewide on issues surrounding Act 304. Kupuna on all islands are interviewed.

December 31, 2000: Master practitioner Henry "Papa" Auwae ua hala.

**2001**

January 25, 2001: SB1390 is introduced into the State Legislature, which recognizes the KAHUNA STATEMENT and moves to initiate a process by which Native Hawaiian practitioners would be permanently exempt from licensure with the Native Hawaiian communities themselves serving as the appropriate reviewing authority. This legislation sets in motion a process to exempt "qualified" Native Hawaiians practitioners from licensure in the State of Hawai'i. The legislation:

(1) enables POL to form a panel or panels of traditional Native Hawaiian healers to address issues and recommend legislation relating to the permanent implementation of the purposes of this Act;
(2) adds composition requirements of the panel(s) convened by *POL;* and
(3) exempts practitioners from liability under medical licensing law.

July 2, 2001: SB1390 passes as **Act 304**.

**2002**

HRS 453-2(C) is amended to read:

> *Nothing herein shall prohibit traditional Hawaiian healing practices by traditional native Hawaiian healers, both as recognized and certified as such by a panel convened by Papa Ola Lokahi. No person or organization involved with the selection of panel members or the denial of certification of healers under this subsection shall be held liable for any cause of action that may arise out of their participation in the selection or certification process.*

February 2002: *POL* issues its instructions on the process for recognition and certification of Kupuna Councils in accordance with Act 304. *POL*'s intent is to recognize Kupuna Councils affiliated with the Native Hawaiian Health Care Systems and community health centers in the State of Hawai'i.

March 8, 2002: *Wai'anae Coast Comprehensive Health Center (WCCHC)* petitions POL for recognition of its Kupuna council in compliance with Act 304. POL grants recognition on December 10, 2002.

May 2002: *POL* submits inquiry to the State Attorney General regarding liability issues surrounding its Board responsibilities and those of panels formed under Act 304.

October 3, 2002 : The State Attorney General responds indicating that:

*POL* is not a State board and not eligible to counsel from its offices (POL is a private entity);

*(i)* Panels are state boards and are "eligible to seek advice and counsel from the Department of the Attorney General"; and

*(ii)* Panels are subject to HRS Chapters 91 and 92 requirements.

December 4, 2002: *POL* refines its recognition process in accordance with Act 304 for an organization and/or an agency wishing to provide traditional Hawaiian healing practices to their clients. The process requires that the requesting organization/agency submit a letter of request along with documenting evidence for recognition of its panel to POL. POL upon review then recognizes by letter the panel as being constituted in accordance with Act 304 if it is in fact in compliance with the act.

**2003**

March 7, 2003: *Nā Pu'uwai Native Hawaiian Health Care System, Moloka'i,* petitions POL for recognition of its Kupuna Council in compliance with Act 304. POL grants recognition.

March 7, 2003: *Hui No Ke Ola Pono Native Hawaiian Health Care System, Maui,* petitions POL for recognition of its Kupuna Council in compliance with Act 304. POL grants recognition.

August 11, 2003: *Hui Mālama Ola Nā 'Ōiwi Native Hawaiian Health Care System, Hawai'i,* petitions POL for recognition of its Kupuna Council (East Hawai'i) in compliance with Act 304. POL grants recognition.

**2004**

As per recognition by WCCHC's Kupuna Council, activities conducted by Native Hawaiian practitioners at the WCCHC are covered by the Federal Tort Reform Act. Additionally, the WCCHC develops perspective health service reimbursement codes for its services provided.

May 10, 2004: *POL* convenes a gathering of more than 20 recognized kupuna practitioners at the Honolulu International Airport to discuss the ongoing issues around licensure and quality assurance issues of practice.

**2005**

January 27, 2005: SB 1285 is introduced into the State Legislature which proposes the following amendments to Act 304:

(i) changes the word "panel" to "kupuna council";

(ii) makes each kupuna council independent from the State.

Each kupuna council shall:

1) be independent;
2) not be a component of any state branch;
3) not be subject to chapters 91 and 92, HRS; and
4) develop its own policies, procedures and rules necessary or appropriate to certify traditional Hawaiian healers.

June 23, 2005: SB 1285 passes as **Act 153**.

HRS 453-2(C) is amended to read:

*Nothing in this chapter shall prohibit healing practices by traditional Hawaiian healers engaged in traditional native Hawaiian healing practices, both as recognized and certified as such by any kupuna council convened by Papa Ola Lokahi. No person or organization involved with the selection of kupuna council members, the convening of a kupuna council, or the certification process of healers under this subsection shall be sued or held liable for any cause of action that may arise out of their participation in the selection, convening, or certification process. Nothing in this chapter shall limit, alter, or otherwise adversely affect any rights of practice of traditional Native Hawaiian healing pursuant to the Constitution of the State of Hawaii.*

**2006**

The health insurer AlohaCare accepts the criteria for credentialing under state law (Act 153), and provides reimbursement through AlohaCare for traditional Hawaiian healing services.

May 5-7, 2006: Traditional Healers ʻAha is held at Waimea, Kauaʻi hosted by *Hoʻola Lāhui Hawaiʻi Native Hawaiian Health Care System*. More than 50 traditional practitioners participated. Recommendations from the ʻAha are: The Native Hawaiian community needs to exert and protect its intellectual property rights as they relate to traditional healing practices;

(i) There is an on-going need for *ʻaha* focusing on traditional healing practices. POL will be asked to prepare a timeline to reconvene another *ʻaha*.
(ii) The Native Hawaiian Health Care Systems (NHHCSs) need to be encouraged to take on the kuleana of developing "kauhale" systems for Native Hawaiian practitioners; and
(iii) The concept of a strategic plan for implementation is supported.

August 9, 2006: The organization *Kupuna Laau Lapaau o Hawaii* is reinstated under Poʻokela Aunty Marie Place.

August 9, 2006: The organization *E Ola Mau* is reinvigorated under President Loretta Hussey with its mission "to promote traditional Native Hawaiian concepts of health…"

**2007**

August 9-10, 2007: A gathering of traditional practitioners is hosted by *Kupuna Laau Lapaau o Hawaii* and *E Ola Mau* at Puʻu o Hoku Ranch on the island of Molokaʻi. More than 20 practitioners participated in the conference.

October 10, 2007: *Ke Ola Mamo Native Hawaiian Health Care System, Oʻahu,* petitions *POL* for recognition of its Kupuna Council, Nā Lei Hulu No Ke Ola Mamo, in compliance with Act 304/153. POL grants recognition.

October 29, 2007 : *Hoʻola Lāhui Hawaiʻi Native Hawaiian Health Center System, Kauaʻi,* petitions *POL* for recognition of its Kupuna Council in compliance with Act 304/153. POL grants recognition.

**2008**

September 10, 2008: *Hoʻola Lāhui Hawaiʻi Native Hawaiian Health Care System, Kauaʻi,* petitions *POL* for recognition of its Kupuna Council in compliance with Act 304/153. POL grants recognition.

**2009**

October 3, 2009: Master hoʻoponopono practitioner Aunty Malia Craver of Oʻahu ua hala.

November 9, 2009: *POL* Board adopts the following criteria for kupuna councils requesting recognition:

1. At least three Hawaiian persons who are deemed by the Papa Ola Lōkahi or a kupuna council to be proficient of traditional Native Hawaiian healing methods. See Section 453-2(c)
2. The traditional healing practices of the members of the kupuna council and practitioners under the kupuna council's oversight (such as lā'au lapa'au, lā'au kāhea, lomilomi, ho'oponopono and similar (practices) shall be provided to Papa Ola Lōkahi on an ongoing basis.
3. Standards of care (developed by the kupuna council)
4. An annual review process to address relevant factors (such as numbers served, number of practitioners, referrals, complaints, successes etc.) An Annual Report must be provided by November 1 of each year.
5. A memorandum or letter of understanding with the Native Hawaiian Health Care System on the kupuna council's moku to address the proficiency of the practitioners.
6. Evidence of liability coverage.
7. Pursuant to section 453-2 (c) (4), the development of the kupuna council's policies, procedures and the rules necessary or appropriate to certify traditional Hawaiian healers.

December 28, 2009: Master lomilomi practitioner Aunty Margaret Machado of Hawai'i ua hala.

**2010**

*Ko'olauloa Community Health & Wellness Center, O'ahu* petitions *POL* for recognition of its Kupuna Council in compliance with Act 304/153. POL grants recognition.

**2015**

November 16, 2015: Master lā'au kāhea practitioner Aunty Agnes "Aggie" Kalaniho'okaha Cope of O'ahu ua hala.

*** * * * ***

*Papa Ola Lōkahi wishes to thank all who helped put this brief chronology together. Without their generous sharing, this chronology would not have been possible. Other gatherings have occurred throughout the years and continue today but this effort is an attempt to list those major ones which have focused on certification and licensure.*

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# Chapter Two:
# *Mental and Behavioral Health and Wellness*

# Mental and Behavioral Health and Wellness

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Isabella Ahrens, Kalei Chandler-Ahsing, Melissa Hamada, Kauanoe Kamanā
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Kealoha Fox, Palama Lee, Jane Kaʻala Pang, William Rezentes

**Executive Summary**

***Increased Understanding***

There has been a tremendous amount of research over the last 30 years with nearly **20,000** scholarly publications and reports related to Native Hawaiian mental or behavioral health.

- The volume of publications increased with the disaggregation of Native Hawaiians from other Pacific Islanders and Asians, expanding our understanding of the scope of the issues as well as risk and protective factors.
- With few exceptions, Native Hawaiians manifest greater mental health challenges than do non-Hawaiians.
- Native Hawaiians are dealing with multiple stressors and external factors that impact their overall health, including individual and social challenges, perceived racism, oppression and social injustice.
- Native Hawaiian cultural activities can promote healthy lifestyles and decrease stress. More than three-quarters of Native Hawaiians believe it is important to live and practice Hawaiian culture on a daily basis.
- Despite the challenges that Native Hawaiians face, there are clear protective and resiliency factors, including a strong sense of hope, and positive ʻohana[1] and community support.

***Effective and Promising Approaches***

*The primary value of our community is service. A community is not a community if nobody's giving of themselves. The value of family and togetherness only comes to light when people give unconditionally. The giving of oneself, which we loosely translate as Aloha, is at the heart of every thriving community.*

C. Kimo Alameda, PhD
Clinical Psychologist
Hawaiʻi Island

Dr. Alameda, a Native Hawaiian clinical psychologist who has played a major role in public mental health services that incorporate Native Hawaiian cultural traditions and practices, succinctly captures the thematic focus of community engagement defined within the matrix of aloha (i.e., a core Native Hawaiian value and practice of empathic caring and compassion) which runs through the promising approaches, described below, that are effectively addressing mental and behavioral health disparities.

- Commonalities among wellness, substance abuse treatment, and mental health treatment programs for Native Hawaiians that have been shown to be effective include strengths, community, indigenous, and culturally informed approaches.
- Most of these programs provide a balance between Western best practices and cultural teachings and activities. There is a need to experience a sense of belonging and sense of place. Integration of Native Hawaiian traditional approaches and practices is essential for developing paths for healing.
- Programs have increased capacity to address the growing mental and behavioral health care needs of rural Hawaiʻi through training and clinical service, integrating cultural and community-based perspectives.

[1] family

❖ These programs, designed to optimize Native Hawaiian mental and behavioral health, are frequently initiated and led by Native Hawaiians as key stakeholders. While the focus of many of these programs is on Native Hawaiians, the individuals they serve are multicultural.

***Gaps***

Progress made within mental and behavioral health services and initiatives has helped clinicians and researchers identify important gaps. In the bulleted paragraphs below, we describe those that must be addressed to accelerate our understanding and further refine our assessments and interventions.

❖ Data on Native Hawaiian mental and behavioral health and well-being status are challenging to find and not consistently or regularly collected and reported. Indigenous data governance can assert Native Hawaiian data rights and interests; ensure that data for and about Native Hawaiians are protected; and require quality and integrity of Native Hawaiian data and their collection.

❖ Disparities are magnified by limitation in access and availability of services, particularly in rural, primarily Native Hawaiian communities.

❖ While some programs have been found to be successful at improving well-being, most culturally based and adapted mental health interventions for Native Hawaiians have not been formally evaluated.

❖ A connection between historically traumatic events (physical, emotional, social, and spiritual genocide) and contemporary stressors has been posited to impact physical and emotional well-being but has not been well-studied among Native Hawaiians.

❖ While primary care integration and co-occurring disorder treatment have made significant advances, there remains a lack of a wholistic[2] approach to well-being.

❖ Few studies focus on Native Hawaiians across the lifespan. There is limited information on keiki[3] and kūpuna.[4] Research needs to examine developmental trajectories of Native Hawaiian mental health, which would provide essential information on the mental health needs across the Hawaiian lifespan. Treatment also needs to span multiple generations.

❖ Systems of care remain in silos, resulting in fractured and inadequate coordination.

***Recommendations for Impact***

- ❖ **Promulgate Effective Community Engagement Programs**
  - ❖ Programs that promote community engagement improve reintegration and social networking.
  - ❖ When programs can engage families instead of individuals, programs are more effective and can improve mental health status for more than just one individual.
  - ❖ Communities want to help shape the direction and focus of efforts through collaborations.
- ❖ **Expand Effective Culturally Based and Culturally Adapted Prevention and Treatment Interventions**
  - ❖ There is a need for programs using cultural and wholistic approaches designed to foster healthy Native Hawaiian mental health and behaviors and that prevent mental health challenges before they occur.
  - ❖ Such interventions bridge the gaps that Native Hawaiians may experience between their behavior and their values.
- ❖ **Decrease Stigma and Ensure Access to Services**
  - ❖ The stigma of mental illness adversely impacts all levels of well-being, including prevention, help-seeking, access, recovery and resilience.
  - ❖ A responsive system of care will improve access to mental health treatment and will eliminate health disparities for Native Hawaiians, their families, and communities.
  - ❖ An effective behavioral health system must be capable of providing an array of prevention and treatment options in multiple settings, including services that are culturally responsive and that contribute to and support improvement of treatment outcomes.

[2] The term wholistic is used intentionally to refer to the whole person. Locally many see negative connotations with the term hole-istic, suggesting this approach is not superior.

[3] young children

[4] elders

- **Increase Workforce Development and Training for Behavioral Health Providers**
  - Shortages of mental health providers disproportionately impact residents from neighbor islands and other rural communities.
  - Treatment for Native Hawaiians can have lasting effects if the provider uses treatments or skills that are relevant to the beliefs and values of the person being treated.
  - Native Hawaiian practitioners, mental health care providers, community health workers, and educators have direct linkages to appropriate resources that make them essential wellness navigators for the Native Hawaiian community.
- **Enhance Funding and Resources for Mental Health**
  - Native Hawaiian community-engaged and culturally based programs led by well-trained providers require funding.
  - More funding and resources in health, education, justice, and other systems are needed for sustainable effects.
- **Incorporate a Systems Approach that Utilizes the Socioecological Model and Focuses on Long-Term Sustainability**
  - The socioecological model considers the complexity of well-being and mental health, including interdisciplinary factors at various levels: individual, family, social, community, and societal.
  - Effective leadership will be crucial to develop, implement, and evaluate efforts and plans that address mental and behavioral health from a system's and sustainability approach.

## Introduction

### *E Ola Mau* Revisited

The *E Ola Mau Health Needs Study* (Native Hawaiian Health Research Consortium, 1985a, 1985b) was the first study that documented the scope of mental health needs among Native Hawaiians. Based on clinical populations, the study showed that among Hawaii's major ethnic groups, Kānaka[5] had higher rates of alcohol and substance abuse, depression, suicide, physical abuse and neglect, incarceration, and disruptive disorders. Further, the *E Ola Mau* study reported that Native Hawaiians were underrepresented in mental health professions and there were no senior researchers of Native Hawaiian ancestry. Major recommendations of the report included increasing the numbers of Native Hawaiians in mental health professions, training Native Hawaiian mental health researchers, conducting research on mental disorders among Native Hawaiians, and designing prevention and intervention strategies which addressed the unique cultural needs of Native Hawaiians.

*My whole focus was to do clinical work, teaching, and research for Native Hawaiian health...I was one of the researchers for the* E Ola Mau *report. I started working on it when I was still a resident [physician in training] under Dr. Kekuni Blaisdell. That was considered the whole plan and path for my professional career in terms of Native Hawaiian mental health because, at the time, there was really no epidemiologic map to tell us what was going on for Hawaiians…so I initiated [that] as part of my research. It took a while because no one had been doing that kind of research [in Native Hawaiian communities]…If you look back at the recommendations, we've made some significant progress in particular areas. But there are still some major gap areas where the recommendations are either forgotten or not fully implemented. We need to go back on the second go-a-round and get those implemented. The new* E Ola Mau a Mau *report update shows where it works, and where it didn't work. I think it brought tremendous awareness. It gave Hawaiian activists, in particular, factual evidence to make an appeal, which became a demand, about the rights of our people as indigenous people…I think Queen Emma and King Kamehameha IV [founders of The Queen's Hospital] knew that, and that was their legacy–to ensure that the health of their nation would be restored. I see the necessity to keep that going and to be mindful about how we have to do it.*

Naleen N. Andrade, MD
Professor, Department of Psychiatry
Director, Native Hawaiian & Pacific Peoples
Behavioral Health Research Programs
University of Hawai`i at Manoa
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[5] Native Hawaiians

❖ ***E Ola Mau a Mau***

As of July 2015, approximately 26% of the population in Hawai‘i self-identified as at least part Native Hawaiian or other Pacific Islander, which equates to approximately 363,000 people in the state of Hawai‘i (Department of Business, Economic Development & Tourism, 2015). This group of people, indigenous to the islands of Hawai‘i as "evidenced by genealogical records, kupuna (elder) or kama‘aina (resident) verification, certified birth certificates" (42 U.S.C. 11711), and/or self-identification on census reports, makes up the largest Pacific Islander population, accounting for 35% of all Pacific Islanders (Ta & Chen, 2008). Not only do Native Hawaiians make up the largest Pacific Islander population, "they are also the fastest growing racial and ethnic group in Hawai‘i" (p. 411). A major hindrance to research on Native Hawaiians and other Pacific Islanders is their underrepresentation in studies conducted in the United States. Within the United States, Native Hawaiians and Pacific Islanders make up the smallest ethnic group listed on the census in the United States, constituting only 0.2% of the population when counted alone, or 0.4% when including those of mixed race who are at least part Native Hawaiian or other Pacific Islander (U.S. Department of Commerce, 2015). With such a small percentage, Native Hawaiians are often underrepresented in research, and if they are included, they are usually part of an aggregate with the significantly larger Asian American population, which essentially masks the subgroup differences of the Native Hawaiians, especially in terms of health disparities. This was exemplified by approximately 20% of Native Hawaiians diagnosed with a depressive disorder compared to only 3.8% of Asian Americans (Cook, Chung, Ve'e, & Sousa, 2010). However, over half of the people who identify as being Native Hawaiian also reported belonging to at least another race, with European American and Asian being the most common (Hixson, Hepler, & Ouk Kim, 2012). As the population becomes more and more diverse, it is essential to understand how the changes affect mental health behaviors. While the numbers indicate an enduring and increasing presence of the Native Hawaiian people, it is obvious through critical exploration and review of scholarly literature that the Native Hawaiian perspective and participation in research, as well as culturally relevant forms of treatment, are still vastly underrepresented and undervalued.

This chapter describes the epidemiological profile of mental and behavioral health among Native Hawaiians that by necessity remains a continual work in progress; and the need for Native Hawaiian communities to understand sociocultural determinants of mental and behavioral health to develop culturally aligned interventions. During the past 15 years, new research methodologies have directed efforts toward social-cultural determinants and the development of culturally congruent mental health programs through community-engaged research—the vast majority of which has been by and with Native Hawaiian direction. Communities and researchers have worked together to eliminate mental health disparities and improve well-being in ways that are both culturally and scientifically sound. In this chapter, gaps are identified and potential solutions are proposed. The recommendations also highlight work that needs to continue. Key informant interviews, ‘ōlelo no‘eau,[6] and mele[7] are shared to capture the essence of the topic areas and island communities. It is our hope that this review will help chart the direction for the next generation as they strive to increase understanding, eliminate disparities, and improve the well-being of Native Hawaiians.

**Increased Understanding**

Since the 1985 *E Ola Mau – Mental Health Task Force Report* (Native Hawaiian Health Research Consortium, 1985b), there has been a substantial increase in our understanding of Native Hawaiian mental and behavioral health, including prevalence, risk and resilience factors, promising approaches, and recommendations.

❖ **The volume of publications has increased with the disaggregation of Native Hawaiians from other Pacific Islanders and Asians, expanding our understanding of the scope of the issues as well as risk and protective factors.**

The 1985 *E Ola Mau – Mental Health Task Force Report* compiled a remarkable reference list of 133 resources that were utilized by the Task Force members in formulating conclusions and recommendations, including sources that were not readily available publicly. Since then, there has been a tremendous amount of research and literature published on Native Hawaiian mental and behavioral health. For example, searches in July 2017 of three national databases found the following: (1)

[6] ancestral sayings
[7] song lyrics, chants, and poetry

PsycINFO:[8] > 420 references; database by the American Psychological Association, focused on the social sciences; (2) PubMed:[8] > 19,000 references; database by the U.S. National Library of Medicine of the National Institutes of Health, focused on medicine and health; and (3) Google Scholar:[9] > 77,000 references; database by Google, with a broader focus including non-peer-reviewed publications.

Given the sheer volume of the literature, the present review attempted to highlight the original source of the most recent, disaggregated, larger-scale, community-based epidemiologic studies, with greater emphasis on mental health diagnoses (versus symptomatology) and objective behavioral measures (e.g., arrest & incarceration), although self-reports were included where relevant (e.g., perceived social support). In addition, the focus was on results that disaggregated Native Hawaiians from other Pacific Islanders and American Asians, which excluded many large-scale studies. However, when results could not be found specifically for Native Hawaiians, aggregated findings were reported to shed some light on possible disparities (e.g., between Native Hawaiians combined with other Pacific Islanders as compared to other major ethnic groups).

❖ **With few exceptions, Native Hawaiians manifest greater mental health challenges than do non-Native Hawaiians.**

In comparison to statewide population estimates, the 1985 *Mental Health Task Force Report* concluded that Native Hawaiians had:

1. Higher proportions of social problems with family, people, and children, including higher proportions of assaultive acts and antisocial behavior;
2. Higher proportions of alcohol and narcotics use;
3. Higher proportions of school performance impairment;
4. Higher rates of suicide among young adult and elderly males;
5. Higher rates of child abuse and neglect (second only to Samoan populations);
6. Higher rates of residence in correctional institutions;
7. Higher rates of academic failure and poor school performance; and
8. Higher levels of stress as indexed by leading stress markers including poverty, educational level, single family households, dwelling density, and so forth.

The findings of the past 30 years have generally been consistent with the mental-behavioral health disparity revealed by the 1985 *Mental Health Task Force Report*. As a broad indicator of mental health, Native Hawaiian adults in Hawai‘i self-reported a higher average number of days within the past 30 days when their mental health was not good (4.2 days compared to 2.9 days statewide) (2015 Behavioral Risk Factor Surveillance System [BRFSS]; Nguyen & Salvail, 2015).

Table 1 provides results from epidemiologic studies on overall mental-behavioral health issues (i.e., “any”) and more specific areas (i.e., anxiety, mood/depression, suicide attempts/deaths, & substance use) for Native Hawaiians compared to non-Hawaiians, European Americans, Asian Americans, or statewide. Overall, Native Hawaiians have higher rates of these measures. The exceptions are as follows:

(1) There were similar rates for overall mental health problems and anxiety for Native Hawaiian adults compared to statewide. However, only 29.0% of the Native Hawaiians received treatment compared to 64.2% of European Americans (Reyes-Salvail, Liang, & Gross, 2009). The results for substance use treatment are different. In Fiscal Year 2015-2016, the Hawai‘i State Department of Health’s Alcohol and Drug Abuse Division (ADAD) provided treatment services to 2,830 adults and 1,885 adolescents (Alcohol and Drug Abuse Division, 2016). Native Hawaiians were the largest ethnic group admitted for ADAD-funded services, composing 43.8% of adult admissions and 46.0% of adolescent admissions. The primary types of substance use involved in these admissions were methamphetamine (50.5%) and alcohol (22.2%) for adults, and marijuana (66.8%) and alcohol (21.5%) for adolescents.

(2) Suicide death rates were lower for Native Hawaiians compared to European Americans from about 45 years of age and older (Hawai‘i State Department of Health, 2012). Native Hawaiians had a

[8] Hawaiian* AND mental OR “behavioral health” OR psychiatr* OR psycho* self-concept OR self-esteem OR well-being OR wellbeing OR violen* OR suicid* OR substance OR marijuana OR cannabis OR alcohol* OR cocaine OR amphetamine OR schizo* OR mood OR depress* OR bipolar OR anxi* OR phobi* OR stress OR distress OR PTSD OR obsessi* OR somat* OR eating OR bulimi* OR anorexi* OR impulse OR attention-deficit OR hyperact* OR “conduct disorder” OR “oppositional defiant disorder” OR “adjustment disorder” OR personality OR autis* OR Asperger* OR dementia OR Alzheimer*; where * represented different variations of the root word

[9] Hawaiian AND mental OR psycholog OR psychiatr; where * represented different variations of the root word

higher rate per 100,000 (46.2) as compared to Chinese Americans (8.0), Filipino Americans (22.8), and Japanese Americans (34.9) in Hawai‘i (2007-2011; Hawai‘i State Department of Health, 2012). However, European Americans had the highest rate (57.2). In addition, the suicide death rates by ethnic group were very different dependent upon age. For example, Native Hawaiian rates per 100,000 were highest for 15-24 year olds (70) and 25-44 year olds (81) compared to 45-64 year olds (55) and 65+ year olds (46). In contrast, European Americans' highest rates were for the two older age ranges; their rates were 41, 51, 104, and 89 for the different age ranges in ascending order (Hawai‘i State Department of Health, 2012).

(3) No studies were found on overall mental health problems or anxiety for elders.

Table 1
*Mental-Behavioral Health Disparities for Native Hawaiians*

| **Behavioral Health Area** | **‘Opio (Youth)** | **Mākua (Adults)** | **Kūpuna (Elders)** |
|---|---|---|---|
| Any | 32.7%[a] (current) | 14.1%[e] (current) | Unknown |
| | *(1.4 times higher)* | *(similar)* | |
| Anxiety | 20.8%[a] (current) | 8.3%[f] (lifetime) | Unknown |
| | *(1.7 times higher)* | *(similar)* | |
| Mood/Depression | 10.0%[a] (current) | 14.6%[g] (lifetime)<br>4.5%[f] (current) | 5%[l] (down-hearted) |
| | *(1.4 times higher)* | *(1.3 times higher)*<br>*(1.4 times higher)* | *(1.3 times higher)* |
| Suicide Attempts or Suicide Deaths | 14.1%[b] (attempt)<br>70/100,000[c] (death) | Prevalence not reported[h] (attempt)<br>81/100,000[i] (death)<br>55/100,000[j] (death) | 28/100,000[m] (death) |
| | *(1.3 times higher)*<br>*(1.7 times higher)* | *(2.8 odds ratio)*<br>*(1.6 times higher)*<br>*(1.9 times lower)* | *(3.2 times lower)* |
| Substance Use | 12.4%[a] (current)<br>19.2%[d] (binge) | 27.1%[k] (binge) | 8.9%[n] (binge) |
| | *(1.4 times higher)*<br>*(1.4 times higher)* | *(1.4 times higher)* | *(1.3 times higher)* |

Note: Below the prevalences are the respective comparisons (e.g., 1.7 times higher) to other non-Hawaiian or statewide rates.

[a]Compared to non-Hawaiians in Hawai‘i (any = 23.7%, anxiety = 12.4%, mood = 7.4%, substance abuse or dependency = 8.8%); based on 1992-1996 Diagnostic Interview Schedule for Children (Version 2.3) and Diagnostic and Statistical Manual III-R criteria (American Psychiatric Association, 1987) (Andrade et al., 2006)
[b]Compared to statewide (10.5%); based on past 12 months, 2015 Youth Risk Behavior Survey (YRBS) (Hawai‘i Health Data Warehouse, 2016)
[c]Compared to European Americans (suicide deaths per 100,000 = 41); based on 15-24 year olds (Hawai‘i State Department of Health, 2012)
[d]Compared to statewide (binge drinking of 5 or more drinks within a couple of hours = 13.4%); based on, “During the past 30 days, what is the largest number of alcoholic drinks you had in a row, that is, within a couple of hours?”, 2015 YRBS (Office of Hawaiian Affairs, 2017)
[e]Compared to statewide (13.9%); based on frequent mental distress, serious psychological distress, and/or mental health treatment; 2007 Behavioral Risk Factor Surveillance System (BRFSS) (for scoring algorithm, see Reyes-Salvail, Liang, & Gross, 2009);
[f]Compared to statewide (lifetime anxiety = 8.0%, current major depression = 3.3%); based on lifetime anxiety = “Has a doctor or other healthcare provider EVER told you that you had an anxiety disorder (including acute stress disorder, anxiety, generalized anxiety disorder, obsessive-compulsive disorder, panic disorder, phobia, posttraumatic stress disorder, or social anxiety disorder)?”, 2006 BRFSS (Salvail & Smith, 2007); current major depression = for Patient Health Questionnaire, 8 questions (PHQ-8) (for scoring algorithm, see Salvail & Smith, 2007, pp. 19-20)
[g]Compared to statewide (lifetime depression = 11.6%); based on, “Has a doctor or other healthcare provider EVER told you that you have a depressive disorder (including depression, major depression, dysthymia, or minor depression)?”, 2015 BRFSS (Nguyen & Salvail, 2015)
[h]Compared to Chinese Americans in Hawai‘i; based on past 12 months, 2006-2011 (excluding 2008) BRFSS; odds ratio comparing Chinese Americans with Japanese Americans was 0.8, and Chinese Americans with Filipino Americans was 1.1 (Baker, 2013)
[i]Compared to European Americans (suicide deaths per 100,000 = 51); based on 25-44 year olds (Hawai‘i State Department of Health, 2012)
[j]Compared to European Americans (suicide deaths per 100,000 = 104); based on 45-64 year olds (Hawai‘i State Department of Health, 2012)
[k]Compared to statewide (binge drinking = 18.9%); based on past 30 days of men having 5 or more drinks on one occasion, or women having 4 or more drinks on one occasion, 2015 BRFSS (Nguyen & Salvail, 2015)
[l]Compared to statewide (4%); based on “percent feeling down-hearted & blue all, most, or a good bit of the time,” age 60+ years, 2005 BRFSS (Braun, Mokuau, & Browne, 2010).
[m]Compared to European Americans (suicide deaths per 100,000 = 89); based on 65/+ year olds (Hawai‘i State Department of Health, 2012)
[n]Compared to statewide (7.0%); based on “percent at risk of binge drinking (4-5+ drinks at once),” age 60+ years, 2005-2007 BRFSS (Braun, Mokuau, & Browne, 2010).

- **Native Hawaiians are dealing with multiple stressors and external factors that impact their overall health, including individual and social challenges, perceived racism, oppression, and social injustice.**

The World Health Organization (2014a) defines mental health as “a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community.” Unfortunately, disparities in multigenerational trauma, discrimination, and poverty, and inequities in housing, education, the environment, health care access, and social capital disproportionately predispose Native Hawaiians to mental health issues (Liu & Alameda, 2011). In a national study of adults, 5.9% of Native Hawaiians who indicated that they were of a single ethnicity, and 4.5% of Native Hawaiians who indicated that that they were of multiple ethnicities, reported that they experienced serious psychological stress during the past 30 days compared to only 3.1% of the U.S. adult population (Galinsky, Zelaya, Simile, & Barnes, 2017). In another study, 8.9% of Native Hawaiians reported being very or extremely dissatisfied with life in comparison to 6.5% of non-Hawaiians (2011 Hawaiian Community Well-Being Survey; Kamehameha Schools, 2014).

Disparities affecting the Native Hawaiian community lead to marginalization from the larger community and can exacerbate social stressors (Kaholokula, Nacapoy, & Dang, 2009). For example, a decrease in social capital was correlated with an increase in depression and a decrease in social support. Further leading to the marginalization of Native Hawaiians are persistent derogatory stereotypes, such as those portraying Native Hawaiians as lazy, uneducated, irresponsible, and violent. Internalization of these perceptions prevents individuals within the community from improving their social status and further aggravates inequities (Kaholokula, Nacapoy, & Dang, 2009). Native Hawaiian adults who had higher levels of perceived discrimination had higher depressive symptoms ($r = .32$, $p < .001$; Antonio et al., 2016). In addition, Native Hawaiian adults who had higher Hawaiian Culture Identity also reported higher levels of perceived racism (i.e., oppression, $r = .35$, $p$

< .001, Kaholokula, Iwane, & Nacapoy, 2010; "felt oppression," $r = .21$, $p < .05$; Kaholokula et al., 2012). When examining the associations with physiological measures, oppression was found to be positively associated with hypertension (Kaholokula, Iwane, & Nacapoy, 2010), and Kaholokula et al. concluded, "Racism appears to be a chronic stressor that can 'get under the skin' of Native Hawaiians by affecting their physical health and risk for stress-related diseases, possibly through mechanisms of cortisol dysregulation" (2012, p. 27).

Mental illness can take a significant toll on the economy and an individual's potential earnings. The World Health Organization (WHO) estimates that mental illness is the leading factor in disability-adjusted life years worldwide (Insel, 2011). Mental illness accounts for 37% of healthy life years lost from non-communicable diseases; depression accounts for one third of this figure. The global costs of mental illness are approximately $2.5 trillion, which is only two-thirds of the indirect costs (Insel, 2011). In the United States, mental illness accounts for approximately 59% of economic costs deriving from injury or illness-related loss of productivity (World Health Organization, 2003). On average, individuals with psychosis took 42 days off from work per year and persons with two or more neurotic disorders took an average of 28 days off per year compared to 8 days off for those with one neurotic disorder. Furthermore, mental illness decreases annual income by $3500 to $6000 per individual per year (World Health Organization, 2003). Mental illness poses a serious and significant burden to the individual and society. Interventions that target marginalizing disparities are vital in preventing exacerbation of initial inequities and reducing the economic and social impacts of mental illness.

For Native Hawaiians, there has been improvement over the past decade or so in some socioeconomic indicators related to education (e.g., preschool enrollment, reading and math proficiency from kindergarten through high school), poverty, child abuse and neglect, public assistance use, income, attainment of professional and managerial occupations, and homeownership, in comparison to past years and other ethnic groups (Kamehameha Schools, 2014). 43.2% of Native Hawaiian adults report that things have gotten better over the past five years, compared to 36.0% for non-Hawaiians (2011 Hawaiian Community Well-Being Survey; Kamehameha Schools, 2014).

Despite these gains, many socioeconomic areas remain concerns for Native Hawaiians, particularly special education, high school graduation, college enrollment and achievement, livable wages, employment, support for families with children, violence prevention, and stable housing (Kamehameha Schools, 2014). In the case of special education during the 1997-1998 school year, Native Hawaiian students from kindergarten through high school were found to be overrepresented in all of the major special education categories (Andrade & Hishinuma, 2000). In the case of homelessness in Hawai‘i from 2006 to 2013, there was an increase of 55.8% in homeless shelter use for Native Hawaiians, which was comparable to non-Hawaiians at 54.4% (for analysis, see Kamehameha Schools, 2014). In 2015, Native Hawaiians constituted 30.5% of clients receiving services for the homeless in Hawai‘i, which was the highest among the major ethnic groups (29.3% European American, 9.1% Micronesian, 5.9% Marshallese, 5.5% Other Pacific Islander, 5.5% Filipino, 5.5% African American, 4.5% Other Asian, 1.8% Native American, 2.5% unknown) (Yuan, Vo, Gleason, & Azuma, 2016). Services for the homeless included emergency shelter, transitional shelter, outreach, and rapid rehousing services.

Native Hawaiian youth and adults have been overrepresented in Hawai‘i's justice system. Based on Hawai‘i juvenile arrests from 2000-2010, "Native Hawaiian youth are the most overrepresented group relative to their proportion of the youth population and face disproportionately negative outcomes at the greatest number of decision points compared to other ethnic groups" (Umemoto, Spencer, Miao, & Momen, 2012, p. 7). Native Hawaiian minors (0-17 years of age) constitute approximately 31.1% of Hawai‘i's minor population (U.S. Census Bureau, 2000a, 2000b). Of the individual youth arrested, 33% were of Native Hawaiian ancestry, and of all arrests (including more than one arrest of the same adolescent), 42% were of youth with Native Hawaiian ancestry. "As the cases progress deeper into the system, the proportion of Native Hawaiian involvement incrementally increases to 46% of the cases referred to Family Court, 49% of the cases petitioned to appear in court and subsequently adjudicated, then 50% of the cases sentenced to probation placement without incarceration and 54% of the cases sentenced to incarceration" (p. 29), replicating previous studies (e.g., Kassebaum et al., 1995a, 1995b; MacDonald, 2003). While the overall census at the Hawai‘i Youth Correctional Facility has decreased substantially, 69% of the adolescents there were of Native Hawaiian ancestry in 2015 (Office of Youth Services; cited in Office of Hawaiian Affairs, 2017).

For Native Hawaiian adults, who represent approximately 24% of Hawai‘i's population, decreases in arrest rates have been found from 2003 to 2009 (Kamehameha Schools, 2014). However, as with Native Hawaiian youth, there is increasing overrepresentation of Native Hawaiian adults as the

cases progress deeper into the justice system: 25% arrest, 33% pretrial detention, 29% admissions to probation, 36% admissions to incarceration, 39% incarcerated, 39% release on parole, and 41% parole revocation (Office of Hawaiian Affairs, 2010; see also, for a brief review, Kamehameha Schools, 2014).

- **Native Hawaiian cultural activities promote healthy lifestyles and decrease stress. More than three-quarters of Native Hawaiians believe it is important to live and practice Hawaiian culture on a daily basis.**

Multiple studies have linked stress to negative health outcomes and poor well-being for various ethnocultural groups, including Native Hawaiians (Hébert et al., 2015). In response, underserved communities are working with researchers to develop solutions and strategies to attain solutions with an emphasis on cultural activities. Health promotions grounded in evidence-based strategies, and tailored to Native Hawaiian cultural preferences as well as socio-economic circumstances, have been recommended to improve lifestyle and increase selection of healthy choices (Kaʻopua, Braun, Browne, Mokuau, & Park, 2011). Well-being is synonymous with the perpetuation of cultural traditions and activities (McGregor, Morelli, Matsuoka, & Minerbi, 2003). For example, ancestral knowledge of the land and its natural resources is often shared through subsistence practices in rural Native Hawaiian communities. Inherent in the practice is conservation to ensure availability for future generations. Cultural values, beliefs, norms, and ways of life guide thinking, decisions, and actions of individuals and families in patterned ways (Leininger & McFarland, 2006). 78.0% of Native Hawaiian adults believe it is fairly or very important to live and practice Hawaiian culture on a daily basis (e.g., honoring ʻohana,[10] working together, and sharing food, crafts, and knowledge with others) (2004 Hawaiian Community Survey; Kanaʻiaupuni, Malone, & Ishibashi, 2005). Furthermore, they expressed interest in developing their knowledge of the Hawaiian language.

- **Despite the challenges that Native Hawaiians face, there are clear protective and resiliency factors, including a strong sense of hope, and positive ʻohana and community support.**

There has been greater awareness and effort to assess protective factors and to foster a strength-based approach to prevention and intervention (e.g., Kamehameha Schools, 2014). Despite the challenges that Native Hawaiians have faced, they have a strong sense of hope for the future. In particular, 60.8% of Native Hawaiian adults reported the belief that things will get better over the next five years, compared to 47.8% of non-Hawaiians (2011 Hawaiian Community Well-Being Survey, Kamehameha Schools, 2014).

Regarding family structure, Native Hawaiians lived in family households (91.9%) more than the Hawaiʻi average (86.4%). Native Hawaiians also had the highest percentage of households where grandparents lived with and cared for their young grandchildren (10.7%) and school-age grandchildren (9.7%) compared to the Hawaiʻi averages (6.9% and 5.7%, respectively) (2006-2010 American Community Survey Public Use Microdata, Kamehameha Schools, 2014).

Regarding family support, Carlton et al. (2006) found that Native Hawaiians had higher levels of family support than non-Hawaiians in Hawaiʻi based on adolescent self-reports. Family support included having a very close relationship with a number of family members, having a family member to go to when the adolescent was feeling down, and having the family provide moral and emotional support. In addition, importantly, family support was found to be a robust protective and resilience factor for both internalizing (e.g., anxiety, depressive) and externalizing (e.g., conduct disorder, substance use) symptoms. Similarly, 90.6% of Native Hawaiian adults reported that during difficult times, they rely on family for the majority of support, compared to 86.9% of non-Hawaiian adults (2011 Hawaiian Community Well-Being Survey, Kamehameha Schools, 2014). This is not surprising given that Native Hawaiian families also were more likely to have households with grandparents living with and caring for their grandchildren.

Regarding family and community support, 79.0% of Native Hawaiian high school students reported that they had at least one adult outside of school with whom they could talk about things that were important to them, and 72.4% reported that they had at least one teacher or adult in school with whom they could talk if they had a problem, compared to 76.5% and 64.3%, respectively for non-Hawaiian high school students (2015 Youth Risk Behavior Survey, Hawaiʻi Department of Health, cited by Kamehameha Schools, 2014). From a Hawaiian perspective, individual capabilities, such as healthy coping, practical knowledge, special talents, and persistence are rooted in family and community relationships (Kanaʻiaupuni, 2005). In response, there has been greater awareness and effort to assess protective factors and to foster a

[10] family

strength-based approach to prevention and intervention (e.g., Kamehameha Schools, 2014).

**Effective and Promising Approaches**

We use the term "promising approaches" to include evidence-based and evidence-informed approaches, as well as practice-based evidence approaches.

*While evidence-based practices give us numbers and evidence of success, practice-based evidence also has to be considered and supported. Healing practices that are multi-generational and culturally valued build community health. And the more we integrate a person's culture into treatment, the more effective treatment will be.*

Captain Jon Perez, PhD
Region 9 Administrator,
Substance Abuse and Mental Health Services Administration (SAMHSA)
(SAMHSA, 2016)

- **Commonalities among wellness, substance abuse treatment, and mental health treatment programs for Native Hawaiians that have been shown to be effective include a focus on strengths, community, and indigenous and culturally informed approaches.**

Selected programs underscore the importance of program commonalities, including a focus on strengths, community, and indigenous and culturally informed approaches. The following are several examples demonstrating effectiveness. Hui Mālama o ke Kai ("The Caring Group from the Ocean") is a culturally grounded Native Hawaiian program based on prevention, positive youth and family development, and respectful utilization of natural resources (i.e., mountain, land, ocean) (Akeo et al., 2008; Hishinuma et al., 2009). The mission of Hui Mālama o ke Kai, founded in 1998, is to develop community pride and foster leadership in youth living in Waimānalo. The core afterschool program for 5th and 6th graders provides activities that integrate the Native Hawaiian cultural values of connecting the youth to their family, land, community, and spirituality through experiential learning. Five core values central to the curriculum and activities are: aloha,[11] mālama,[12] ʻohana,[13] kuleana,[14] and mahalo[15] (Sy, 2009). There is also a strong family-bonding component that includes Hoʻoikaika i ka ʻOhana[16] (ʻOhana Strengthening Program [n.d.], http://www.huimalamaokekai.org/ohana-programming.html). This project provides parent sessions and trainings (e.g., on communication, positive discipline, problem-solving, health promotion) and family-based activities (e.g., monthly weekend activities, monthly ʻohana nights, retreats). The results of formal program evaluations of Hui Mālama o ke Kai have been very positive (Hishinuma et al., 2009; Takeshita & Takeshita, 2002, 2003). For example, positive pre-post increases were found for (1) youth self-reports on Native Hawaiian values, school success, self-esteem, anti-drug use, violence prevention strategies, healthy lifestyle, and family cohesion; and (2) parent self-reports on family cohesion, and children's knowledge and practice of Native Hawaiian values, school success, and violence prevention strategies (Hishinuma et al., 2009). The afterschool program expanded to include intermediate and high school students who "serve as alakaʻi[17] to their younger counterparts and have the opportunity to practice aloha ʻāina[18] by getting involved with community service projects, perpetuating a cycle of social responsibility and instilling confidence in themselves" (http://www.huimalamaokekai.org/after-school-programs.html).

The heuristic method remains the initial process by which Western-trained clinicians treat patients and assess response to treatment. Case study reports document treatment responses. When there is a pattern of successful treatment responses, effective evidence-based practice is demonstrated, and treatment protocols are documented. Empirical studies commonly follow to identify the factors that explain and predict treatment responses. Many mental health practitioners recognize the importance of culture and have begun to apply a heuristic approach to demonstrate the efficacy of cultural interventions. ʻImi ke Ola Mau[19] is a community collaboration formed in 2005 through the Co-occurring State Incentive Grant (COSIG). Partners communicated a common vision to ensure that Native Hawaiians, their families, and communities have access to substance abuse and mental health services that honor culturally responsive treatment (Papa Ola Lōkahi & ʻImi ke Ola Mau, 2007). Practitioners shared their experiences and the role of culture in healing. In order for Native Hawaiians to heal, "[They] need a sense of self,

[11] love, affection, compassion, mercy, sympathy
[12] to care for
[13] family
[14] responsibility
[15] gratitude, respect
[16] Strengthen the family.
[17] mentors, leaders
[18] love and care for the land
[19] to perpetuate a life of health and healing

retrieved from our past through ancestors, present through purpose, and future through descendants. [They] need our language, traditions, and ceremonies which provide ways to reconnect to our spirituality and to our concept of our Source. [They] need the resiliency and protection our culture provides, in order to prevent relapse and redefine ourselves away from pathological diagnoses" (Papa Ola Lōkahi & ʻImi ke Ola Mau, 2007).

*Hawaiian health is about Hawaiian culture.*

ʻImi ke Ola Mau

Another program demonstrating the heuristic effectiveness of Native Hawaiian culture is Ola Kino Maikaʻi (translated loosely as "good health and/or well-being"), within the Women's Way program at Salvation Army Family Treatment Services (Office of Hawaiian Affairs, 2017). This is the only program in the State of Hawaiʻi to serve women and their children in a residential substance abuse treatment setting (Gill, 2015; Kate Leilani Kahoano, personal communication, August 3, 2017; Office of Hawaiian Affairs, 2017). Participants engage in Native Hawaiian cultural practices, including a weekly culture class, lomilomi,[20] establishment of a mala,[21] papa hula,[22] huakaʻi[23] to culturally significant sites, mele,[24] ʻoli,[25] and moʻolelo.[26] By serving entire families rather than individuals, this program increases the likelihood of Native Hawaiian families "actively improving lifestyle choices by engaging in health programs and supportive family development." Most anecdotal reflections on the program indicate that it offers inspiration and maintenance of positive behavioral change around improving lifestyle choices. With the tools, support, and education provided by this program, women and their families gain the ability to select healthier or better-informed choices. Most reports of change experienced by clients since entering the program have revolved around increased active play with their children, greater knowledge about how to prepare healthy meals for their families, and improved self-esteem and self-worth in response to renewed health and healthy coping tools and practices.

The Hoʻopono Mamo Civil Citation Initiative, a juvenile justice diversion program, is designed to guide youth toward a pathway of supportive programs to help them address issues that may lead to risky or harmful behavior (Hoʻopono Mamo, 2013, 2017). Historically, once youth enter the juvenile justice system, many sink even deeper into the system. Hoʻopono Mamo provides immediate assessment and intervention services, and focuses on strengthening teens' connection to their families and community, including using cultural values. The original concept of the Hoʻopono Mamo diversion process consisted of four phases that guided youth in charting a pono[27] path. The process begins when a youth is arrested and issued a civil citation. Eligible youth are brought to a Family Assessment Center where they are informed of the program and invited to participate. A counselor and kupuna[28] will "talk story" with them to assess their situation, strengths, challenges, resources, and interests. The program focuses on six key dimensions: peers, family, community, school, spiritual values, and the youth's mind and body. Service providers then help the youth develop an action plan to address any issues that they may be confronted with. The youth's action plan may include a variety of pathways, including making an apology, the Wahi Kanaʻaho (healing arts and hoʻoponopono or conflict resolution), an 'āina[29]-based curriculum reconnecting to family and school, Hoʻala Conferencing Circles (facilitating dialogue with the youth's chosen network of support, including immediate family, extended family, and other members of their support system), mental health and substance abuse treatment programs (e.g., residential, outpatient, emergency shelters), and a variety of community-based programs (e.g., education, recreation, culture, meditation). Subsequent to program completion, there is a follow-up visit to the Family Assessment Center for a second "talk story" assessment, for an updated plan to be developed, if needed, and for feedback and evaluation. The goal is to offer youth the avenues to overcome challenges underlying their actions and to realize their own kuleana[30] as valuable and gifted members of their communities. As a result, not only are youth offenders' lives transformed, but also the lives of their entire families.

Although not all of the program components have been successfully implemented, positive evaluation results have been obtained overall (Miao, Umemoto, Hishinuma, & Smith, 2017). Randomly selected parents who consented to participate in a qualitative evaluation expressed that Hoʻopono Mamo helped provide them with different types of support that made

[20] traditional massage
[21] garden
[22] hula dance class
[23] excursions
[24] songs
[25] chants
[26] stories and history
[27] balanced, righteous
[28] elder
[29] land
[30] responsibility

a positive difference for themselves and their families in the following areas: coping and decision-making skills, understanding the social and legal consequences of their actions, accountability and resources to reach their goals, youth involvement in positive activities, parent self-reflection and parenting skills, and parent and child relationships. Quantitative evaluation found a lower rate of recidivism for Hoʻopono Mamo participants compared to a matched sample of non-participants, with a 7.7% lower re-arrest rate for participants. There was also a trend that when police transported the youth directly to the Assessment Center with "warm hand-offs," the positive difference for those cited for misdemeanors (with no prior offenses) was 3-4 times greater (i.e., 28.1% vs. 8.7%). Among Hoʻopono Mamo youth, those who received intervention services had a 12.2% lower re-arrest rate than those who did not receive intervention services (i.e., those who were only assessed at the Assessment Center, but did not receive intervention services). Those who completed the program had a 16.6% lower re-arrest rate. This positive effect was somewhat greater for those with first-time misdemeanors (with no prior offenses). Furthermore, the evaluation findings highlighted the importance of implementing all program components for Native Hawaiian youth with consistency and fidelity in order for the maximum benefit to be experienced.

For the Wahi Kanaʻaho[31] component mentioned above, positive qualitative and quantitative findings were obtained. Interviews of the youth revealed the following positive outcomes: learning about self and values as well as connecting to something greater than themselves (spirituality); rebuilding broken bonds with family; connection to staff; cultural basis, tools, and skills to make different choices; time and space away from problems and distractions; hands-on and outdoor activities (connecting with the ʻāina); and transition planning (Tibbetts, 2016). The quantitative survey assessed pre-post differences retrospectively and found gains with respect to the personal, family, friends, community, school, and body-mind/spirituality domains (unpublished results).

- **Most of these programs provide a balance between Western best practices and cultural teachings and activities. There is a need to experience a sense of belonging and sense of place. Integration of Native Hawaiian traditional approaches and practices is essential for developing paths for healing.**

Place is fundamental to Native Hawaiian ethnocultural identity. Place-based learning provides the learner with a rich history and stories of the land, reinforcing the connection between land and identity (Kanahele, 1986; Kanaʻiaupuni & Malone, 2006; Pukui, Haertig, & Lee, 1972; Ulukau, 2017). This accumulated knowledge is a source of spiritual strength and well-being. Conversely, ignorance of place weakens a person's identity (Kanahele, 1986). By learning the traditions of place and genealogy in connection with personal experiences, Native Hawaiians can internalize ethnocultural identity and ways of thinking (Andrade, 2006; Kekoa, 2017; Meyer, 2001). Therefore, restoring and preserving connections to the land, practices of caring for the sea, and maintaining historically significant places create space for traditional practices that foster spiritual well-being. Oneha (2001) further supports this concept that Native Hawaiian health, including mental health, is rooted in Native Hawaiian culture. She found that having a spiritual connection to one's ancestral place, and being able to relate to past, present, and future experiences with intention and understanding, resulted in openness to the flow and use of energy to create a sense of safe place or puʻuhonua. Ethnocultural identity is a central value in Native Hawaiian communities. Relationships with spiritual power inherent in every location, ancestral lineage, living family members, and obligations to the collective good of the community strengthen ethnocultural identity. This is illustrated by a simple question: In Native Hawaiian language, one asks, "Who is your name? (ʻO wai kou inoa)" and not "What is your name?" (Kawakami, Aton, Cram, Lai, & Porima, 2007), conveying a link to the past, but also to present-day ethnocultural identity. The intensity of feeling for place is imperative for health and well-being. "The mobilizing energy comes from the land itself, from the sea, from the children and from the compelling vision of a future in which indigenous Hawaiians are in our rightful place as a vibrant, thriving people" (Kanaʻiaupuni & Malone, 2006, p. 301).

Ma kēia ʻāina e pūlama mai i loko o kuʻu naʻau.

*The land which has nurtured me in its depths*
*fills my heart.*

"Mele ʻOhana"
Written by Damon Williams
Hawaiian translation by Charles Kaʻupu
Sung by Kealiʻi Reichel on album *Keʻalaokamaile*
Punahele Productions, 2003

The strategic plan for the improvement of substance abuse and mental health outcomes for

[31] healing arts

Native Hawaiians, their families, and communities identified several key components for Native Hawaiians to heal and recover (Papa Ola Lōkahi & ʻImi ke Ola Mau, 2007). Native Hawaiians need a sense of place to anchor values and balance life. Beyond Western practices, Native Hawaiians need to care for the ʻāina,[32] which they understand to deeply care for them. Native Hawaiians need the resiliency and protection that culture provides through language, traditions, and ceremonies, allowing ways to reconnect to ancestral knowledge and spirituality. Native Hawaiians need not become Western to heal. Native Hawaiian substance abuse treatment programs (e.g., Hoʻomau ke Ola on the Leeward Coast of Oʻahu) which weave Western best practices (e.g., cognitive behavioral therapy, 12-step programs, financial literacy, life skills) with traditional practices (e.g., hula,[33] moʻokūʻauhau,[34] ʻoli[35]), to reestablish cultural foundations and connectedness, reflect promising approaches to decrease substance use prevalence among Native Hawaiians (Hoʻomau ke Ola, 2017).

Table 2
*Parallel Strengths of Western and Native Hawaiian Healing Practices* (Blaisdell, 2007; Kaholokula, 2007)

| Western Healing Practices | Native Hawaiian Healing Practices |
|---|---|
| Focus on physical/psychological signs, symptoms, and causes | Focus on spiritual/interpersonal complaints and causes |
| Organic or psychological causal models | Causal models based on imbalance in relationships/life roles |
| Treatment involves medicine, cognitive restructuring, and lifestyle changes | Treatment involves prayers, herbs, and repairing relationships |
| Evidence-based | Faith-based |

*It is a given that many will find cultural aspects of a program healing, supportive, and meaningful—and that there is inherent value in these approaches…The challenge and the opportunity are to find ways to ensure that cultural services are afforded the same recognition and validity as "Western" services and interventions. What is needed is a harmonious and effective combination of approaches and interventions that provide a continuum of care that effectively meets diverse needs and resonates with people across the spectrum.*

Edward Mersereau
Division Chief, Hawaiʻi Alcohol and Drug Abuse
(SAMSHA, 2016, p. 1)

- **Programs have increased capacity to address the growing mental and behavioral health care needs of rural Hawaiʻi through training and clinical service, integrating cultural and community-based perspectives.**

In order to improve access to primary health care in rural, underserved areas, and promote collaboration in health care delivery, the U.S. Congress passed the Rural Health Care Services Act of 1977 (U.S. Department of Health and Human Services, 2017). Clinics are also authorized to serve as an originating site for telehealth services. Kīpuka o ke Ola is an example of interested parties coming together to create collaborative health care systems in rural areas (Kīpuka o ke Ola, 2017). Rooted in the medical home

[32] land
[33] dance
[34] genealogy
[35] chant

model, they provide a variety of medical services (primary care, psychiatric, psychotherapy, and pediatric), as well as indigenous healing services, such as laʻau lapaʻau,[36] lomi lomi,[37] and hoʻoponopono.[38]

*Access needs to be easier for Native Hawaiians to obtain mental health care and get the services that they need. We need to break down the barriers of stigma. Having more Native Hawaiian psychiatrists and psychologists helps…Clinics like Kīpuka o ke Ola that meld indigenous Hawaiian and Western medicine also help indigenous people and the whole community improve and progress.*

Ian Chun, MD
Director, Psychiatrist and Pediatrician
Kīpuka o ke Ola (Rural Health Clinic)

Another organization, I Ola Lāhui,[39] was created by emerging Native Hawaiian scholars with a mission to provide culturally minded, evidence-based behavioral health care that is responsive to the needs of underserved and predominantly Native Hawaiian rural communities (I Ola Lāhui, 2017). This rural behavioral health program offers integrated behavioral health services to help with a variety of concerns for individuals, couples, families, and groups to promote overall health and well-being, providing behavioral health care at many of the Native Hawaiian and community health centers. The program is also increasing the number of trained psychologists available to work with Native Hawaiian and rural communities. The program conducts research and evaluation projects for programs and services related to behavioral health and service delivery to rural and underserved communities, and culturally minded interventions developed and implemented by I Ola Lāhui staff and trainees, as well as through partnerships with other organizations. For example, three substance abuse and mental health treatments using traditional Hawaiian cultural practices were evaluated as part of the 2007 Hawaiʻi Co-occurring State Incentive Grant Project (COSIG; I Ola Lāhui, 2017). Native Hawaiian cultural practices are integrated into clinical practice, training, research, and evaluation.

Telemental health can increase access to psychiatric clinical services in underserved areas. However, it is essential that telemental health providers be trained in culturally appropriate care practices and understand the culture and community that they serve (Alicata et al., 2016; Brooks, Spargo, Yellowlees, O'Neill, & Shore, 2013; Savin, Glueck, Chardavoyne, Yager, & Novins, 2011; Shore, Savin, Novins, & Manson, 2006; Yellowlees, Shore, & Roberts, 2010). The success of telemental health is contingent upon consistent communication and interactions among the clinical directors at rural sites, telemental health providers, administrative and support staff, and the institutions that commonly interact with families, including schools, primary care, social welfare, and juvenile justice agencies (Savin et al., 2011). Care coordinators and social work specialists who interact frequently and directly with families and coordinate all mental health services are central to providing cultural and community context (Alicata et al., 2016). They are the primary contact with the families to address schedules and urgent- and after-hour care, procure on-site translation services, and train families in the use of the technology. They attend all appointments and team meetings, court hearings, and home visits when transportation and other psychosocial challenges are an issue. Thus, the community-based care coordinators facilitate treatment engagement, bringing familiarity to the patients and providing insight to providers into patients' daily lives and stressors (Helm et al., 2016).

In areas of shortage, attention has centered on primary care providers to screen, diagnose, and treat mental health conditions (Guerrero et al., 2017). However, many providers reported feeling unprepared, professionally isolated, and pressured for time in their practice. Through telemental health, primary care providers may access specialists for patient care and education, allowing them to continue treating their patients and better serve their communities (Chung-Do et al., 2012). Guerrero and colleagues (2017) describe the programmatic components that operationalize and facilitate successful primary care integration using telepsychiatry in Hawaiʻi, including universal screening, telephone availability, mutually educational team rounds, and as-needed consultations. Collaborating closely to provide coordinated care to patients is efficient and results in high-quality care (Guerrero et al., 2017; Helm et al., 2016).

Project ECHO (Extension for Community Healthcare Outcomes) is another empirically based option for enhancing specialty care capacity in rural, underserved communities through regularly scheduled, facilitated case-based learning, knowledge networks, and learning loops among primary care, interdisciplinary specialists, and community-based partners (Komaromy et al., 2016; Sockalingam et al.,

[36] herbal medicine
[37] massage or soft tissue manipulation
[38] conflict resolution

[39] health of our nation

2017). In 2016, ECHO Hawai‘i launched its behavioral modules.

- **These programs, designed to optimize Native Hawaiian mental and behavioral health, are frequently initiated and led by Native Hawaiians as key stakeholders. While the focus of many of these programs is on Native Hawaiians, the individuals they serve are multicultural.**

The reclaiming of Native culture, traditions, values, and practices during the Native Hawaiian renaissance influenced many mental health providers and scholars to implement programs and research for Native Hawaiian people incorporating indigenous knowledge (McCubbin & Marsella, 2009). The two-volume *Nānā i ke Kumu: Look to the Source* (Pukui et al., 1972) described Native Hawaiian ways of living, knowing, and being, setting the stage for indigenization. Key informants acknowledged the lack of available and appropriate mental health care and adequate funding to continue to support existing services. The absence or severely limited number of Native Hawaiian providers and other providers who can adequately address the cultural aspects of mental health issues within the community was a prominent issue. Furthermore, key informant interviews and publications universally called for a change in focus from a Western mental health model with the individual at the center to one in which consideration was given to multiple generations, the extended family, and the entire community. Native Hawaiian communities, providers, and researchers who collaborate with them have designed and evaluated programs with these considerations in mind, to support education, prevention, and treatment. Such programs enable communities to introduce and assess innovative, culturally grounded prevention and care initiatives in their communities. As the host culture, programs that benefit Native Hawaiians also benefit others who call Hawai‘i their home, and ultimately, all communities in Hawai‘i. As was noted earlier, the majority of Native Hawaiians have one or more other ethnicities from Hawai‘i’s diverse immigrant groups. The term *Hapa-Hawaiian* refers to Native Hawaiian mixed with one or more immigrant ethnicities. Hapa-Hawaiians raise the additional challenge of developing cultural treatments that find the common ground within their ethnic diversity of persons, families, and communities. To address this challenge, innovative sociocultural models of mental or behavioral health assessments and interventions should be developed with guidance from community-based leaders and cultural practitioners.

## Gaps

- **Data on Native Hawaiian mental and behavioral health and well-being status are challenging to find and not consistently or regularly collected and reported. Indigenous data governance can assert Native Hawaiian data rights and interests; ensure that data for and about Native Hawaiians are protected; and require quality and integrity of Native Hawaiian data and their collection.**

There are numerous challenges encountered in seeking to understand Native Hawaiian mental and behavioral health and well-being. For a more complete discussion of these issues, see Chapter 6: Data Governance. There are few sources of disaggregated data among large-scale, community-based epidemiologic studies organized in a central portal or set of documents. Disaggregated data are data that have been broken down into smaller information units, enabling us to delve more precisely into a set of results to highlight issues of interest (i.e., gender, urban vs. rural location, income, ethnocultural background, language, geographical location, or age group). We have been unable to consistently or readily find data on Native Hawaiian mental and behavioral health status. It is even more difficult to obtain specific data on kūpuna.[40]

On the one hand, the Hawai‘i Department of Health, Kamehameha Schools, the Office of Hawaiian Affairs, and the University of Hawai‘i generate helpful reports, presentations, and papers by compiling existing data. The Hawai‘i Health Data Warehouse was created to centralize data from multiple sources within a single location and to present results in a form that is easy for the public to access and utilize (Chosy et al., 2015). However, with the exception of depression, mental health is not routinely assessed in statewide surveys. Even less information is available on protective factors, which would be essential for determining optimal ways to improve well-being. Fully disaggregating data and regularly assessing key information would help to reveal hidden trends among vulnerable populations. Disaggregated data play a critical role in helping to understand not only the extent of mental and behavioral health disparities, but also the effectiveness of interventions in meeting the needs of children, families, elders, and communities from a culturally congruent point of view.

[40] elders

"Indigenous [communities], like all communities, require data to identify problems, to develop and prioritize solutions, to make strategic decisions and defensible policies, to influence external entities, and, most importantly, to bring the community's vision of a healthy and vibrant society to life" (Rainie, Schultz, Briggs, Riggs, & Palmanteer-Holder, 2017, p. 1). Indigenous communities seek to exercise their rights to information about their communities and people (Kukutai & Taylor, 2016). For example, the Waianae Coast Comprehensive Health Center's Research Committee reviews study requests from a community-engagement perspective, requiring shared data ownership. In mainstream data discussions, data sovereignty is the right of a community to collect and manage its own data (Oneha, et al., 2014; Rouse, 2013), while data governance refers to the ownership, collection, control, analysis, and use of data (The Data Governance Institute, 2015). Indigenous groups seek both data sovereignty and governance.

- **Disparities are magnified by limitation in access and availability of services, particularly in rural, primarily Native Hawaiian communities.**

Mental and behavioral health care reflects significant disparities in service access and availability, particularly in rural areas of all islands, which are medically underserved and experience health professional shortages (Helm et al., 2016). Conservative, demand-based estimates of psychiatric workforce needs indicate a shortage, with small numbers of psychiatrists, if any, on neighbor islands or working in rural communities on Oʻahu (Aaronson & Withy, 2017; Guerrero et al., 2017). Overall, there is a shortage of over 100 psychiatrists in Hawaiʻi (Aaronson & Withy, 2017).

- **While some programs have been found to be successful at improving well-being, most culturally based and culturally adapted mental health interventions for Native Hawaiians have not been formally evaluated.**

*We need to be a little bit more systematic in our approach. We need to increase accountability, evaluate what we're doing, demonstrate effectiveness, and I don't mean in a Western sense where [for example] we're decreasing their depression, but are we meeting the goals that the people we serve want? Is it doing something for them and their families?...Evidence-based [has a] negative meaning in the Hawaiian communities, which [argue that] it doesn't work here; which I agree. But evidence means that it's been found to work with our people…[W]e can't just say this is Hawaiian, or what we think is Hawaiian, and assume [that it's going] to work. We need to say this is Hawaiian, this is meaningful, it is what we believe is happening, but let's evaluate it for its intended outcomes. When we can show what we're doing works, and has an effect, we can get funding.*

J. Keaweʻaimoku Kaholokula, PhD
Professor and Chair
Department of Native Hawaiian Health
University of Hawai`i at Mānoa
John A. Burns School of Medicine

Programs must be evaluated with respect to processes and outcomes that incorporate an indigenous Native Hawaiian framework. Unfortunately, more Western evaluation approaches tend to place the "problem" within the individual rather than consider the context (e.g., environment) of the individual. For example, according to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (American Psychiatric Association, 2013), substance use disorder is described as a problematic pattern of using alcohol or another substance that results in impairment in daily life or noticeable distress. Grant (2008) insightfully observed that the current "diagnosis of a substance use disorder does not seem to consider social learning or cultural and environmental factors," and yet, "a change in context [residential treatment, discontinuing contact with people who use the substance, etc.] is one of the most commonly prescribed treatments of substance use disorders" (p. 2). Similar arguments can be made with respect to other mental health disorders. This type of inconsistency may contribute to Native Hawaiians' rejection of Western medicine due to distrust and lack of culturally relevant treatment protocols (Kamaka, Paloma, & Maskarinec, 2011). Without appropriate assessment and interventions, these communities are unlikely to seek treatment for illness, engage in preventive services, or report to follow-up sessions. These adverse conditions compound the difficulty of evaluating the efficacy of programs that are intended to improve Native Hawaiian well-being.

From a more indigenous approach, when the context of the individual is examined, then "interventions are holistic and not based on the problem, per se, but on the person's or family's sense of esteem and identity" (Mokuau, 2002, p. 85). By making the identity of the person a priority, the agency and treatment assess the culture and values of that person. When treatment acknowledges not only the identity of that singular person, but the entire culture

that the person identifies with, then treatment naturally becomes culturally relevant.

Culture is the shared learned meanings and behaviors that are transmitted from within a social activity context for purposes of promoting individual/societal adjustment, growth, and development. Culture has both external representations (i.e., artifacts, roles, activity contexts, institutions) and internal representations (i.e., values, beliefs. attitudes. activity contexts, patterns of consciousness, personality styles, epistemology). The shared meanings and behaviors are subject to continuous change and modification in response to changing internal and external circumstances. (Grant, 2008, as cited in Marsella & Yamada, 2010, p. 10.)

In this definition, it is necessary to highlight the two main components of culture: Culture is shared socially though meanings and values, which are represented both externally and internally; and such values and meanings change over time consequent to changing internal and external representations. This is of utmost importance when incorporating Native Hawaiian culture into practices of treating substance abuse because external factors, such as colonization, disease, alcohol, drugs, and tourism, as well as internal factors, such as loss, depression, anger, sadness, and despair, have altered Native Hawaiian culture (Grant, 2008). These changes act as chronic stressors and forms of oppression, which can translate into problems in physical health, mental health, and/or substance abuse (Morelli & Fong, 2008). The goal is that, as culture is integrated with treatment not only for possible shared meanings and values, but also to create effective treatment models of healing and recovery among Native Hawaiians, the outcome will be valid improvements in well-being. By understanding the nature of culture and its effect on health outcomes, treatment can be initiated to address more effectively not only pathologies such as substance abuse disorders, but also negative effects upon Native Hawaiian identity. Once the gap between cultural values and Western approaches is bridged through treatment, clients will be better protected against misusing substances because they will be more attuned to themselves and able to draw from the strengths of their culture (Grant, 2008; Mokuau, 2002). Therefore, "cultural strengths may be viewed as protective factors and should be the focus of prevention and treatment efforts" (Mokuau, 2002, p. 86).

Unfortunately, few studies focus on interventions that enhance resilience, and these rarely include cultural factors (Brady, 1993; Frison, Wallander, & Browne 1998; Werner, 1995). Werner conducted pioneering work in the field of resilience, examining multiple protective factors and their impact on adolescents on Kaua'i (Werner, 1971; Werner & Johnson, 1999; Werner & Smith, 1982, 1992). However, Native Hawaiians and culture were not focus areas. In research on Native Hawaiian youth, more than 80% of those facing adversity did not exhibit high levels of psychiatric symptoms, demonstrating resilience (Carlton et al., 2006; Goebert et al., 2000). The odds increased multiplicatively with the addition of family adversity indicators among both Native Hawaiians and non-Hawaiians. Among Native Hawaiian youth, the risk for depression was most dramatic, significantly increasing from 1.8-fold with one adversity indicator to 3.1-fold with two indicators, and 9.7-fold with four indicators. While Native Hawaiian youth experienced more family adversity than non-Hawaiians, Native Hawaiians were also more likely to have higher levels of family support. The presence of strong family support significantly increased resilience. These findings support the need for intervention programs designed to promote resilience in adolescents, including highlighting the importance of the family in culturally appropriate ways.

Further, there is increasing support for a strong connection between well-being and identification with culture among non-Hawaiian indigenous people. Culture facilitates resilience for indigenous people facing adversity (Adelson, 2000; Montgomery, Miville, Winterowd, Jeffries, & Baysden, 2000; Roberts & Holmes, 1999; Wexler, DiFluvio, & Burke, 2009; Les Whitbeck, Hoyt, Stubben, & LaFromboise, 2001). Borowsky and colleagues (Borowsky, Resnick, Ireland, & Blum, 1999) found that increasing protective factors was more effective than decreasing risk factors in reducing suicide risk among indigenous youth. Building protective factors and resilience through cultural integration and ethnocultural identity are promising approaches. A strong sense of ethnocultural identity has been correlated with higher levels of psychological health for indigenous youth, including feelings of self-worth, self-efficacy, connectedness, and purpose (McCabe, 2007; Minore, Boone, Katt, & Kinch, 1991; Les Whitbeck, Chen, Hoyt, & Adams, 2004; White, 2000).

Several studies have shown that integrating culture can lead to improved program success among indigenous Native Hawaiian and minority youth (Huriwai, Sellman, Sullivan, & Potiki, 2000; Williams, Nasir, Smither, & Troon, 2006; Withy, Lee, & Renger, 2007). Two examples of programs integrating cultural components that demonstrated effectiveness are described below. The Pono Curriculum is a culture-specific, interactive substance abuse prevention program that utilizes core Native Hawaiian values, initially implemented in schools (Kim, Withy, Jackson, & Sekaguchi, 2007). The program encourages practicing and living the cultural

and spiritual principles associated with 21 values, thereby increasing cultural identity and self-worth, improving family and social communication skills, and recognizing the dangers of substance abuse. Results for 155 students who used the Pono Curriculum demonstrated significant positive effects of the curriculum on student school commitment ($p<0.007$) and self-esteem ($p<0.042$), with reduced positive perception of harmful drugs ($p<0.040$), and maintenance of low alcohol, tobacco, and other drug use (Kim, Withy, Jackson, & Sekaguchi, 2007). The curriculum also served as the basis for an effective, culturally grounded residential substance abuse intervention targeting drug-involved youth (Withy, Lee, & Renger, 2007). Therefore, the Pono Curriculum functions as a prototype for community- and Native Hawaiian-initiated, culture-based programs that are contextually relevant for both prevention and intervention paradigms (Rehuher, Hiramatsu, & Helm, 2008).

Another example is the Queen's Medical Center's Family Treatment Center, which promotes the health and well-being of Hawaii's adolescents and their families through core evidence-based strategies, including individual therapies; family strengthening; promoting physical health and well-being; developing a sense of community, such as cultural, spiritual, and social awareness; and nurturing Native Hawaiian concepts of community and relationships with people and the environment (Bell et al., 2001a, 2001b; Carlton et al., 2006). The cultural integration program at the Family Treatment Center places Native Hawaiian values at the center of well-being, providing adolescents with a foundational guide for beliefs, social behavior, and attitudes that help them to think about practical ways of expressing values about themselves, others, the community, and the world. Through the cultural integration program, youth are exposed to Native Hawaiian values in their learning environment as well as in individual and group therapy sessions and are given the time and space to reflect on their meaning (Carlton et al., 2011). Examples of values selected by youth as relevant to their treatment and healing include acceptance (āpono, hoʻāpono), change (loli, hoʻololi), responsibility (kuleana), positive attitude (ʻoluʻolu), patience (ahonui), faith (manaʻoʻiʻo), forgiveness (kala, hoʻokala), and respect (hōʻihi). By including cultural values in education and therapy, youth are provided with the principles and tools for developing the whole person physically, mentally, emotionally, and spirituality. Such integration allows the therapist to develop unique awareness and understanding of the youth's thoughts, views, and perspectives; emotional and cognitive capacities; interpersonal relatedness; and morality. By living the selected cultural values, youth become more resilient and better able to cope with adversity in the future.

More recently, the Family Treatment Center began a collaborative project on healing through art, in which murals along its walls reflect Native Hawaiian cultural values by telling the story of how Queen Emma (the founder of Queen's Medical Center) as a 26-year-old dealt with the devastating loss of her 4-year-old son, followed 16 months later by the death of her grief-stricken husband, King Kamehameha IV (Goebert et al., 2018). As the youth completed the murals, they vicariously experienced Queen Emma's mourning, journey of healing, and sublimation of her grief into advancing the mission and vision of the hospital to provide quality care to her people. Hence, the physical change in the treatment center's milieu literally and metaphorically created a place of courage and healing for the youth. Youth from the unit also went to the kalo[41] field as part of their treatment. During the process of caring for the kalo, they discussed cultural values and ancestral narratives. This heuristic healing approach that combines experiential cultural immersion, collaborative work, and artistic expression teaches adolescents on the unit to channel their suffering into positive action, increasing hope.

- **A connection between historically traumatic events (physical, emotional, social, and spiritual genocide) and contemporary stressors has been posited to impact physical and emotional well-being but has not been well-studied among Native Hawaiians.**

As described in the Introduction, historical trauma is the cumulative biopsychosocial wounding over the lifespan and across generations, emanating from massive group trauma followed by a history of oppression and colonial exploitation (Blaisdell, 1989; Blaisdell & Mokuau, 1991; Brave Heart, 1998, 1999a, 1999b, 2000; Brave Heart & DeBruyn, 1998; Brave Heart-Jordan & DeBruyn, 1995; DeCambra, Marshall, & Ono, 1998; Kanahele, 1986; Mokuau & Matsuoka, 1995; Trask, 1993, 1994). In the only study measuring the impact of historical trauma among Native Hawaiians, Pokhrel and Herzog (2014) found that the vast majority of participants (college students) reported thinking about the loss of the following at least annually or on special occasions: culture (89%), ancestral land (81%), language (87%), traditional spiritual ways (83%), respect by children for traditional ways (83%) and for elders (79%). With the

[41] taro

same frequency, they also thought about the likelihood of early death (80%). Nearly one third of participants reflected upon such losses daily. In examining the relationship with substance use, the authors found that historical trauma was linked indirectly to higher substance use through higher perceived discrimination, but was also linked directly to lower substance use. Thoughts, knowledge, or experience associated with historical trauma that increase substance use behavior via increased perceived discrimination may also, paradoxically, promote resilience. One possible explanation for this seemingly contradictory finding is that the historical-trauma component that is separated out by the correlation with perceived discrimination may be a proxy or measure of cultural identification or ethnic pride. More research in this area is needed given the limitations of this study (e.g., cross-sectional design, different measures of substance use that appeared to be differentially associated with historical trauma, definition of overall substance use).

Alameda (2005) proposed a process model for Native Hawaiian healing that (1) synthesizes the historical events that occurred during the last 200 years and how they shaped—and continue to influence—the evolution of the Native Hawaiian ethnocultural identity; and (2) provides a cultural paradigm for healing an ethnic group from the effects of generational trauma at the individual and group levels. He posited that ancestral memory and awareness of cultural values, beliefs, and practices lead to self-validation and self-worth. Furthermore, he posited that new behaviors, combined with positive reinforcement and community recognition, lead to a change in self-perception of behavior, which is necessary for an increase in resilience.

Resilience refers to the process of adapting well in spite of adversity or trauma, and the ability to increase capacity for dealing with future negative events (Carlton et al., 2006; Masten, 2007). Given the value of promoting resilience in response to historical trauma, integrating cultural values into interventions is critical. Interventions must focus on the whole person, as a cultural being connected to his/her/their ‘ohana.[42] For interventions to be successful, they must target resilience, family relationships, social and interpersonal stressors, cohesion, and functioning (Beardslee & Knitzer, 2004. This is especially important for prevention and intervention programs. Programs that integrate cultural processes and encourage participation in meaningful cultural activities can lead to improved mental health and wellness for Native Hawaiians (Trinidad, 2009). Greater identification with Native Hawaiian culture is considered to be protective against risky behaviors such as substance use (Po‘a-Kekuawela, Okamoto, Nebre, Helm, & Chin, 2009). Prevention and treatment interventions that build on cultural strengths, such as resilience in the face of multiple challenges, and adaptive ways of coping (e.g., connecting with extended family, strengthening kinship ties, spirituality, creating positive meaning), can reduce symptoms.

- **While primary care integration and co-occurring disorder treatment have made significant advances, there remains a lack of a wholistic approach to well-being.**

The primary care integration model refers to programs that unify care for medical and mental health. The first such model, the medical home, originated in Hawai‘i several decades ago as an approach to coordinating services for children with special health care needs (Sia, Tonniges, Osterhus, & Taba, 2004). Primary care integration enhances access to care by establishing an ongoing relationship with primary care, a team approach to care, coordinated or integrated care, and a commitment to quality and safety, thereby decreasing rates of crisis intervention services and emergency department use (Hogan, Sederer, Smith, & Nossel, 2010). In addition to the Affordable Care Act endorsement, this approach has been embraced by the Native Hawaiian Health System, many of the community health centers, public and private insurers, and provider networks in Hawai‘i. By integrating physical, emotional, and spiritual needs, teams are oriented to the whole person. In practice, this is neither universal nor common.

*[Mental health is] having the personal equilibrium and stability to deal with the things life brings you in a manner that's functional, effective, satisfactory and leads to personal growth and health and that part of your overall wellness. There's no health without mental health. Physical health and spiritual health and mental health all go together. A person does best when all those areas are optimally functioning.*

William Sheehan, MD
Former Chief, Adult Mental Health Division
Psychiatrist, Child & Adolescent Mental Health Division
State of Hawai`i Department of Health

*Co-occurring disorders* refers to the co-occurrence of addiction *and* another mental illness

[42] family

(e.g. depressive disorder). In the general population, approximately half of all individuals with a substance use disorder have also been diagnosed with a mental illness, and about one third of individuals with a mental illness have also been diagnosed with a substance use disorder (Patrick, Hishinuma, & Pehm, 1999). Co-occurring disorders began receiving attention in the 1980s because treatment was less likely to be effective when only one illness was treated (Hryb, Kirkhart, & Talbert, 2007). As a result, clinical recognition was enhanced, some of the barriers to treatment were reduced, patient care was improved, and treatment outcomes were more successful. However, by its very definition, it is an illness model. A 6-year needs assessment of co-occurring substance use and mental health disorders, from 2002 through 2007, was funded by the Co-Occurring State Incentive Grant (COSIG) from the Hawai‘i State Department of Health. This project assessed the state's co-occurring disorders services system, identified unmet needs and problems in the system, and collected data to develop a plan to improve services and build capacity to establish a seamless system of care. Specifically, Native Hawaiian cultural methods utilized by cultural practitioners were assessed, including interventions that incorporated Native Hawaiian spiritual practices and traditional healing practices (Hawai‘i State Department of Health, 2008).

Another important form of co-occurring illness is when an individual has both a mental illness and a medical condition (i.e., comorbidity). Mental illness exacerbates morbidity from multiple chronic diseases such as cardiovascular disease, diabetes, obesity, asthma, and cancer (Reeves et al., 2011). This increased morbidity is a result of multiple factors including delayed help-seeking, less frequent use of medical care, and reduced treatment, resulting in a higher risk for adverse health outcomes. These are conditions that have been found at higher rates, with higher morbidity, among Native Hawaiians (See Chapter 3: Medical Health). For example, Grandinetti et al. (2000) found a significant association for a Native Hawaiian sample between depressive symptoms and hemoglobin A1c (HbA1c)—the latter being an indicator of diabetes at high levels.

The models of Native Hawaiian health and well-being presented in the Introduction of this report provide different cultural approaches to co-occurring and co-morbid conditions that attempt to explain how Native Hawaiians think about and address ailments and disruptions to their health and well-being. Further work in systematically applying these models to these kinds of disorders will be vital to advancing Native Hawaiian mental and behavioral health and wellness.

- **Few studies focus on Native Hawaiians across the lifespan. We have limited information on keiki[43] and kūpuna.[44] Research needs to examine developmental trajectories of Native Hawaiian mental health, which would provide essential information on the mental health needs of all Native Hawaiians. Treatment also needs to span multiple generations.**

Intergenerational longitudinal studies over the lifespan provide valuable information for understanding the contexts and dynamic relations among family, health, and well-being (Mare, 2014; Onoye et al., 2014; Werner, 2013). Longitudinal research has demonstrated that exposure to advantage and disadvantage accumulates over the life-course, influencing epigenetic, physiological, psychosocial, and behavioral attributes among individuals, families, and communities (World Health Organization, 2014b). For example, while the Kaua‘i Longitudinal Study of Resilience did not focus specifically on Native Hawaiians, it examined strengths across the lifespan starting with the perinatal period (Werner, 1993, 2004; Werner, Bierman, & French, 1971; Werner & Johnson, 1999; Werner & Smith, 1982, 1992), and found that significant adult social supports, including the extended family and beyond (e.g., aunties, uncles, grandparents, teachers), are strong protective factors for resilience.

Despite the advantages of Native Hawaiian mental health promotion programs for keiki and kūpuna, as well as longitudinal and intergenerational approaches, very little has been done in the implementation of such approaches. One exception is Hā Kūpuna: National Resource Center for Native Hawaiian Elders. Hā Kūpuna is one of three resource centers for Native elders funded by the U.S. Administration on Aging (Browne et al., 2014; Ka‘opua, Braun, Browne, Mokuau, & Park, 2011). The name Hā Kūpuna derives from the Native Hawaiian cultural belief that one's life essence (spiritual energy, ancestral knowledge) is transmitted to others through the sharing of hā.[45] It is believed that such sharing allows kūpuna[46] to pass on vital knowledge and wisdom to subsequent generations, thus perpetuating valued cultural traditions and a positive sense of identity. Grounded in these and other traditional Native Hawaiian cultural values, Hā Kūpuna seeks to ensure the transmission of hā from kūpuna to younger generations by achieving parity in

[43] young children
[44] elders
[45] breath of life
[46] elders

life expectancy and good health among Native Hawaiian older adults relative to other older Americans. As a center dedicated to the health of Native Hawaiian elders, Hā Kūpuna develops and disseminates knowledge to inform policy and service innovations. This program has provided a wealth of qualitative information, reflecting the voices of kūpuna and the needs of their caregivers (Browne, Braun, Mokuau, Kaʻopua, & Higuchi, 2011). "Among discussion points were: the kuleana[47] of the family in providing care to kūpuna; elders' concerns about becoming a family burden; the importance of prayer and spirituality in providing support to nā kūpuna and caregivers; the role of nā kūpuna in the ʻohana[48] and in Native Hawaiian culture (cultural preservation); and the importance of respect and sensitivity to privacy issues in elder and ʻohana communication" (pp. 6-7). Due to limitations in health monitoring assessments, information on mental and behavioral health in this program has been limited to suicide and general mental health (Braun, Mokuau, & Browne, 2010; Braun, Yang, Onaka, & Horiuchi, 1996).

*There is no beginning or end to healing. The seeking of health and healing is a process spanning from ʻōpio[49] to kūpuna and is spiritually understood as the essence of healing and health.*

Aunty Malia Craver, Kupuna
Ho`oponopono Cultural Practitioner

❖ **Systems of care remain in silos, resulting in fractured and inadequate coordination.**

He waiwai nui ka lōkahi.

*Unity is a precious possession.*

ʻŌlelo Noʻeau #977
(Pukui, 1983, p. 105)

The above ʻōlelo noʻeau[50] captures the Native Hawaiian value of being in harmony with one another. Ancestral Native Hawaiians developed a system of beliefs and practices for the purpose of promoting and maintaining unity, harmony, and balance (Blaisdell & Mokuau, 1991). Our mental health system is out of harmony. Too many Native Hawaiians are not receiving needed mental health care.

In Hawaiʻi, as in other jurisdictions, agencies have developed separate models of care with differing mandates that often result in a "silo" effect and fragmented care (Slavin & Suarez, 2013). Behavioral health and well-being are the responsibility of many organizations, including but not limited to Papa Ola Lōkahi; community health centers; hospitals and medical centers; university schools of medicine, nursing, pharmacy, psychology, social work, and other allied health programs; insurers; Aliʻi[51] trusts; the Office of Hawaiian Affairs; the Hawaiʻi State Departments of Education, Health, Human Services, Public Safety, and Justice; county departments; and many nonprofit organizations. Attaining mental and behavioral wellness requires an integrated systems of care approach. There is not one single entity responsible for the behavioral and mental health of Native Hawaiians in Hawaiʻi.

*"E ʻimi i ke ola mawaho" means "Seek life outside!" It's an ʻŌlelo Noʻeau that points out when someone is very sick and slow in healing—often because of complex and complicated illnesses and stressors—you can't stay home and isolate yourself; you have to get out of your house and go seek help from a kahuna or clinician with the expertise to help you.*

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Given the complexity and challenging determinants of mental health disparities, multidimensional, multifaceted approaches that address individual, community, program, system, and policy levels are needed (Safran et al., 2009). Such approaches are challenging to existing systems because they cut across so many policy and service areas (Keast, Mandell, Brown, & Woolcock, 2004).

Systems of care approaches align with models of Native Hawaiian well-being, sharing core values which strive to be family-focused, community-based, and culturally competent (Cook & Kilmer, 2004; Slavin & Suarez, 2013). Embedded systems of care principles reflect (1) strength-based services; (2) readily available services in least restrictive environments; (3) collaborative, integrated, and coordinated services; and (4) early identification and intervention (Slavin & Suarez, 2013; VanDenBerg, Bruns, & Burchard, 2003).

One example of a systems-approach for girls from diverse background in Hawaiʻi is Project Kealahou.

[47] responsibility
[48] family
[49] youth
[50] proverb, poetic saying
[51] royal

This project works to address the gaps in our current system for girls with histories of trauma on two levels: (1) At the direct service level, Project Kealahou works to develop and enhance mental health services for traumatized girls. (2) At the broader system level, Project Kealahou works to improve the degree of integration, collaboration, and shared understanding of trauma among major state agencies involved in caring for these girls (Slavin & Suarez, 2013). However, such approaches have been demonstrative in nature and are not universal.

**Recommendations for Impact**

Recommendations for this report were derived from review of related literature, key informant interviews, and committee input.

- **Promulgate Effective Community Engagement Programs.**

*Of the women in the correctional center, 95% are there because of drugs or drug-related crimes, and 75% have suffered some traumatic event in their life—not so much a singular event but a series of events, usually between the ages of 5 and 16. Substance abuse and truancy emerge as these young teens cope with trauma. Realizing the traumatic and criminal pathway of the women housed at WCCC, I sought the counsel of Kahuna Pule David Kaupu. These women committed crimes, but there were issues prior to them violating the law. How can they be healed and not just put in a cell? In considering our ancestors and pu'uhonua:*[52] *How do we create a sanctuary for healing? Kahu said when a woman enters WCCC, she is told that she is forgiven for what she has done to the community and her family. She is then instructed on how to live a forgiven life. The first step in the journey of forgiveness is to chip away at the internal walls that inhibit the female from seeing the source of the issue. These walls were built as protection from pain. The walls are thick and built up over years of trauma. When the walls are finally stripped away the process of cleaning out all the 'opala*[53] *can begin. From here, her journey is about her. Her family and children come later. This begins healing of self. The start of a lifelong journey of forgiveness. At the Hawaii Youth Correctional Facility focus has become increasingly important when a ward's family is still intact. We have created Halau Maluhia - "A gathering of Ha for peace" on the campus. This place is for family engagement. Originally two large cells that held sixteen wards but have been renovated to function as a family living room and a dining room. We have created a "safe" place for families to engage with community facilitators. A place where families can rediscover themselves. Within this space, families learn to communicate, share, and most important, listen. When peace is established within a family, a new journey begins.*

Mark Kawika Patterson
Former Warden,
Hawai'i Youth Correctional Facility and Women's
Community Correctional Facility
Konohiki (Administrator),
Kawailoa Youth & Family Wellness Center
Pū'ulu, Mana i ka Leo

Patterson describes a few ways for healing to begin. Such healing is essential for the well-being of individuals, their families, their communities. Programs that promote community engagement can improve mental health status for more than just one individual; such programs can also improve reintegration and social networking. Community participation in all parts of participatory research is key when striving toward community acceptance of the results of the intervention (Matsunaga et al., 1996). 'Ohana[54] is highly valued in Native Hawaiian communities. When programs engage families instead of individuals, they have the potential to be more effective. Several of our interviewees mentioned that social networks and supports help decrease rates of admission and readmission into medical and mental health facilities. It is important that the community engagement program be culturally based, as 'ohana is a central value in Native Hawaiian culture.

- Programs that promote community engagement improve reintegration and social networking.

Community-engaged programs are integral in ensuring reintegration and social networking, thereby improving community well-being. For examples, in the Statewide Needs Assessment of Co-Occurring Substance Use and Mental Disorders (Hawai'i State Department of Health, 2008), clubhouse programs are mentioned specifically by participants as providing a structured venue for social interaction, where consumers are "treated with respect." The need for more clubhouse programs in specific high-risk and rural areas was also noted. Another example is Hawaii's Caring Communities Initiative (HCCI) for

[52] place of refuge, peace, safety; sanctuary
[53] trash, refuse
[54] family

Youth Suicide Prevention, which partnered with six community organizations primarily serving Native Hawaiian youth in rural communities across the State of Hawai‘i. The goal was to integrate evidence-based practices into youth-led community awareness activities that were grounded in each community's strengths and needs (Chung-Do et al., 2014, 2015, 2016a, 2016b; Goebert et al., 2018). This resulted in improved integration and social networking. For instance, aspects of social capital are essential determinants of mental health (Herrman, Saxena, Moodie, & World Health Organization, 2005). According to Schaefer-McDaniel's (2004) framework, there are four dimensions of social capital: 1) Social Networks and Sociability; 2) Trust and Reciprocity; 3) Sense of Belonging/Place Attachment; and 4) Investment. HCCI was successful in building social capital among the youth, their supportive adult partners, and their communities.

*To me, that's the biggest impact that we've made—that people know we're here and that we're willing to help and that we care. That's a big, I don't know—I feel like that's one thing that could save a life—just knowing that people care.*

Youth Leader
Hawaii's Caring Communities Initiative
for Youth Suicide Prevention

- When programs can engage families instead of individuals, programs are more effective and can improve mental health status for more than just one individual.

Multigenerational approaches recognize the role of being "disadvantaged," including due to historical trauma, in shaping health and well-being in families and across generations (Cheng, Johnson, & Goodman, 2016). National studies and best practices indicate that a multigenerational model of service delivery is more effective than one that separately addresses individuals' needs (e.g., Hawai‘i Department of Human Services, ‘Ohana Nui Program; "Strategic Intention," 2016). These approaches address the needs of children, parents, and grandparents early and concurrently, attaining better outcomes for the entire family. While multigenerational programs are costly and labor-intensive—especially for the most vulnerable families—the long-term benefits in social-emotional, physical, and economic well-being far outweigh the costs (Golden, Loprest, & Mills, 2012). Examples of such programs, described in the section on Promising Practices, include Ola Kino Maika‘i and the Ho‘opono Mamo Civil Citation Initiative.

- Communities want to help shape the direction and focus of research and evaluation efforts through collaborations.

As stated earlier, Native Hawaiian communities seek data governance and data sovereignty to ensure that data collected from studies in their communities are not exploited and are used for the purposes that they have determined together with academic researchers. Community-based participatory practices have been recognized as the most relevant in the fields of health disparities and health promotion (Dalton, Elias, & Wandersman, 2007). Embedded within the community-based participatory research approach is the recognition that the socio-political origins of health disproportionately impact disenfranchised groups, such as rural and indigenous populations (Freire, 1998a, 1998b), including Native Hawaiians. Participatory approaches increase value through integrative processes with the potential to transfer knowledge in both directions—i.e., communities and academic institutions transferring knowledge to and from each other. Both share equally in research planning, implementation, evaluation, and dissemination of results, as well as in any resulting benefits (DeCambra, Enos, Matsunaga, & Hammond, 1992; Oneha et al., 2014). Participatory research recognizes the benefits of a partnership between those with the scientific and technical knowledge and those with the equally valuable personal and cultural knowledge of the problems, program development and implementation, and research. Participatory research begins with the assumption that minority communities can and must benefit from research. Community-based participatory research reflects and integrates Native Hawaiian cultural values, assets, and lifestyle. The community perspective determines how the cultural norms of the community relate to the intervention and research.

Increasingly, attention is placed on conducting culturally-based evaluation (Frierson, Hood, & Hughes, 2010). Culturally Responsive Evaluation and Assessment - Hawaii Chapter (CREA-HI), a group of 20 Native Hawaiian evaluators hosted by the Consuelo Foundation, is laying the groundwork in these efforts by exploring what are important concepts, values, and practices of a Native Hawaiian evaluation framework (see https://www.creahawaii.com/). CREA-HI is using a Native Hawaiian lens to offer empowering, values-based evaluation approaches that promote equity and justice in the diversity that is Hawai‘i by weaving together and sharing stories, tools, and practices that affirm and draw from a Native Hawaiian worldview.

The Wai‘anae Coast Comprehensive Health Center provides an example of the ways that research

has focused on community-based approaches, serving as a model for engagement in indigenous research (Chan et al., 2002; DeCambra, Enos, Matsunaga, & Hammond, 1992; Matsunaga et al., 1996; Oneha & Beckham, 2004; Shoultz et al., 2006). Research has focused on cultural models of care, sense of place, health disparities, and interventions (Chandler & Bell, 1995; Crabbe, 1998; Custodio, Gard, & Graham, 2009; Magnussen et al., 2004; Magnussen, Shoultz, Oneha, Hla, & Brees-Saunders, 2007; Oneha, 2001; Oneha, Magnussen, & Shoultz, 2009, 2010; Okihiro et al., 2017). Braun and colleagues (Braun, Tsark, Santos, Aitaoto, & Chong, 2006) have also demonstrated successes with culturally based and culturally adapted programs using community-based participatory research to ensure sustainability and future collaboration, particularly for empirical studies of intervention effectiveness.

- **Expand Effective Culturally Based and Culturally Adapted Prevention and Interventions.**

Ua lehulehu a manomano ka ʻikena a ha Hawaiʻi.

*Great and numerous is*
*the knowledge of the Hawaiians.*

ʻŌlelo Noʻeau #2814
(Pukui, 1983, p. 309)

This ʻōlelo noʻeau serves as a reminder that, despite the many challenges facing Native Hawaiians, culture encapsulates a wealth of multi-layered knowledge that can support Native Hawaiian individuals, families, and communities in achieving wellness (Duponte, Martin, Mokuau, & Paglinawan, 2010). Culturally based prevention and intervention programs enhance communities, strengthen relationships, and contribute to healthy and resilient community members (Goebert et al., 2018; Rasmus, Charles, & Mohatt, 2014). Through the advancement of production, teaching, and acquisition of cultural knowledge and social voice, indigenization can occur (Trinidad, 2009).

Indigenization represents a paradigm shift in developing indigenous programs by linking interventions to a sense of community and cultural grounding (Kanahele, 1986; Meyer, 2001; Trinidad, 2009). When communities tell their stories and share their traditions and cultural practices, both communities and practices become sources of hope and inspiration (Grande, 2004; Smith, 1999; Trask, 1993; Trinidad, 2009). Through indigenization, communities can invoke their history and tradition, and then develop—utilizing technical consultation with academic researchers and community advisors—culturally relevant, locally directed healing interventions that integrate scientific principles to improve effectiveness and efficacy. Prevention and intervention efforts for Native Hawaiians must be culturally guided.

The cultural adaptation of interventions for specific cultural populations can increase their effectiveness in addressing mental health issues. Griner and Smith (2006) conducted a meta-analytic review and found that interventions adapted for a specific cultural group were four times more effective than interventions provided to more varied cultural backgrounds. Culturally appropriate substance use interventions were one of four priority areas identified by the 2016 Hawaiʻi Advisory Commission on Drug Abuse and Controlled Substances for prevention and treatment of substance use in Hawaiʻi (Alcohol and Drug Abuse Division, 2016). Many of the Native Hawaiian interventions described earlier – e.g., evidence-based substance abuse programs addressing co-occurring and comorbid issues – have applied overarching Native Hawaiian cultural concepts and practices recommended by Native Hawaiian cultural practitioners and experts. These programs did not, however, systematically use indigenization as a paradigm – i.e., culturally adapting interventions to the population(s) they served, and then empirically assessing their effectiveness. Although cultural adaptation has been shown to be effective in addressing adolescent substance use prevention and treatment, youth suicide prevention, intimate partner violence, postpartum activity, teen pregnancy, elder health, cancer, and chronic diseases among Native Hawaiians, it has not been applied and evaluated for other mental health interventions (Albright et al., 2012; Braun, Fang, Kaanoi, Kamaka, & Gotay, 2005; Chung-Do et al., 2014, 2015, 2016a, 2016b; Helm et al., 2008, 2013; Hishinuma et al., 2009; Kaholokula et al., 2012; Kaʻopua, Park, Ward, & Braun, 2011; Manaseri, Uehara, & Roberts, 2014; Mau et al., 2010; Mokuau, Braun, & Daniggelis, 2012; Mokuau, Browne, Choy, & Braun, 2008; Okamoto, Helm, Poʻa-Kekuawela, Chin, & Nebre, 2009; Okamoto, Kulis, Helm, Lauricella, & Valdez, 2016; Shoultz et al., 2015; Sinclair et al., 2012; Withy, Lee, & Renger, 2007).

For cultural adaptation to be successful, there must be a balance between fidelity to evidence-based and culturally informed applications. In a critical review of culturally aligned interventions, those interventions tailored to address barriers within existing practices were found to improve care and patient outcomes (Baker et al., 2010). However, there have been only four studies focused on Native American populations, and only a single study

including Pacific Islanders (McFarlane, Burrell, Duggan, & Tandon, 2016). Cultural adaptation has the potential to improve delivery of services to underserved populations, and thus enhance health care and reduce health disparities.

- There is a need for programs using cultural and wholistic approaches that are designed to optimize Native Hawaiian mental and behavioral health, and that prevent mental/behavioral health challenges before they occur.

There are a number of Native Hawaiian cultural activities that promote healthy lifestyles and, if implemented correctly, can be used as valuable tools to encourage healthy behavior that will, in turn, improve not only mental but overall health. For example, surfing, canoe paddling, and dancing hula are physical activities that promote active lifestyles and social networking.

The Hale Mua initiative, which has established hale mua[55] in at least three Native Hawaiian communities on Oʻahu and Hawaiʻi island, is another sociocultural preventive intervention (ʻAha Kāne, 2017). The hale mua was the traditional Native Hawaiian social institution within which boys who were weaned from their mothers, male youth, and adult men learned from esteemed elders who served as role models, teachers, and mentors, about the social skills and mores of being responsible, contributing citizens. In contemporary times, the Hale Mua initiative provides Hawaiian men—from youth to adulthood—with culturally adapted gender roles, social mores, intergenerational traditions, empowerment by the effective use of mana,[56] and kuleana[57] for their personal and communal conduct. In addition, the Native Hawaiian transgender role, i.e., mahu, is also taught within this initiative. Thus, the Hale Mua initiative helps to shape social and gender roles in the context of ethnocultural identification, offering a place of support and mentoring by esteemed cultural practitioners and elders—all protective factors against threats to mental and behavioral health and wellness.

A prominent theme among the responses of the interviewees for this report was that the Native Hawaiian cultural and wholistic approach involves a complementary dualism whereby the same method or intervention can defend against adversity (i.e., serve as prevention) or provide treatment and healing, depending on the circumstances. The literature describes additional Native Hawaiian perspectives that include: the use of a shared language (Pidgin and various Native Hawaiian words), the integration of place and environment (aloha ʻāina[58]), the practice of hoʻoponopono,[59] and, finally, "deep cultural therapy" (Morelli & Fong, 2000). Preventive and treatment interventions for Native Hawaiians emphasize common experience and understanding. Each of the aforementioned perspectives—language, aloha ʻāina, hoʻoponopono, and deep cultural therapy—contain the complementary dualism in which preventive and treatment interventions can be developed to fit the need of the person(s) being served.

For example, Pidgin English used by staff seems to "increase the meaning behind the interactions of the participants" (Grant, 2008, p. 32) and serves as an empathic tool to strengthen the relationship required for health and wellness. Similarly, aloha ʻāina, or caring for the land through gardening or loʻi[60] work, deepens the meaning of recovery and resilience through physical discipline, cognitive attention and comprehension, and connection to a broader spiritual significance (Mokuau, 2002). Hoʻoponopono can be implemented in treatment to help clients resolve past transgressions that may be contributing to their poor health conditions and lack of progress in treatment; furthermore, it can provide clients, and more importantly their families, with a preventive process that can help them address conflict before it is repressed or suppressed and festers. Lastly, deep cultural therapy, typically conducted by experienced kūpuna, consists of multiple sessions up to six hours long. The sessions are based on vicarious learning via role-playing and reenacting of Native Hawaiian legends and mythic figures, followed by a discussion and reflection about the client's response to this material. The legends are often sacred stories of Native Hawaiian male and female heroes with human vulnerabilities and strengths, who face trials and adversity which they are able to address systematically with the help of other people, ancestral guardians, and divine intervention. The hero in the story typically grows—often painfully—from the experience, gaining maturity, wisdom, and empowerment. A study of deep cultural therapy by Morelli and Fong (2000) found two recurring themes in the reflections of their participants (who were all women): "lack of self-appreciation and internalized oppression" (2000, p. 38). These intrapersonal insights may be selection indicators to identify individuals who would benefit from deep cultural therapy. The use of legend or sacred stories may also have benefit for building

[55] men's eating houses
[56] spiritual and self-actualizing power
[57] responsibility
[58] caring for the land
[59] process for setting things right; conflict resolution
[60] irrigated terrace used for growing taro

resilience and promoting vicarious and anticipatory play in children and adolescents. Empirical studies of these interventions in different age groups will help define their effectiveness and indications for use.

- Such interventions bridge gaps that Native Hawaiians may experience between their behavior and their values.

When denied access to participation in cultural activities and healing practices, as well as hindered from living cultural values, Native Hawaiians will be challenged to determine what is right—what is pono. Consistent with the projects described under Effective and Promising Practices, ʻImi ke Ola Mau identified five key cultural components as helpful for Native Hawaiians from a community perspective: integration of kūpuna,[61] use of land- and sea-based sites, use of cultural values and traditional practices, incorporation of family and community into treatment, and use of a language consultant (ʻImi ke Ola Mau, 2009; Lee, 2012). Culturally based programs provide learning environments that immerse youth and their families in their values, heritage, cultures, landscapes, opportunities, and experiences, which are fundamental prerequisites for nurturing healthy and responsive citizens and contribute to the growth and harmony of the community (Office of Youth Services, 2016).

- **Decrease Stigma and Ensure Access to Services.**

  - The stigma of mental illness and behavioral health challenges adversely impacts all levels of well-being, including prevention, help-seeking, access, recovery, and resilience.

Stigma refers to a mark of disgrace that sets a person aside from others based upon misinformation and differences in understanding due to culture or religion (Byrne, 2000, 2001). It often results in prejudice and discrimination based on negative stereotyping (Papish et al., 2013). For example, due to stigmatizing attitudes, the public may be hesitant to employ or rent property to people with mental illness or a history of substance abuse (Corrigan, Morris, Michaels, Rafacz, & Rüsch, 2012). Many of those suffering from mental illness or substance abuse may not seek the treatment, resources, support, and advocacy that they need for fear of what others may think (Cutler et al., 2009). Those who seek psychiatric or substance abuse treatment are sometimes discouraged by family, friends, care providers, and clergy from receiving help, believing that the person can "get over it" (Schmetzer & Lafuze, 2008). While over half of Native Hawaiians (56.8%) strongly agreed that treatment can help people with mental illness lead normal lives, the proportion was significantly lower than for Whites (69.3%; Reyes-Salvail, Liang, & Gross, 2009). Furthermore, Native Hawaiians with mental illness were two-fold less likely to receive treatment. Locally, organizations such as Mental Health America of Hawaiʻi, the National Alliance for Mental Illness - Hawaiʻi Chapter, and Native Hawaiian and community health centers, are working with families and communities to decrease stigma.

*When you talk about behavioral health, [community members] think it's more about mental disability. So [to] a lot of the people I shared with in the community, I say, "You know what, sometimes it's just there to talk story with somebody that you don't know and you going to feel more comfortable with talking about your problems." That's all it is. It has nothing to do with mental illness; it has nothing to do with that. So by all means, you like talk story to somebody [about] any hardship that you're going through, do it, because sometimes I do. You know, I mean, I talk to them all the time about all kind stuff, but you know, and of course it's about services that we render here…it's always good to talk about it.*

Komela Horner, MA
Community Health Worker
Na Puʻuwai
(Native Hawaiian Health Care System)

Behavioral health problems such as being overweight or obese, both conditions in which Native Hawaiians are overrepresented, are also heavily influenced by stigma. McCubbin and Antonio (2012) conducted a study using the Hawaiian Health Survey to examine stigma, as measured by perceived discrimination among Native Hawaiians ($N$ = 118 men and 249 women). Their study used the Everyday Discrimination Scale, which is comprised of two subscales: overt and covert discrimination. Overt discrimination is measured by four items ("perceptions of being dishonest, one to be afraid of, called names or insulted, and harassed or threatened") and covert discrimination by five items ("receiving poorer services than other people at restaurants and stores, being treated with less respect than other people, being treated with less courtesy than other people, people act as if they don't think you are as good as they are, and people act as if they think you are not smart"). They found that for Native Hawaiian men age 35-54 years, with household incomes of

[61] elders

$35,000 or less, and living in Hawai‘i 6-20 years, overt discrimination was positively associated with being overweight or obese. Among Native Hawaiian women age 18-34 years, with household incomes of $35,000-$74,000, whether with some college education or with a high school diploma or less, covert discrimination was negatively related to being overweight or obese. They posited that these results may indicate an "at-risk profile" for Native Hawaiian men who face overt discrimination. For Native Hawaiian women, they proposed a "profile of protective factors" that may be related to the ability to cognitively reframe covert discrimination into new meanings that generate resilience. The McCubbin and Antonio study shows the complexity of stigma surrounding mental and behavioral health problems, and the necessity of investigating such stigma in order to develop meaningful preventive and treatment strategies.

- ❖ A responsive system of care will improve access to mental health treatment and will eliminate health disparities for Native Hawaiians, their families, and communities.

With the deinstitutionalization movement during the Kennedy Administration initiated by the Community Mental Health Act of 1963, states began to close "asylums" or mental health institutions, transitioning patients from hospital settings to community settings (Safran et al., 2009). However, the more complicated task of creating effective community mental health systems remains unfulfilled. Consequently, emergency rooms, jails and prisons, and homeless camps and shelters have become the destinations of individuals manifesting disturbing behavioral symptoms in public settings. Native Hawaiian and community health centers and rural health clinics have made significant advances in wholistic, intergenerational, integrated health practices. A newly envisioned health care system that also substantively addresses behavioral and mental health is needed to improve access and eliminate health disparities.

- ❖ An effective behavioral health system must be capable of providing an array of prevention and treatment options in multiple settings, including services that are culturally responsive and contribute to improvement of treatment outcomes.

The Cultural Influences on Mental Health framework is a useful approach to characterize cultural factors in the relationship that develops among patients, their family, and the mental health care system (Jimenez, Bartels, Cardenas, Dhaliwal, & Alegría, 2012). This model suggests that cultural differences may contribute to the prevalence and experience of mental disorders, influence beliefs about the causes of mental illness, and subsequently impact treatments and interventions. Treatment preferences shape the manner in which everyone seeks help, and from whom help is sought. Therefore, the greater the availability of culturally responsive options, the greater the likelihood that Native Hawaiians will seek and receive services. Integrated treatment approaches can benefit from personalization because they involve matching diverse treatment options to unique profiles based on individual, family, and community need (Spaulding & Deogun, 2011). With growing awareness of health disparities and integrated systems of care, greater attention is placed on socioecological approaches and providing services at various levels. Once fragmentation is eliminated, the comprehensive array of programs and services offered can become a major strength of the system.

- ❖ **Increase Workforce Development and Training for Behavioral Health Providers.**

Indigenous and more integrated Western models of training are needed to meet behavioral health workforce demands. Traditional medicine in Hawai‘i was founded on centuries of evidence-informed practices (Smith & Ma, 2016). However, such practices became illegal in 1865. While the law may have been well-intended, it set up the obstacle of requiring all practitioners to obtain a license. With the Native Hawaiian renaissance, traditional healers and kahuna[62] were again permitted to practice legally in 1973. The Native Hawaiian Health Care Act (1988) also recognized traditional healers of Native Hawaiian ancestry. Act 162, the "Healer's Law," assigns certification to the traditional Hawaiian healing community with several councils across the State determining their own criteria, such as the Kupuna Council which recognized Papa Ola Lōkahi. Yet, with so many impediments to providing legal, reimbursable care, access is limited and continues to be marginalized.

There are a number of Western programs offered in Hawai‘i with the potential to expand the behavioral health workforce, including but not limited to: allopathic medicine and residency training at the University of Hawai‘i (UH); clinical psychology at UH; community health worker certification at UH;

[62] healer, master, sorcerer, priest

nursing programs at UH, Chaminade University, Hawai‘i Pacific University (HPU), and University of Phoenix; osteopathic medicine at A.T. Stills University (based at the Wai‘anae Coast Comprehensive Health Center); public health at UH; social work at UH and HPU; and certification in substance abuse counseling and management from the Hawai‘i Department of Health.

Nursing programs began in Hawaii more than 75 years ago. Nursing programs are offered at the University of Hawai‘i (UH), Chaminade University, Hawai‘i Pacific University, and University of Phoenix (LeVasseur & Qureshi, 2015). All of the nursing programs' curricula emphasize culture (including Native Hawaiian, Pacific Islander, and Asian culture) and its influence on health and healing. Nursing programs in the state also weave lessons on transcultural care throughout core classes such as community health, complex nursing care, and mental health in the undergraduate programs. The UH nursing program requires coursework in culturally competent research methods for its doctoral students and houses the ‘Ike Ao Pono program, which aims to recruit and support Native Hawaiian nursing students (‘Ike may be translated as “a shared vision held and nurtured by all,” Ao as “the everlasting quality of continuation,” and Pono as “well-being in life”). Chaminade’s program engages students in community outreach projects, service learning, and supervised clinical experiences (Thompson, Jarvis, Sparacino, Kuo, & Genz, 2012). However, while they have a community focus, none of these programs offer advanced practice nursing with a mental health specialization.

Established in 1920, the UH Psychology Department provides training in behavioral neuroscience, community and culture, experimental psychopathology, and clinical, cognitive, developmental, and social psychology (http://www.psychology.hawaii.edu/index.html#). Its Clinical Studies Program offers the Doctor of Philosophy (PhD) in Clinical Psychology and has been accredited by the American Psychological Association since 1972.

UH has offered training in social work since 1936 (http://www.hawaii.edu/sswork/). In 2008, the UH Board of Regents unanimously approved the naming of The Myron B. Thompson School of Social Work. Myron "Pinky" Thompson, who received his MSW from UH in 1953, went on to become a noted humanitarian and leader in the struggle for the preservation of Native Hawaiian culture. The school naming reflects not only its commitment to Native Hawaiians but also to providing services anchored in cultural values and culturally based models of practice (Mokuau, Garlock-Tuiali'i, & Lee, 2008). Hawai‘i Pacific University also offers a social work program.

Established in 1962, the UH Department of Public Health has undergone many iterations (http://manoa.hawaii.edu/publichealth/). It is currently housed in the Myron B. Thompson School of Social Work. The Office of Public Health Studies strives to advance the health of the peoples of Hawai‘i through knowledge, discovery, innovation, engagement, inclusion, and leadership. It considers community diversity a strength, providing a supportive learning environment for students, staff, and faculty to serve community needs, and to understand and utilize strengths to promote healthy and thriving communities. Because knowledge of history, policy, health determinants, and ethics is essential to address and eliminate the inequities faced by Indigenous people, the department created a specialization in Native Hawaiian and Indigenous Health. Many faculty members conduct community-engaged research on mental and behavioral health and well-being, including research pertaining to Native Hawaiian communities.

In 1973, the ‘Imi Ho‘ōla[63] Program was established at UH under the leadership of Dr. Benjamin Young, a Native Hawaiian psychiatrist (DeCambra & Lee, 2011; Lee, Lee, & Carpenter, 2014; Young, 1998). This program increases the number of physicians trained in Hawai‘i, including psychiatrists, through a 12-month pre-medical program that addresses disadvantaged students’ academic and social-emotional needs.

In 1991, UH established the Native Hawaiian Center of Excellence at the John A. Burns School of Medicine. This program has demonstrated on multiple levels its commitment to indigenous people and native knowledge, educating Native Hawaiians in the field of medicine while also conducting research to address and reduce the health disparities affecting this population. In 2002, the Department of Native Hawaiian Health was established to develop a comprehensive program that addresses the health care status of Native Hawaiians through research and education (Izutsu et al., 2012). This department also currently houses other divisions related to Native Hawaiian health and welfare including the Imi Ho‘ōla Program, the Native Hawaiian Center of Excellence, and the Center for Native and Pacific Health Disparities Research. The Imi Ho‘ōla Program has been instrumental in expanding the number of Native Hawaiian psychiatrists (for one Native Hawaiian psychiatrist’s journey, see J. K. Andrade, 2017).

[63] those who seek to heal

To promote the expansion of services to connect people to the resources they need to stay healthy, the Community Health Worker/Health Navigator Certificate Program was established at UH Maui College in 2015 (http://maui.hawaii.edu/communityhealth/). The program recruits trusted members of the community to be vital members of health care or social services teams by providing health education, care coordination, and supportive counseling; as well as helping to improve access to services and ensure that services are culturally appropriate.

There are several community- and school-based pathway programs that support and encourage Native Hawaiians to become healers and/or enter health careers. Peer support workers with lived experience in recovery may be more successful than professionally qualified staff in promoting hope and belief in the possibility of recovery; empowerment and increased self-esteem; self-efficacy and self-management of difficulties; and social inclusion, engagement, and enhanced social networks (Repper & Carter, 2011). Two certification programs, for substance abuse counselors and peer specialists, are operated by the Hawai‘i State Department of Health. Requirements include multicultural competency. The Hawai‘i Certified Peer Specialist program, a program of the Adult Mental Health Division, certifies individuals to provide direct peer-to-peer support services to others diagnosed with mental illness and co-occurring disorders. Peer specialists can use their life experiences to inspire hope and provide support. Their certification requirements include training in cultural differences and beliefs and the role of culture in recovery.

Additionally, a kūpuna[64] workforce for health care (i.e., as navigators for culture, community, and health) can help bridge gaps identified by Native Hawaiians in the existing health care system.

The National Center for Indigenous Hawaiian Behavioral Health (formerly the Native Hawaiian Mental Health Research Development Program; Andrade et al., 1994) was established in 1990 by Dr. Naleen N. Andrade, the first Native Hawaiian female psychiatrist, at the Department of Psychiatry in the UH John A. Burns School of Medicine (Guerrero, 2015; Andrade et al., 1994). The program’s strategic aim and purpose are to develop and conduct a comprehensive program to improve the mental health and well-being of Native Hawaiians through: (a) epidemiological, translational, community-based, clinical, and preventive intervention and neuroscience research; (b) clinician-educator-researcher education and training; and (c) culturally effective diagnostic and treatment protocols (Andrade et al., 1994, 2006). The National Center for Indigenous Hawaiian Behavioral Health has also been instrumental in supporting other teaching, research, and clinical efforts, including those within the Department of Psychiatry. In total, over 100 peer-reviewed journal articles have been published with support from the program (for a list of Department of Psychiatry publications, see N. N. Andrade, 2017; for review article, see Choi-Misailidis & Kaulukukui, 2004). These publications include not only some of the prevalence results reported earlier, but also results related to psychiatric symptoms (e.g., Yuen, Nahulu, Hishinuma, & Miyamoto, 2000) and protective factors (e.g., Carlton et al., 2006).

Collectively, these units, centers, and programs clearly demonstrate the shift toward Native Hawaiians reclaiming their identity and knowledge and utilizing these assets in the perpetuation of their people and culture, and an expansion of training and research programs to increase the workforce of mental health providers and scholars. However, the numbers remain insufficient. (See also Chapter 7: Workforce Development.)

- ❖ Shortages of mental health providers disproportionately impact residents on neighbor islands and other rural communities.

The 2017 Behavioral Health Workforce Planning Meeting was sponsored by the Healthcare Workforce Advisory Board of the Hawai‘i Department of Labor and Industrial Relations. An estimated 153 representatives from education, industry, government, non-profit, and practice sectors were invited to this meeting, and 85 participants attended from more than 50 public and private agencies across the state. Four goals guided the process (see Table 3): (1) Summarize priorities from prior workforce reports that address development of the behavioral health workforce in Hawai‘i; (2) Identify behavioral health workforce needs and recommendations; (3) Prioritize recommendations and explore ways to optimize current resources; and (4) Develop collaborative action plans among participating stakeholders. The group selected ten strategies for action planning, and prioritized next steps. Needs were greatest in rural communities. For example, most of Hawai‘i County, Waimea on Kaua‘i, Hana on Maui, Moloka‘i, and all areas served by community health centers and Papa Ola Lōkahi have been designated Mental Health Professional Shortage Areas (Health Resources and Services Administration, 2017). Therefore, all of

[64] elders

these recommendations are relevant for serving Native Hawaiians and their communities.

Table 3
*Work Force Development Strategic Priorities*

| **FOUR CATEGORIES AND THEIR STRATEGIES** (prioritized by individual and group voting) | |
|---|---|
| **EDUCATION AND TRAINING**<br>• Increase continuing education: using learning collaboratives, distance learning, online training, SBIRT (screening, brief intervention, referral and treatment) training and cultural competency to build behavioral health skills<br>• Expand paraprofessional training (community health worker, case worker, peer counselor, certified nursing assistants, health care navigators, etc.) | **POLICY**<br>• Create statewide group to create feasible plans and share resources across silos to decrease duplication of efforts and implement long term solutions to build the behavioral health workforce<br>• Obtain community input into local needs/resources to balance with workforce statistics to determine the ideal mix of behavioral health workers and share information on resources with community<br>• Create payment reform that encourages care coordination, integration of behavioral health into primary care, screening, brief interventions |
| **COLLABORATIVE PRACTICE**<br>• Integrate behavioral health into primary care (requires education, payment reform, etc., and cooperation among physicians, mental health providers, social care workers, and health care navigators)<br>• Create robust telehealth network | **RECRUITMENT, HIRING, AND RETENTION**<br>• Increase incentives to practice in areas of need-scholarships/loan repayment<br>• Facilitate hiring process (particularly in state system)<br>• Increase payment for behavioral health conditions, especially via Medicaid |

(Condensed from the Behavioral Health Workforce Planning Meeting Report, April 5, 2017.)

Table 3 does not include traditional Native Hawaiian cultural practitioners and kupuna, yet a major part of this chapter has focused on the need for Native Hawaiian cultural approaches. Creating opportunities for well-trained Native Hawaiian cultural practitioners, particularly kūpuna with expertise at the kahuna[65] level and their mo'olono[66] and haumana,[67] to work within a Native Hawaiian health community network, performing their distinct assessments and interventions, is imperative. This would also provide Western-trained clinicians with a grounding and fundamental proficiency in comprehending the application of Native Hawaiian cultural approaches within indigenous Hawaiian communities. Workforce development of this cadre of cultural practitioners is addressed in Chapter 1: Historical and Cultural Perspectives.

❖ Treatment for Native Hawaiians can have lasting effects if the provider uses treatments or skills that are relevant to the beliefs and values of the person being treated.

It is important for mental health and substance abuse treatment providers to be well trained in serving the Native Hawaiian community. This particular community has values and cultural practices that are different from mainstream American values and cultural practices. Among the responses given during our interviews, there emerged a common theme of differentiating Native Hawaiian culture from Western culture. In order for any type of treatment to be optimally effective, treatment providers need to have a solid understanding of the cultural beliefs and values of the persons they treat. Treatment for Native Hawaiian community members may not have lasting or long-term effects if the provider uses treatments or skills that are irrelevant to the beliefs and values of the persons being treated.

[65] master
[66] apprentices who are qualified practitioners
[67] student learners

*ʻĀina*[68]*-based, community-based, ʻohana*[69]*-based, spiritual-based. That's the difference.*

Uncle Wayde Lee
Director/Cultural Practitioner
Wahi Kanaʻaho (A Healing Place for Youth)

- Native Hawaiian practitioners, mental health care providers, community health workers, and educators have direct linkages to appropriate resources that make them essential wellness navigators for the Native Hawaiian community.

It is of vital importance that Native Hawaiian behavioral health programs be initiated and led by Native Hawaiians, as they are stakeholders. Native Hawaiian practitioners, social workers, psychologists, psychiatrists, and educators have direct linkages to appropriate mental health resources which make them essential health navigators for the Native Hawaiian community. Having access to programs implemented by these key leaders will help to encourage use of these valuable resources to improve mental health. Having Native Hawaiians lead programs can also encourage more Native Hawaiian community engagement.

*When you have a well-informed, educated, culturally grounded Hawaiian health professional, that will make the greatest influence in helping a Hawaiian individual change…The Western way wants to know what the Hawaiian understanding is, because they have a template. In Hawaiʻi, for native people, for indigenous Hawaiians, there is another way and perhaps we need to understand the native indigenous way, perspective, to contextualize how Hawaiians not only live, survive in today's world in Hawaiʻi, but also may have a greater understanding of our historical, cultural past that has contributed to our ill state of being. So we should focus on our own traditional concepts of assessment, diagnosis, treatment development, and healing frameworks to help our own people adapt, adjust in Hawaiʻi under a whole set of factors of Western intrusion. The greatest impact is when we use our own heritage, our own cultural practices, rituals, language, proverbs, moʻolelo*[70] *in helping to heal the individual…I've had more success developing that technique…And it's much more powerful.*

Kamanaʻopono Crabbe, PhD
Chief Executive Officer
Office of Hawaiian Affairs

- **Enhance Funding and Resources for Mental Health.**

The vast majority of the promising programs and approaches described in this report were implemented as pilot or demonstration projects with grant funding. While in most cases this allowed for examination of their effectiveness, there is a need to ensure accessibility and availability to all Native Hawaiians through more sustainable forms of funding. This requires funding and resources from multiple sources, including all levels of government, trusts, foundations, and non-profit organizations. We must also recognize that resources expended in one domain (e.g., education) may benefit other areas (e.g., health, justice, labor) many times over and, therefore, a system-wide approach to resources, funding, and cost-benefit analysis is necessary.

- Native Hawaiian community-engaged and culturally based programs led by well-trained providers require funding.

Culturally based programs focused on specific communities are more likely to address the complex, multi-layered challenges and obstacles faced by Native Hawaiians, and are better equipped to form essential relationships to engage their communities in the creation and implementation of prevention and intervention services relevant to their diverse and unique needs. Programs developed by and with Native Hawaiian communities help to establish the necessary stakeholder base for sustainability. However, resources and funding streams are needed to ensure that providers are well-trained and effective programs are maintained.

- More funding and resources in health, education, justice, and other systems are needed to have sustainable effects.

There are insufficient funds and resources to reach all Native Hawaiian communities and provide effective services to improve well-being across the lifespan. Given the multiple determinants of health, it is crucial that resources and financial support not be limited to health. For example, resources to enact education, justice, labor, and economic improvements are also needed to create healthy Native Hawaiian communities. In addition, evidence-based interventions and studies of successful programs that show improved outcome measures set by Native

[68] land
[69] family
[70] stories, history

Hawaiian communities could sharpen the focus of how future funding is directed.

- **Incorporate a Systems Approach that Utilizes the Socioecological Model and Focuses on Long-Term Sustainability.**

When there is a cooperative, interorganizational integration of activities, programs, and services through a network of organizations linked through referrals, case management, and joint programs, Native Hawaiians and their families will experience less fragmentation and enhanced coordination of services, leading to greater efficiency and increased utilization of such services. Integrated systems can provide the full range of health and human services needed by Native Hawaiian communities in a way that focuses on well-being and ensures continuity of care.

- The socioecological model considers the complexity of well-being and mental health, including interdisciplinary factors at various levels: individual, family, social, community, and societal.

A social-ecological systems paradigm accentuates the interactional and relational processes among and between individuals and their social environments, including families, neighborhoods, communities, and society (Bronfenbrenner, 1979). From this perspective, a problem in any member of a family or the community can affect all other members. Furthermore, family and community functioning fluctuate over time, with crises and their resolution, and with various highs and lows that presumably relate to stressors and successes impinging on the system. Emphasizing and building upon community and cultural strengths have been shown to increase resilience, promote healing, and build community-based participatory research among Native Hawaiians (Braun et al., 2006; Perez, 2016). At the societal level, the degree to which equity and social justice exist is reflected in the distribution of resources and magnitude of health disparities. This encompasses a variety of indicators, such as neighborhood living conditions; opportunities for learning and training, community development, and employment opportunities; social cohesion, civic engagement, and collective efficacy; multigenerational trauma and discrimination; health promotion; disease and injury prevention priorities; and health care opportunities (Anderson, Scrimshaw, Fullilove, Fielding, & Task Force on Community Preventive Services, 2003; Kaholokula, 2014; Liu & Alameda, 2011; see also the section on Determinants of Health in the Introduction).

- Effective leadership will be crucial to develop, implement, and evaluate efforts and plans to address mental and behavioral health from a systems and sustainability approach.

The recommendations contained in this chapter, while not all new, can be perceived as revolutionary because they require extensive and comprehensive changes to core conceptualizations within existing systems. Central to the theory of diffusion of innovation is the concept of leadership and decision-making, and the rate of adoption at which point innovation reaches critical mass and becomes self-sustaining (Lee, 2012; Rogers, 1995). The implementation process connects these important stages. From a Native Hawaiian epistemology, this process will need to center on "relationships based on support, generosity and equality; identity as life giving and pre-determined; and blending of Western and Hawaiian knowledge" (Lee, 2012, p. 164). Leadership qualities that have emerged from indigenous systems indicate: (1) shared commitment by leaders to serve their communities by creating positive social change; (2) courage to take risks and take action for and with their communities; (3) recognition that education is key to cultural survival and self-determination; (4) ability to travel across boundaries and bridge relationships with others different from themselves; (5) foresight to envision new possibilities for the future; and (6) sense of balance in their lives, so that their life and work have meaning and purpose (Johnson, Benham, & VanAlstine, 2003). Not surprisingly, these qualities have been emulated by the leaders that have laid the groundwork for improving Native Hawaiian mental health and well-being and advancing the recommendations of the *E Ola Mau* report.

## Conclusion

Some of the recommendations made in this report are similar to those suggested in the original *E Ola Mau* report of 1985, implying that more needs to be done to decrease the health disparities and inequities affecting the Native Hawaiian community. Progress has been hard-won, given the traumatic clash followed by the insidious effects of 240 years of European-American colonialism and oligarchy; the death of over 90% of Hawaii's native population by the early 20th century, followed by robust population growth in the 21st century with a majority of *Hapa-Hawaiians* (Native Hawaiians mixed with one or more immigrant ethnicities); the oppression of Native Hawaiian culture, identity, and mores; and modest to meager economic resources. Continued progress requires sustained will and perseverance spanning the next

generation. Supporting the growth and sharpening the focus of the promising approaches that we reviewed in the previous sections of this chapter are key to the future advancement of Native Hawaiian mental and behavioral health and wellness. Implementation of these recommendations should maintain our progress and result in further significant improvements to the mental and behavioral health of Native Hawaiians. We offer this *mele pale*, a chant for protection and spiritual clearance at the start of a difficult task, calling upon our ancestors to guide our path to the future.

**Nā ʻAumākua**

(Adapted from Native Hawaiian Antiquities by David Malo)

| | |
|---|---|
| Nā ʻaumākua mai ka lā hiki a ka lā kau | *Ancestral guardians from the rising to the setting of the sun* |
| Mai ko hoʻokui a ka hālāwai | *From the zenith to the horizon* |
| Nā ʻaumākua iā ka hina kua, iā ka hina alo | *Ancestral guardians at our back and front* |
| Ia kaʻa ʻakau i ka lani | *At the right side of the heavens* |
| ʻO kiha i ka lani, ʻowe i ka lani | *A whisper in the heavens, a rustling in the sky* |
| Nunulu i ka lani, kāholo i ka lani | *A voice reverberating in the heavens* |
| Eia ka pulapula a ʻoukou ʻo ka poʻe Hawaiʻi | *Here are the descendants, the Hawaiians* |
| | |
| E mālama ʻoukou iā mākou. | *Take care of us* |
| E ulu i ka lani | *That we may flourish in the heavens* |
| E ulu i ka honua | *That we may flourish on earth* |
| E ulu i ka pae'āina 'o Hawai'i. | *That we may flourish in the Hawaiian Islands.* |
| | |
| E hō mai i ka ʻike | *Grant us knowledge* |
| E hō mai i ka ikaika | *Grant us strength* |
| E hō mai i ke akamai | *Grant us intelligence* |
| E hō mai ka maopopo pono | *Grant us the right understanding* |
| E hö mai ka ʻike pāpālua | *Grant us the insight/intuition* |
| E hō mai i ka mana | *Grant us spiritual power* |
| ʻAmama ua noa. | *The prayer is lifted, it is free.* |

# References


Aaronson, A., & Withy, K. (2017). Does Hawai‘i have enough psychiatrists? Assessing mental health workforce versus demand in the Aloha State. *Hawai'i Journal of Medicine & Public Health*, *76*(3 Suppl 1), 15.

Adelson, N. (2000). *"Being alive well": Health and the politics of Cree well-being* (Vol. 16). University of Toronto Press.

‘Aha Kāne. (2017, March). Hale Mua Initiative. Downloaded from: https://www.ahakane.org/events/hale_mua_initiative

Akeo, N. P., Bunyan, E. S., Burgess, K. N., Eckart, D. R., Evensen, S. L., Hirose-Wong, S. M., …Vasconcellos, C. G. (2008). Hui Mālama o ke Kai: Mobilizing to prevent youth violence and substance use with passion, common goals, and culture. *American Journal of Preventive Medicine*, *34*(3S), S67–S71. doi:10.1016/j.amepre.2007.12.013

Alameda, C. K. (2005). *Cultural competency for nursing, sociology, and psychiatry students.* Presentation to the John A. Burns School of Medicine (JABSOM), University of Hawai‘i at Mānoa, Honolulu, HI.

Albright, C. L., Steffen, A. D., Novotny, R., Nigg, C. R., Wilkens, L. R., Saiki, K., ...Brown, W. J. (2012). Baseline results from Hawaii's Nā Mikimiki Project: A physical activity intervention tailored to multiethnic postpartum women. *Women & Health*, *52*(3), 265-291.

Alcohol and Drug Abuse Division. (2016). *Annual Report to the Legislature.* State of Hawai‘i, Department of Health, Alcohol and Drug Abuse Division.

Alicata, D., Schroepfer, A., Unten, T., Agoha, R., Helm, S., Fukuda, M., ...Michels, S. (2016). Telemental health training, team building, and workforce development in cultural context: The Hawaii experience. *Journal of Child and Adolescent Psychopharmacology*, *26*(3), 260-265.

American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., revised). Washington, DC: American Psychiatric Association.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Association.

Anderson, L. M., Scrimshaw, S. C., Fullilove, M. T., Fielding, J. E., & Task Force on Community Preventive Services. (2003). The Community Guide’s model for linking the social environment to health. *American Journal of Preventive Medicine*, *24*(3), 12-20.

Andrade, J. K. (2017). Improving health equity through minority psychiatry trainees: One journey to becoming an academic psychiatrist of indigenous ancestry. *Academic Psychiatry*, *41*(3), 427-429.

Andrade, N. N. (2006, November). *Indigenous Hawaiian ethnocultural identification.* Keynote address at Ku‘i Ka Lono – 2006 Conference: Hawaiian Indigenous Education, Research, and Well-being: “Holomua – Research to Action,” Honolulu, HI.

Andrade, N. N. (2017). National Center on Indigenous Hawaiian Behavioral Health. Retrieved August 21, 2017 from: http://blog.hawaii.edu/dop/research/ncihbh/nhmhrdp/

Andrade, N. N., & Hishinuma, E. S. (2000, July). *Native Hawaiian mental health research development program.* Presentation at the Native Hawaiian Education Association Conference, Kahalui, Maui, HI.

Andrade, N. N., Hishinuma, E. S., McDermott, Jr., J. F., Johnson, R. C., Goebert, D. A., Makini, Jr., G. K., …Waldron, J. A. (2006). The National Center on Indigenous Hawaiian Behavioral Health study of prevalence of psychiatric disorders in Native Hawaiian adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, *45*(1), 26-36. doi.org/10.1097/01.chi.0000184933.71917.f4

Andrade, N. N., Johnson, R. C., Edman, J., Danko, G. P., Nahulu, L. B., Makini, Jr., G. K., …McDermott, Jr., J. F. (1994). Non-traditional and traditional treatment of Hawaiian and non-Hawaiian adolescents. *Hawai‘i Medical Journal*, *53*, 344–347.

Antonio, M. C. K., Ahn, H. J., Ing, C. T., Dillard, A., Cassel, K., Kekauuoha, B. P., & Kaholokula, J. K. (2016). Self-reported experiences of discrimination and depression in Native Hawaiians. *Hawai‘i Journal of Medical and Public Health*, *75*(9), 266-272. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5030789/pdf/hjmph7509_0266.pdf

Baker, K. K. (2013, November). *Suicide ideation, adults: Questions added to the Hawai‘i Health Survey (HHS) by the Adult Mental Health Division.* Honolulu, HI: Office of Health Status Monitoring, Department of Health, State of Hawai‘i.

Baker, R., Camosso-Stefinovic, J., Gillies, C., Shaw, E. J., Cheater, F., Flottorp, S., & Robertson, N. (2010). Tailored interventions to overcome identified barriers to change: Effects on professional practice and health care outcomes. *The Cochrane Database of Systematic Reviews*, *3*, CD005470. doi:10.1002/14651858.CD005470.pub2

Beardslee, W. R., & Knitzer, J. (2004). Strengths-based family mental health services: A family systems approach. In K. Maton, C. Schellenbach, B. Leadbeater, & A. Solarz (Eds.), *Investing in children, youth, families, and communities: Strengths-based research and policy* (pp. 157–171). Washington, DC: American Psychological Association.

Bell, C. K., Goebert, D. A., Andrade, N. N., Johnson, R. C., McDermott, Jr., J. F., Hishinuma, E. S., …Miyamoto, R. H. (2001a). Sociocultural factors influencing adolescent preference and use of Native Hawaiian healers. *Complementary Therapies in Medicine*, *9*, 224–231.

Bell, C. K., Goebert, D. A., Miyamoto, R. H., Hishinuma, E. S., Andrade, N. N., Johnson, R. C., …McDermott, J. F. (2001b). Sociocultural and community factors influencing the use of Native Hawaiian healers and healing practices among adolescents in Hawaii. *Pacific Health Dialogue*, *8*(2), 249–259.

Blaisdell, K. (1989). Historical and cultural aspects of Native Hawaiian health. *Social Process in Hawai‘i, 32*, 1–21.

Blaisdell, K. (2007, January). Inaugural lecture at the Conference on Healing and Wellness: “Bridging Western and Traditional Native Hawaiian Practices,” Ko Olina, O'ahu, Hawai'i.

Blaisdell, K., & Mokuau, N. (1991). Kānaka maoli: Indigenous Hawaiians. In N. Mokuau (Ed.), *Handbook of social services for Asian and Pacific Islanders.* New York, NY: Greenwood Press.

Borowsky, I., Resnick, M., Ireland, M., & Blum, R. (1999). Suicide attempts among American Indian and Alaska Native youth: Risk and protective factors. *Archives of Pediatrics & Adolescent Medicine, 153*, 573-580.Brady, M. A. (1993). Health issues for Aboriginal youth: Social and cultural factors associated with resilience. *Journal of Paediatrics and Child Health*, *29*, S56-S59.

Braun, K. L., Fang, M., Kaanoi, M. E., Kamaka, M. L., & Gotay, C. C. (2005). Testing a culturally appropriate, theory-based intervention to improve colorectal cancer screening among Native Hawaiians. *Preventive Medicine, 40*(6), 619.

Braun, K. L., Mokuau, N., & Browne, C. V. (2010). *Life expectancy, morbidity, and health practices of Native Hawaiian elders: A review of Hawaii surveillance data.* Honolulu, HI: Myron B. Thompson School of Social Work.

Braun, K. L., Tsark, J. U., Santos, L., Aitaoto, N., & Chong, C. (2006). Building Native Hawaiian capacity in cancer research and programing: A legacy of ‘Imi Hale. *Cancer Supplement, 107*(8), 2082-2090.

Braun, K. L., Yang, H., Onaka, A., & Horiuchi, B. Y. (1996). Life and death in Hawai‘i: Ethnic variations in life expectancy and mortality. *Hawai‘i Medical Journal, 55,* 278–283.

Brave Heart, M. (1998). The return to the sacred path: Healing the historical trauma and historical unresolved grief response among the Lakota through a psychoeducational group intervention. *Smith College Studies in Social Work, 68,* 287–305.

Brave Heart, M. (1999a). Gender differences in the historical grief response among the Lakota. *Journal of Health and Social Policy, 10,* 1–21.

Brave Heart, M. (1999b). Oyate Ptayela: Rebuilding the Lakota Nation through addressing historical trauma among Lakota Parents. *Journal of Human Behavior in the Social Environment, 2,* 109–126.

Brave Heart, M. Y. H. (2000). Wakiksuyapi: Carrying the historical trauma of the Lakota. *Tulane Studies in Social Welfare, 21-22,* 245-266.

Brave Heart, M., & DeBruyn, L. (1998). The American Indian Holocaust: Healing historical unresolved grief. *American Indian and Alaska Native Mental Health Research, 8,* 60–82.

Brave Heart-Jordan, M., & DeBruyn, L. (1995). So she may walk in balance: Integrating the impact of historical trauma in the treatment of Native American Indian women. In J. Adleman & G. Enquidanos (Eds.), *Racism in the lives of women: Testimony theory and guides to anti-racist practice* (pp. 345–368). New York: Haworth Press.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design.* Cambridge: The Harvard University Press.

Brooks, E., Spargo, G., Yellowlees, P., O’Neill, P., & Shore, J. (2013). Integrating culturally appropriate care into telemental health practice. In K. M. Myers & C. L. Turvey (Eds.), *Telemental health: Clinical, technical, and administrative foundations for evidence-based practice* (pp. 63-82). Elsevier Press.

Browne, C., Braun, K., Mokuau, N., Kaʻopua, D. L. S., & Higuchi, P. (2011). *Listening to the voices of nā kūpuna and ʻohana caregivers in Hawai ʻi: Discussions on aging, health, and well-being.* Honolulu, HI: Myron B. Thompson School of Social Work.

Browne, C. V., Mokuau, N., Lana, S., Kim, B. J., Higuchi, P., & Braun, K. L. (2014). Listening to the voices of Native Hawaiian elders and ʻohana caregivers: Discussions on aging, health, and care preferences. *Journal of Cross-Cultural Gerontology*, *29*(2), 131-151.

Byrne, P. (2000). Stigma of mental illness and ways of diminishing it. *Advances in Psychiatric Treatment, 6*(1), 65-72.

Byrne, P. (2001). Psychiatric stigma. *The British Journal of Psychiatry, 178*(3), 281-284.

Carlton, B. S., Goebert, D. A., Miyamoto, R. H, Andrade, N. N., Hishinuma, E. S., Makini, G. K., …Nishimura, S. T. (2006). Resilience, family adversity, and well-being among Hawaiian and non-Hawaiian adolescents. *International Journal of Social Psychiatry*, *52*(4), 14-31.

Chan, D. S., Callahan, C. W., Beckham, S., Kishaba, G., Yamamoto, K., Boychuk, R., …Takafuji, E. (2002). Report of the First Hawai’i Annual Research Consortium. *Hawai’i Medical Journal*, *61*, 184-187.

Chandler, S., & Bell, S. (1995). Implementing change for community care for persons with severe mental illness. In R. Schulz & J. Greenley (Eds.), *A culturally sensitive model of mental health care in an ethnically diverse, rural community*. New York: Praeger.

Cheng, T. L., Johnson, S. B., & Goodman, E. (2016). Breaking the intergenerational cycle of disadvantage: The three-generation approach. *Pediatrics*, e20152467.

Choi-Misailidis, S., & Kaulukukui, C. M. (2004). Kukulu i na hulili: Building bridges to the understanding of Native Hawaiian mental health. *Multidisciplinary Research on Hawaiian Well-Being*, *1*(1), 223-239.

Chosy, J., Benson, K., Belen, D., Starr, R., St. John, T. L., Starr, R. R., & Ching, L. K. (2015). Insights in public health: For the love of data! The Hawai‘i Health Data Warehouse. *Hawai'i Journal of Medicine & Public Health, 74*(11), 382.

Chung-Do, J. J., Bifulco, K., Antonio, M., Tydingco, T., Helm, S., & Goebert, D. A. (2016a). A cultural analysis of the NAMI-NH Connect Suicide Prevention Program by rural community leaders in Hawai‘i. *Journal of Rural Mental Health, 40*(2), 87.

Chung-Do, J., Goebert, D., Bifulco, K., Tydingco, T., Wilcox, S., Aea, D., …Alvarez, A. (2015). Mobilizing communities at-risk to prevent youth suicides. *Journal of Health Disparities Research and Practice, 8*(4), 108-123.

Chung-Do, J. J., Goebert, D. A., Bifulco, K., Sugimoto-Matsuda, J., Balberde-Kamali'i, J., Ka'ae, D., ... Walter, L. (2016b). Insights in public health: Safe messaging for youth-led suicide prevention awareness: Examples from Hawai'i. *Hawai'i Journal of Medicine & Public Health, 75*(5), 144.

Chung-Do, J., Helm, S., Fukuda, M., Alicata, D., Nishimura, S., & Else, I. (2012). Rural mental health: Implications for telepsychiatry in clinical service, workforce development, and organizational capacity. *Telemedicine and e-Health*, *18*(3), 244-246.

Chung-Do, J. J., Napoli, S. B., Hooper, K., Tydingco, T., Bifulco, K., & Goebert, D. (2014, August 12). Youth-led suicide prevention in an indigenous rural community. *Psychiatric Times.* http://www.psychiatrictimes.com/cultural-psychiatry/youth-led-suicide-prevention-indigenous-rural-community. Accessed 08/12/2014

Cook, J. R., & Kilmer, R. P. (2004). Evaluating systems of care: Missing links in children's mental health research. *Journal of Community Psychology*, *32*(6), 655-674.

Cook, W. K., Chung, C., Ve'e, T., & Sousa, A. (2010). *Native Hawaiian and Pacific Islander health disparities.* San Francisco, CA: Asian & Pacific Islander American Health Forum.

Corrigan, P. W., Morris, S. B., Michaels, P. J., Rafacz, J. D., & Rüsch, N. (2012). Challenging the public stigma of mental illness: A meta-analysis of outcome studies. *Psychiatric Services, 63*(10), 963-973.

Crabbe, K. M. (1998). Etiology of depression among Native Hawaiians. *Pacific Health Dialogue, 5*(2), 341– 345.

Custodio, R., Gard, A. M., & Graham, G. (2009). Health information technology: Addressing health disparity by improving quality, increasing access, and developing workforce. *Journal of Health Care for the Poor and Underserved, 20*(2), 301-307.

Cutler, J. L., Harding, K. J., Mozian, S. A., Wright, L. L., Pica, A. G., Masters, S. R., & Graham, M. J. (2009). Discrediting the notion "working with 'crazies' will make you 'crazy'": Addressing stigma and enhancing empathy in medical student education. *Advances in Health Sciences Education. Theory and Practice. 14*(4), 487-502.

Dalton, J. H., Elias, M. J., & Wandersman, A. (2007). *Community psychology: Linking individuals and community* (2nd ed). Belmont, CA: Thomson-Wadsworth.

The Data Governance Institute. (2015). Definitions of data governance. Retrieved from http://www.datagovernance.com/adg_data_governance_definition/

DeCambra, C. C., & Lee, W. K. (2011). 'Imi Ho'ola program: Producing primary care physicians for Hawai'i and the Pacific. *Hawaii Medical Journal, 70*(11, Supplement 2), 25–26.

DeCambra, H., Marshall, W. E., & Ono, M. (1998). Ho'omau ke Ola: "To perpetuate life as it was meant to be." In N. Mokuau, L. G. Epstein, G. Pacheco, & J. W. Quinlan (Eds.), *Responding to Pacific Islanders: Culturally competent perspectives for substance abuse prevention* (pp. 73-96). U.S. Department of Health and Human Services: Substance Abuse and Mental Health Services Administration.

DeCambra, H. O., Enos, R., Matsunaga, D. S., & Hammond, O. W. (1992). Community involvement in minority health research: Participatory research in a native Hawaiian community. *Cancer Control Research Reports for Public Health*, 2-9.

Department of Business, Economic Development & Tourism. (2015). 2015 Population Estimate Summary Data [Data file]. Retrieved from http://files.hawaii.gov/dbedt/census/popestimate/2015_state_pop_hi/2015_popest_sumtab.pdf

Duponte, K., Martin, T., Mokuau, N., & Paglinawan, L. (2010). Ike Hawai'i: A training program for working with Native Hawaiians. Retrieved from https://scholarspace.manoa.hawaii.edu/bitstream/handle/10125/15115/v1i1_02duponte.pdf?sequence=1

Freire, P. (1998a). *Pedagogy of the oppressed* (20th-anniversary ed.). New York: The Continuum Publishing Company.

Freire, P. (1998b). *Pedagogy of freedom. Ethics, democracy, and civic courage.* Lanham, MD: Rowman & Littlefield Publishers, Inc.

Frierson, H. T., Hood, S., & Hughes, G. B. (2010). A guide to conducting culturally-responsive evaluations. In J. Frechtling (Ed.), *The 2010 user-friendly handbook for project evaluation* (pp. 75-96). National Science Foundation.

Frison, S. L., Wallander, J. L., & Browne, D. (1998). Cultural factors enhancing resilience and protecting against maladjustment in African American adolescents with mild mental retardation. *American Journal on Mental Retardation, 102*(6), 613-626.

Galinsky, A. M., Zelaya, C. E., Simile, C., & Barnes, P. M. (2017). Health conditions and behaviors of Native Hawaiian and Pacific Islander persons in the United States, 2014. *Vital Health Statistics, 3*(40). Washington, DC: National Center for Health Statistics. https://www.cdc.gov/nchs/data/series/sr_03/sr03_040.pdf

Gill, L.E. (July 24, 2015). Office of Hawaiian Affairs awards $224K to substance abuse and weight treatment program for women. *Pacific Business News.*

Goebert, D., Alvarez, A., Andrade, N. N., Balberde-Kamalii, J., Carlton, B. S., Chock, S., ... & Kaulukukui, G. (2018). Hope, help, and healing: Culturally embedded approaches to suicide prevention, intervention and postvention services with native Hawaiian youth. *Psychological Services*, *15*(3), 332.

Goebert, D., Nahulu, L., Hishinuma, E., Bell, C., Yuen, N., Carlton, B., …Johnson, R. (2000). Cumulative effect of family environment on psychiatric symptomatology among multiethnic adolescents. *Journal of Adolescent Health, 27*, 34–42.

Golden, O., Loprest, P. J., & Mills, G. B. (2012). *Economic security for extremely vulnerable families: Themes and options for workforce development and asset strategies.* Washington, DC: The Urban Institute. http://www.urban.org/publications/412699.html.

Grande, S. M. A. (2004). *Red pedagogy: Native American social and political thought*. Lanham, MD: Rowman & Littlefield Publishers, Inc.

Grandinetti, A., Kaholokula, J. K., Crabbe, K. M., Kenui, C. K., Chen, R., & Chang, H. K. (2000). Relationship between depressive symptoms and diabetes among Native Hawaiians. *Psychoneuroendocrinology, 25*, 239–246.

Grant, H. (2008). American Indians: Working with American Indians and historical trauma. *Illness, Crisis, & Loss, 16*, 125–136.

Griner, D., & Smith, T. B. (2006). Culturally adapted mental health interventions: A meta-analytic review. *Psychotherapy: Theory, Research, Practice, Training, 43*(4), 531-548. doi:10.1037/0033-3204.43.4.531

Guerrero, A. P. (2015). Medical School Hotline: The University of Hawai'i John A. Burns School of Medicine Department of Psychiatry: Past, present, and future. *Hawai'i Journal of Medicine & Public Health*, *74*(2), 63.

Guerrero, A. P., Takesue, C. L., Medeiros, J. H., Duran, A. A., Humphry, J. W., Lunsford, R. M., ... & Hishinuma, E. S. (2017). Primary care integration of psychiatric and behavioral health services: A primer for providers and case report of local implementation. *Hawai'i Journal of Medicine & Public Health*, *76*(6), 147.

Hawai'i Health Data Warehouse. (2016). *Youth Risk Behavior Survey module: Suicide attempts in the past year in Hawai'i, Years 2005-2015.* Honolulu, HI: Hawai'i Health Data Warehouse, Office of Public Health Studies, University of Hawai'i at Mānoa.

Hawai'i State Department of Health. (2008). *Statewide needs assessment of co-occurring substance use and mental disorders for the state of Hawaii; phase I, II, and III – final report* (pp. 24-25).

Hawai'i State Department of Health. (2012). *Hawai'i injury prevention plan: 2012-2017*. Honolulu, HI: Injury Prevention Advisory Committee, Injury Prevention and Control Section, Emergency Medical Services and Injury Prevention System Branch, Department of Health, State of Hawai'i. http://www.sprc.org/sites/default/files/Hawaii_Injury_Prevention_Plan_2012_to_2017_4mb.pdf

Health Resources and Services Administration, U.S. Department of Health and Human Services (2017). Data Warehouse: Health Professional Shortage Areas Find. https://datawarehouse.hrsa.gov/tools/analyzers/hpsafind.aspx

Hébert, J. R., Braun, K. L., Kaholokula, J. K. A., Armstead, C. A., Burch, J. B., & Thompson, B. (2015). Considering the role of stress in populations of high-risk, underserved Community Networks Program Centers. *Progress in Community Health Partnerships: Research, Education, and Action*, *9*, 71.

Helm, S., Kissinger, D., Goebert, D., Agoha, R., Tanabe, R., & Alicata, D. (2016). Child and adolescent telepsychiatry in an academic-community partnership: Providers' perceptions on teamwork. *Journal of Rural Mental Health*, *40*(2), 103.

Helm, S., Okamoto, S. K., Maddock, J., Hayes, D., Lowery, T., & Rajan, R. (2013). Insights in public health: Developing the Ho'ouna Pono Substance Use Prevention Curriculum: Collaborating with Hawaiian youth and communities. *Hawai'i Journal of Medicine & Public Health*, *72*(2), 66.

Helm, S., Okamoto, S. K., Medeiros, H., Chin, C. I., Kawano, K. N., Poa-Kekuawela, K., ...Sele, F. P. (2008). Participatory drug prevention research in rural Hawaii with Native Hawaiian middle school students. *Progress in Community Health Partnerships: Research, Education, and Action*, *2*(4), 307.

Herrman, H., Saxena, S., Moodie, R., & World Health Organization. (2005). *Promoting mental health: Concepts, emerging evidence, practice.* Report of the World Health Organization, Department of Mental Health and Substance Abuse in collaboration with the Victorian Health Promotion Foundation and the University of Melbourne.

Hishinuma, E. S., Chang, J. Y., Sy, A., Greaney, M. F., Morris, K. A., Scronce, A. C., …Nishimura, S. T. (2009). Hui Mālama o ke Kai: A positive prevention-based youth development program based on Native Hawaiian values and activities. *Journal of Community Psychology, 37*(8), 987-1007. doi:10.1002/jcop.20344

Hixson, L., Hepler, B., & Ouk Kim, M. (2012). Native Hawaiian and other Pacific Islander population: 2010. 2010 Census Briefs. Retrieved from http://www.census.gov/prod/cen2010/briefs/c2010br-12.pdf

Hogan, M. F., Sederer, L. I., Smith, T. E., & Nossel, I. R. (2010). Peer reviewed: Making room for mental health in the medical home. *Preventing Chronic Disease, 7*(6).

Ho'omau ke Ola. (2017). http://www.hoomaukeola.org/

Ho'opono Mamo. (2013). Student report. http://manoa.hawaii.edu/durp/files/2016/10/2013_Fall_Hoopono_mamo.pdf

Ho'opono Mamo. (2017). http://www.hooponomamo.org/

Hryb, K., Kirkhart, R., & Talbert, R. (2007). A call for standardized definition of dual diagnosis. *Psychiatry (Edgmont)*, *4*(9), 15.

Huriwai, T., Sellman, J. D., Sullivan, P., & Potiki, T. L. (2000). Optimal treatment for Maori with alcohol and drug-use-related problems: An investigation of cultural factors in treatment. *Substance Use & Misuse, 35*(3), 281-300.

I Ola Lāhui. (2017). *I Ola Lāhui: Rural Hawai'i behavioral health*. Retrieved 8/21/2017 from: http://www.iolalahui.org/index.html

'Imi ke Ola Mau. (2009, May). *Community best practices for cultural base recovery programs.* Paper presented at the first seminar of 'Imi ke Ola Mau, Waimea Valley, Hawai'i.

Insel, T. (2011). Post by former NIMH Director Thomas Insel: The global cost of mental illness. National Institute of Mental Health. Retrieved from: https://www.nimh.nih.gov/about/directors/thomas-insel/blog/2011/the-global-cost-of-mental-illness.shtml

Izutsu, S., Kaholokula, K. J., Lee, W., Mau, M. K., Look, M., Carpenter, D. A., …Coen, L. (2012). Medical School Hotline: The Department of Native Hawaiian Health at the John A. Burns School of Medicine. *Hawaii Journal of Medicine and Public Health, 71*(11), 329–331.

Jimenez, D. E., Bartels, S. J., Cardenas, V., Dhaliwal, S. S., & Alegría, M. (2012). Cultural beliefs and mental health treatment preferences of ethnically diverse older adult consumers in primary care. *The American Journal of Geriatric Psychiatry*, *20*(6), 533-542.

Johnson, V., Benham, M. K., & VanAlstine, M. J. (2003). Native leadership: Advocacy for transformation, culture, community, and sovereignty. In M. K. P. Benham & W. J. Stein (Eds.), *The renaissance of American Indian higher education: Capturing the dream* (pp. 149-166). Mahwah, NJ: Lawrence Erlbaum Associates.

Kaholokula, J. K. (2007, January 24). *Aia i hea ka la'au? Western impact on Native Hawaiian health.* Paper presented at the Healing and Wellness Conference: "Bridging Western and Traditional Native Hawaiian Practices," Ko Olina, O'ahu, Hawai'i.

Kaholokula, J. K. A. (2014). Achieving social and health equity in Hawai'i. In A. Yamashiro & N. Goodyear-Ka'opua (Eds.), *The value of Hawai'i 2: Ancestral roots, oceanic visions* (pp. 254-264). Honolulu, HI: University of Hawai'i Press.

Kaholokula, J. K., Grandinetti, A., Keller, S., Nacapoy, A. H., Kingi, T. K., & Mau, M. K. (2012). Associate between perceived racism and physiological stress indices in Native Hawaiians. *Journal of Behavioral Medicine, 35*(1), 27-37. doi:10.1007/s10865-011-9330-z

Kaholokula, J. K., Iwane, M. K., & Nacapoy, A. H. (2010). Effects of perceived racism and acculturation on hypertension in Native Hawaiians. *Hawai'i Medical Journal, 69*(Supplement 2), 11-15. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3158444/pdf/hmj6905_suppl2_0011.pdf

Kaholokula, J. K. A., Mau, M. K., Efird, J. T., Leake, A., West, M., Palakiko, D. M., ...Gomes, H. (2012). A family and community focused lifestyle program prevents weight regain in Pacific Islanders: A pilot randomized controlled trial. *Health Education & Behavior, 39*(4), 386-395.

Kaholokula, J. K. A., Nacapoy, A. H., & Dang, K. O. (2009). Social justice as a public health imperative for Kanaka Maoli. *AlterNative: An International Journal of Indigenous Peoples, 5*(2), 117-137.

Kamaka, M. L., Paloma, D. S., & Maskarinec, G. G. (2011). Recommendations for medical training: A Native Hawaiian patient perspective. *Hawaii Medical Journal*, *70*(11 Suppl 2), 20.

Kamehameha Schools. (2014). *Ka Huaka'i: Native Hawaiian educational assessment, 2014*. Honolulu, HI: Kamehameha Schools.

Kanahele, G. (1986). *Kū kanaka: Stand tall: A search for Hawaiian values.* Honolulu, HI: University of Hawai'i Press.

Kana'iaupuni, S. M. (2005). Ka 'akālai Kū Kanaka: A call for strengths-based approaches from a Native Hawaiian perspective. *Educational Researcher, 34*(5), 32-38.

Kana'iaupuni, S. M., & Malone, N. (2006). This land is my land: The role of place in Native Hawaiian identity. In J. W. Frazier & E. L. Tettey-Fio (Eds.), *Race, ethnicity and place in a changing America* (pp. 291-305). Binghamton, NY: Global Academic Publishing.

Kana'iaupuni, S. K., Malone, N., & Ishibashi, K. (2005). *Ka Huaka'i: Native Hawaiian educational assessment, 2005.* Honolulu, HI: Kamehameha Schools. http://www.ulukau.org/elib/collect/nhea/index/assoc/D0.dir/book.pdf

Ka'opua, L. S., Braun, K. L., Browne, C. V., Mokuau, N., & Park, C. B. (2011). Why are Native Hawaiians underrepresented in Hawaii's older adult population? Exploring social and behavioral factors of longevity. *Journal of Aging Research*, *2011*. doi: 10.4061/2011/701232

Ka'opua, L. S., Park, S. H., Ward, M. E., & Braun, K. L. (2011). Testing the feasibility of a culturally tailored breast cancer screening intervention with Native Hawaiian women in rural churches. *Health & Social Work, 36*(1), 55–65.

Kassebaum, G., Lau, C. W. S., Kwack, D.-G., Leverette, J., Allingham, E., & Marker, N. (1995a). *Identifying disproportionate representation of ethnic groups in Hawaii's juvenile justice system: Phase One* (Publication #380). Honolulu, HI: Center for Youth Research, Social Science Research Institute, University of Hawai'i at Mānoa.

Kassebaum, G., Marker, N., Lau, C. W. S., Kwack, D.-G., Shera, W., Leverette, J., …Kato, D. (1995b). *Assessing disproportionate representation of ethnic groups in Hawaii's juvenile justice system: Phase Two* (Publication #384). Honolulu, HI: Center for Youth Research, Social Science Research Institute, University of Hawaii at Manoa.

Kawakami, A., Aton, K., Cram, F., Lai, M., & Porima, L. (2007). Improving the practice of evaluation through Indigenous values and methods: Decolonizing evaluation practice – Returning the gaze from Hawai'i and Aotearoa. *Hulili: Multidisciplinary Research on Hawaiian Well-Being, 4*(1), 319-348. Retrieved from http://www.ksbe.edu/spi/hulili/

Keast, R., Mandell, M. P., Brown, K., & Woolcock, G. (2004). Network structures: Working differently and changing expectations. *Public Administration Review, 64*(3), 363–371.

Kekoa, K. (2017). *We are from.* Retrieved Aug 20, 2017 from http://www.pupuaoewa.org/video-2/we-are-from/

Kim, R., Withy, K., Jackson, D., & Sekaguchi, L. (2007). Initial assessment of a culturally tailored substance abuse prevention program and applicability of the risk and protective model for adolescents of Hawaii. *Hawaii Medical Journal, 66*, 118-23.

Kīpuka o ke Ola. (2017). Kīpuka o ke Ola: Native Hawaiian health clinic. An accredited independent rural health clinic utilizing a Patient-Centered Medical Home Model! Retrieved from: http://kipukaokeola.com/index.html.

Komaromy, M., Duhigg, D., Metcalf, A., Carlson, C., Kalishman, S., Hayes, L., ...Arora, S. (2016). Project ECHO (Extension for Community Healthcare Outcomes): A new model for educating primary care providers about treatment of substance use disorders. *Substance Abuse*, *37*(1), 20-24.

Kukutai, T., & Taylor, J. (Eds.). (2016). *Indigenous data sovereignty: Toward an agenda* (Vol. 38). Canberra, Australia: ANU Press.

Lee, M. J. P. (2012). *An examination of the evolution and implementation of Native Hawaiian cultural practices in the treatment of adult substance use or co-occurring mental health and substance use disorders: An organization case study* (Doctoral dissertation). University of Hawai'i at Mānoa, Honolulu, HI.

Lee, W. K., Lee, M. S., & Carpenter, D. A. (2014). Medical School Hotline: Celebrating 40 years of 'Imi Ho'ōla. *Hawai'i Journal of Medicine & Public Health*, *73*(2), 66.

Leininger, M. M., & McFarland, M. R. (2006). *Culture care diversity and universality: A worldwide nursing theory*. Burlington, MA: Jones & Bartlett Learning.

Les Whitbeck, B., Adams, G. W., Hoyt, D. R., & Chen, X. (2004). Conceptualizing and measuring historical trauma among American Indian people. *American Journal of Community Psychology, 33*, 119-130.

Les Whitbeck, B., Chen, X., Hoyt, D. R., & Adams, G. W. (2004). Discrimination, historical loss and enculturation: Culturally specific risk and resiliency factors for alcohol abuse among American Indians. *Journal of Studies on Alcohol, 65*(4), 409-418.

Les Whitbeck, B., Hoyt, D. R., Stubben, J. D., & LaFromboise, T. (2001). Traditional culture and academic success among American Indian children in the upper Midwest. *Journal of American Indian Education, 40*(2), 48-60.

LeVasseur, S. A., & Qureshi, K. (2015). Hawaii's nursing workforce: Keeping pace with healthcare. *Hawai'i Journal of Medicine & Public Health, 74*(2), 45.

Liu, D. M., & Alameda, C. K. (2011). Social determinants of health for Native Hawaiian children and adolescents. *Hawaii Medical Journal, 70*(11 Suppl 2), 9–14.

MacDonald, J. M. (2003). The effect of ethnicity on juvenile court decision making in Hawaii. *Youth and Society, 35*(2), 243-263. doi:10.1177/0044118X03255038

Magnussen, L., Shoultz, J., Oneha, M. F., Hla, M. M., & Brees-Saunders, Z. (2007). Intimate partner violence: Systematic review of literature focused on the cultures of Hawai'i. *Hawaii medical journal, 66*(5).

Magnussen, L., Shoultz, J., Oneha, M. F., Hla, M. M., Brees-Saunders, Z., Akamine, M., ...Wong, E. (2004). Intimate-partner violence: A retrospective review of records in primary care settings. *Journal of the American Association of Nurse Practitioners, 16*(11), 502-512.

Manaseri, H., Uehara, D., & Roberts, K. (2014). Making pono choices: A collaborative approach to developing a culturally responsive teen pregnancy and sexually transmitted infections prevention curriculum in Hawai‘i. *Maternal and Child Health Journal, 18*(10), 2332-2340.

Mare, R. D. (2014). Multigenerational aspects of social stratification: Issues for further research. *Research in Social Stratification and Mobility, 35*, 121-128.

Marsella, A. J., & Yamada, A. M. (2010). Culture and psychopathology: Foundations, issues, directions. *Journal of Pacific Rim Psychology, 4*, 103–115.

Masten, A. S. (2007). Resilience in developing systems: Progress and promise as the fourth wave rises. *Development and Psychopathology, 19*(3), 921-930.

Matsunaga, D., Enos, R., Gotay, C., Banner, R., Decambra, H., Hammond, O., . . . Tsark, J. (1996). Participatory research in a Native Hawaiian community: The Wai‘anae cancer research project. *Cancer, 78*(7), 1582-1586.

Mau, M., Kaholokula, J., West, M., Leake, A., Efferth, J., Rose, C., …Gomes, H. (2010). Translating diabetes prevention into Native Hawaiian and Pacific Islander communities: The PILI ‘Ohana Pilot Project. *Progress in Community Health Partnerships: Research, Education, and Action, 4*(1), 7-16.

McCabe, G. (2008). Mind, body, emotions and spirit: Reaching to the ancestors for healing. *Counselling Psychology Quarterly, 21*(2), 143-152.

McCubbin, L. D., & Antonio, M. (2012). Discrimination and obesity among Native Hawaiians. *Hawaii Journal of Medicine and Public Health, 71*(12), 346-352.

McCubbin, L. D., & Marsella, A. (2009). Native Hawaiians and psychology: The cultural and historical context of indigenous ways of knowing. *Cultural Diversity and Ethnic Minority Psychology, 15*(4), 374.

McFarlane, E., Burrell, L., Duggan, A., & Tandon, D. (2016). Outcomes of a randomized trial of a cognitive behavioral enhancement to address maternal distress in home visited mothers. *Maternal and Child Health Journal, 21*(3), 1-10.

McGregor, D. P. I., Morelli, P., Matsuoka, J., & Minerbi, L. (2003). An ecological model of well-being. In H. A. Becker & F. Vanclay (Eds.), *The international handbook of social impact assessment: Conceptual and methodological advances* (pp. 109-126). Northampton, MA: Edward Elgar Publishing.

Meyer, M. A. (2001). Our own liberation: Reflections on Hawaiian epistemology. *The Contemporary Pacific, 13*(1), 124–148.

Miao, T.-A., Umemoto, K., Hishinuma, E. S., & Smith, M. (2017). *Ho‘opono Mamo: The Hawai‘i Youth Diversion System evaluation report, Year 1, March 16, 2015 – March 15, 2016.* Honolulu, HI: University of Hawai‘i at Mānoa. http://manoa.hawaii.edu/durp/files/2016/10/2013_Fall_Hoopono_mamo.pdf

Minore, B., Boone, M., Katt, M., & Kinch, P. (1991). Looking in, looking out: Coping with adolescent suicide in the Cree and Ojibway communities of northern Ontario. *The Canadian Journal of Native Studies, 11*(1), 1-24.

Mokuau, N. (2002). Culturally based interventions for substance use and child abuse among Native Hawaiians. *Public Health Reports, 117*(Suppl 1), S82-S87.

Mokuau, N., Braun, K. L., & Daniggelis, E. (2012). Building family capacity for Native Hawaiian women with breast cancer. *Health & Social Work, 37*(4), 216-224.

Mokuau, N., Browne, C. V., Choy, L. B., & Braun, K. L. (2008). Using a community-based participatory approach to create a resource center for Native Hawaiian elders. *Education for Health, 20*(3), 1-10.

Mokuau, N., Garlock-Tuiali'i, J., & Lee, P. (2008). Has social work met its commitment to Native Hawaiians and other Pacific Islanders? A review of the periodical literature. *Social Work, 53*(2), 115-121.

Mokuau, N., & Matsuoka, J. (1995). Turbulence among a native people: Social work practice with Hawaiians. *Social Work, 40*(4). 465-472.

Montgomery, D., Miville, M. L., Winterowd, C., Jeffries, B., & Baysden, M. F. (2000). American Indian college students: An exploration into resiliency factors revealed through personal stories. *Cultural Diversity and Ethnic Minority Psychology*, *6*(4), 387.

Morelli, P. T. T., & Fong, R. (2000). The role of Hawaiian elders in substance abuse treatment among Asian/Pacific Islander women. *Journal of Family Social Work, 4*, 33–44. doi:10.1300/J039v04n04_04

Native Hawaiian Health Research Consortium. (1985a). *E ola mau: The Native Hawaiian health needs study.* Honolulu, HI: ALU LIKE, Inc.

Native Hawaiian Health Research Consortium. (1985b). *E ola mau: The Native Hawaiian health needs study: Mental health task force report.* Honolulu, HI: ALU LIKE, Inc. http://www.papaolalokahi.org/images/pdf-files/91985-E-Ola-Mau-The-Native-Hawaiian-Health-Needs-Study-Mental-Health-Task-Force-Report.pdf

Nguyen, D.-H., & Salvail, F. R. (2015). *The Hawai'i Behavioral Risk Factor Surveillance System: 2015 results.* Honolulu, HI: Department of Health, State of Hawai'i. https://health.hawaii.gov/brfss/files/2016/07/brfss15_results.pdf

Office of Hawaiian Affairs. (2010). *The disparate treatment of Native Hawaiians in the criminal justice system.* Honolulu, HI: Office of Hawaiian Affairs. https://19of32x2yl33s8o4xza0gf14-wpengine.netdna-ssl.com/wp-content/uploads/2014/12/ir_final_web_rev.pdf

Office of Hawaiian Affairs. (2017). *Native Hawaiian health fact sheet, 2017.* Honolulu. HI: Office of Hawaiian Affairs. https://19of32x2yl33s8o4xza0gf14-wpengine.netdna-ssl.com/wp-content/uploads/Volume-IV-Health-Status.pdf

Office of Hawaiian Affairs. (2017). The Salvation Army Family Treatment Services – Ola Kino Maika'i. *Ka Wai Ola, 34*(8), 18.

Office of Youth Services. (2016). *Office of Youth Services Annual Reports to the Governor and the Hawaii State Legislature pursuant to section 352D-6, Hawaii Revised Statutes, Act 151, Session Laws of Hawaii 1991, Act 281, Session Laws of Hawaii 2006(1), and Section 367D-8, Hawaii Revised Statutes.* Retrieved from: https://humanservices.hawaii.gov/wp-content/uploads/2017/01/OYS-2016-Reports.pdf

'Ohana Strengthening Program. (n.d.). *Hui Mālama o ke Kai Foundation.* Retrieved from https://www.huimalamaokekai.org/ohana-programming.html

Okamoto, S. K., Helm, S., Po'a-Kekuawela, K. O., Chin, C. I., & Nebre, L. R. H. (2009). Community risk and resiliency factors related to drug use of rural Native Hawaiian youth: An exploratory study. *Journal of Ethnicity in Substance Abuse*, *8*(2), 163-177.

Okamoto, S. K., Kulis, S., Helm, S., Lauricella, M., & Valdez, J. K. (2016). An evaluation of the Ho'ouna Pono curriculum: A pilot study of culturally grounded substance abuse prevention for rural Hawaiian youth. *Journal of Health Care for the Poor and Underserved*, *27*(2), 815-833.

Okihiro, M., Duke, L., Goebert, D., Ampolos, L., Camacho, C., Shanahan, N., ...Kaholokula, J. K. (2017). Promoting Optimal Native Outcomes (PONO) by understanding women's stress experiences. *The Journal of Primary Prevention*, *38*(1-2), 159-173.

Oneha, M. (2001). Ka mauli o ka 'āina a he mauli kānaka: An ethnographic study from a Hawaiian sense of place. *Pacific Health Dialogue*, *8*(2), 299-311.

Oneha, M. F., & Beckham, S. (2004). Re-examining community-based research protocols. *Pacific Public Health*, *11*(1), 102-106.

Oneha, M. F., DeCambra, H. O., Leong, L., Song, H., Quach, T., Chang-Weir, R., ...Kagawa-Singer, M. (2014). Creating community criteria for research participation at community health centers. *AAPI Nexus: Policy, Practice and Community*, *12*(1-2), 1-20.

Oneha, M. F., Magnussen, L., & Shoultz, J. (2009). When does abuse become abuse? *Issues in Mental Health Nursing*, *30*(4), 279-280.

Oneha, M. F., Magnussen, L., & Shoultz, J. (2010). The voices of Native Hawaiian women: Perceptions, responses and needs regarding intimate partner violence. *Californian Journal of Health Promotion*, *8*(1), 72.

Onoye, J. M., Hishinuma, E. S., McArdle, J. J., Zonderman, A. B., Bumanglag, R. J., & Takeshita, J. (2014). Cohort profile: The Hawai'i family study of cognition. *International Journal of Epidemiology*, *43*(6), 1726-1735.

Papa Ola Lōkahi & 'Imi ke Ola Mau. (2007). *A strategic plan for improvement of substance abuse and mental health outcomes for Native Hawaiians, their families and communities.* Retrieved from http://www.amhd.org/Cooccurring/reports/2007%20Policy%20 Academy%20Strategic%20Plan.pdf

Papish, A., Kassam, A., Modgill, G., Vaz, G., Zanussi, L., & Patten, S. (2013). Reducing the stigma of mental illness in undergraduate medical education: A randomized controlled trial. *BMC Medical Education 13*(1), 141.

Patrick, V., Hishinuma, E. S., & Pehm, J. (1999). Trends across two time periods in the diagnosis of substance abuse comorbidity at the Hawaii State Hospital. *Hawaii Medical Journal*, *58*(12), 335-340.

Perez, R. (2016, January 11). Hawaiians at risk: Healing efforts return to roots. *Honolulu Star Advertiser.*

Po'a-Kekuawela, K., Okamoto, S. K., Nebre, L. R. H., Helm, S., & Chin, C. I. (2009). 'A'ole drugs! Cultural practices and drug resistance of rural Hawaiian youths. *Journal of Ethnic & Cultural Diversity in Social Work, 18*, 242–258. PubMed: 20352019

Pokhrel, P., & Herzog, T. A. (2014). Historical trauma and substance use among Native Hawaiian college students. *American Journal of Health Behavior*, *38*(3), 420-429.

Pukui, M. K. (1983). *'Olelo no'eau: Hawaiian proverbs & poetical sayings.* Honolulu, HI: P. B. Bishop Museum.

Pukui, M., Haertig, E., & Lee, C. (1972). *Nānā i ke kumu: Look to the source* (Vols. I and II). Honolulu, HI: Queen Lili'uokalani Center.

Rainie, S. C., Schultz, J. L., Briggs, E., Riggs, P., & Palmanteer-Holder, N. L. (2017). Data as a strategic resource: Self-determination, governance, and the data challenge for Indigenous Nations in the United States. *International Indigenous Policy Journal*, *8*(2). doi: 10.18584/iipj.2017.8.2.1

Rasmus, S. M., Charles, B., & Mohatt, G. V. (2014). Creating Qungasvik (a Yup'ik intervention "toolbox"): Case examples from a community-developed and culturally-driven intervention. *American Journal of Community Psychology*, *54*(1-2), 140-152.

Reeves, W. C., Strine, T. W., Pratt, L. A., Thompson, W., Ahluwalia, I., Dhingra, S. S., ...Morrow, B. (2011). Mental illness surveillance among adults in the United States. *MMWR Surveillance Summaries*, *60*(Suppl 3), 1-29.

Rehuher, D., Hiramatsu, T., & Helm, S. (2008). Evidence-based youth drug prevention: A critique with implications for practice-based contextually relevant prevention in Hawai'i. *Hawai'i Journal of Public Health, 1*(1), 52-61.

Repper, J., & Carter, T. (2011). A review of the literature on peer support in mental health services. *Journal of Mental Health, 20*(4), 392-411.

Reyes-Salvail, F. R., Liang, S., & Gross, P. L. (2009). *Hawai'i BRFSS 2007: Mental health and stigma report.* Honolulu, HI: Hawai'i Department of Health. Available at: http://health.hawaii.gov/brfss/files/2013/11/MentalHealth_Stigma.pdf

Roberts, G., & Holmes, J. (Eds.). (1999). *Healing stories: Narrative in psychiatry and psychotherapy*. New York, NY: Oxford University Press - USA.

Rogers, E. M. (1995). Diffusion of innovations: Modifications of a model for telecommunications. In M. W. Stoetzer & A. Mahler (Eds.), *Die Diffusion von Innovationen in der Telekommunikation. Schriftenreihe des Wissenschaftlichen Instituts für Kommunikationsdienste*, Vol. 17 (pp. 25-38). Berlin, Heidelberg: Springer.

Rouse, M. (2013, March). *Data sovereignty.* Retrieved from http://whatis.techtarget.com/definition/data-sovereignty

Safran, M. A., Mays, Jr., R. A., Huang, L. N., McCuan, R., Pham, P. K., Fisher, S. K., ... Trachtenberg, A. (2009). Mental health disparities. *American Journal of Public Health*, *99*(11), 1962-1966.

Salvail, F. R., & Smith, J. M. (2007). *Prevalence of anxiety and depression among Hawaii's adults derived from HBRFSS 2006.* Honolulu, HI: Department of Health, State of Hawai'i. http://health.hawaii.gov/brfss/files/2013/11/PrevalenceOfAnxietyAndDepression.pdf

Savin, D., Glueck, D. A., Chardavoyne, J., Yager, J., & Novins, D. K. (2011). Bridging cultures: Child psychiatry via videoconferencing. *Child and Adolescent Psychiatric Clinics of North America, 20*, 125–134.

Schaefer-McDaniel, N. J. (2004). Conceptualizing social capital among young people: Towards a new theory. *Children Youth and Environments*, *14*(1), 153–172.

Schmetzer, A., & Lafuze, J. (2008). Overcoming stigma: Involving families in medical student and psychiatric residency education. *Academic Psychiatry, 32*(2), 127-131.

Shore, J. H., Savin, D. M., Novins, D., & Manson, S. M. (2006). Cultural aspects of telepsychiatry. *Journal of Telemedicine and Telecare, 12*, 116–121.

Shoultz, J., Magnussen, L., Kreidman, N., Oneha, M. F., Iannce-Spencer, C., & Hayashi-Simpliciano, R. (2015). Engaging Native Hawaiians and Filipinos in creating supportive and safe violence-free communities for women through a piloted "talk story" intervention: Implications for program development. *Evaluation and Program Planning*, *51*, 78-84.

Shoultz, J., Oneha, M. F., Magnussen, L., Hla, M. M., Brees-Saunders, Z., Cruz, M. D., & Douglas, M. (2006). Finding solutions to challenges faced in community-based participatory research between academic and community organizations. *Journal of Interprofessional Care*, *20*(2), 133-144.

Sia, C., Tonniges, T. F., Osterhus, E., & Taba, S. (2004). History of the medical home concept. *Pediatrics*, *113*(Suppl. 5), 1473–1478.

Sinclair, K. A., Thompson, C., Makahi, E. K., Shea-Solatorio, C., Yoshimura, S. R., Townsend, C. K., & Kaholokula, J. K. (2013). Outcomes from a diabetes self-management intervention for Native Hawaiians and Pacific People: Partners in Care. *Annals of Behavioral Medicine*, *45*(1), 24-32. doi: 10.1007/s12160-012-9422-1

Slavin, L. A., & Suarez, E. (2013). Insights in public health: Project Kealahou—Forging a new pathway for girls in Hawaii's public mental health system. *Hawai'i Journal of Medicine & Public Health*, *72*(9), 325.

Smith, H. W., & Ma, C. (2016). The Daniel K. Inouye College of Pharmacy scripts: Transition from traditional to Western medicine in Hawai'i (Part 2) – Western legislative impacts on traditional medical practices. *Hawai'i Journal of Medicine & Public Health*, *75*(5), 148.

Smith, L. T. (1999). *Decolonizing methodologies: Research and indigenous peoples*. New York, NY: Zed Books Ltd.

Sockalingam, S., Arena, A., Serhal, E., Mohri, L., Alloo, J., & Crawford, A. (2018). Building provincial mental health capacity in primary care: An evaluation of a Project ECHO mental health program. *Academic Psychiatry, 42*(4), 451-457. doi: 10.1007/s40596-017-0735-z. Epub 2017 Jun 7.

Spaulding, W., & Deogun, J. (2011). A pathway to personalization of integrated treatment: Informatics and decision science in psychiatric rehabilitation. *Schizophrenia Bulletin*, *37*(Suppl. 2), S129-S137.

Strategic intention: DHS implementation of 'Ohana Nui. (2016, December 5). Hawai'i Department of Human Services. Retrieved from https://humanservices.hawaii.gov/blog/ohana-nui-kicks-off/

Substance Abuse and Mental Health Services Administration. (2016, August 23). *Healing in Hawaii – The role of culture in addiction recovery*. Retrieved from: https://elbiruniblogspotcom.blogspot.com/2016/09/healing-in-hawaii-role-of-culture-in.html

Sy, A. (2009, July). *Developing a measure of Hawaiian cultural values: Hui Mālama o ke Kai youth wellness programme.* Paper presented at the Aotearoa New Zealand Evaluation Association (ANZEA) Conference, Aotearoa, New Zealand.

Ta, V. M., & Chen, T. (2008). Substance abuse among native Hawaiian women in the United States: A review of current literature and recommendations for future research. *Journal of Psychoactive Drugs, 40*(Suppl. 5), 411-422.

Takeshita, C., & Takeshita, I. (2002). *Hui Mālama o ke Kai: Impact survey results, June 2002.* Waimānalo, HI: Hui Mālama o ke Kai.

Takeshita, C., & Takeshita, I. (2003). *Hui Mālama o ke Kai: Impact survey results, June 2003.* Waimānalo, HI: Hui Mālama o ke Kai.

Thompson, L. M., Jarvis, S., Sparacino, P., Kuo, D., & Genz, S. (2013). Perceptions of health equity and subjective social status among baccalaureate nursing students engaged in service-learning activities in Hawai'i. *Hawai'i Journal of Medicine & Public Health, 72*(10), 339–345.

Tibbetts, K. A. (2016, March). *Preliminary findings: From Wahi Kana'aho youth interviews.* Presentation at the Office of Youth Services, State of Hawai'i, Honolulu, HI.

Trask, H. (1993). *From a native daughter: Colonialism and sovereignty in Hawai'i.* Honolulu, HI: University of Hawai'i Press.

Trask, H. K. (1994). Kupa'a 'Aina: Native Hawaiian nationalism in Hawai'i. In U. Hasager & J. Friedman (Eds.), *Hawai'i: Return to nationhood* (pp. 15-32). Copenhagen, Denmark: International Work Group for Indigenous Affairs.

Trinidad, A. M. O. (2009). Toward *kuleana* (responsibility): A case study of a contextually grounded intervention for Native Hawaiian youth and young adults. *Aggression and Violent Behavior, 14*, 488–498.

Ulukau. (2017). *Culture, innovation and promising directions in Native Hawaiian education.* Retrieved from http://www.ulukau.org/elib/collect/nhea/index/assoc/D0.dir/doc339.pdf

Umemoto, K., Spencer, J., Miao, T.-A., & Momen, S. (2012). *Disproportionate minority contact in the Hawai'i juvenile justice system, 2000-2010: Final report, June 2012.* Honolulu, HI: Department of Urban and Regional Planning, University of Hawai'i at Mānoa. https://humanservices.hawaii.gov/wp-content/uploads/2013/01/DMC-FINAL-REPORT-2012-for-printing.pdf

U.S. Census Bureau. (2000a). *Aloha counts: Census 2000 special tabulations for Native Hawaiians.* http://ulukau.org/elib/collect/census00/index/assoc/D0.dir/doc16.pdf

U.S. Census Bureau. (2000b). *P12, sex by age, Hawai'i.* http://factfinder.census.gov/servlet/DTTable?_bm=y&-context=dt&-ds_name=DEC_2000_SF1_U&-mt_name=DEC_2000_SF1_U_P012&-CONTEXT=dt&-tree_id=4001&-all_geo_types=N&-geo_id=04000US15&-search_results=01000US&-format=&-_lang=en

U.S. Department of Commerce. (2015). *United States Census Bureau quick facts*. Retrieved from http://www.census.gov/quickfacts/

U.S. Department of Health and Human Services. (2017). *Rural health clinics.* Retrieved from: https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/RuralHlthClinfctsht.pdf

VanDenBerg, J., Bruns, E., & Burchard, J. (2003). History of the wraparound process. *Focal Point: A National Bulletin on Family Support and Children's Mental Health – Quality and Fidelity in Wraparound, 17*(2), 4-7.

Werner, E. E. (1993). Risk, resilience, and recovery: Perspectives from the Kaua'i Longitudinal Study. *Development and Psychopathology, 5,* 503-515.

Werner, E. E. (1995). Resilience in development. *Current Directions in Psychological Science, 4*(3), 81-84.

Werner, E. E. (2004). Journeys from childhood to midlife: Risk, resilience, and recovery. *Pediatrics, 114*(2), 492-492.

Werner, E. E. (2013). What can we learn about resilience from large-scale longitudinal studies? In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (2nd ed., pp. 87-102). New York, NY: Springer.

Werner, E. E., Bierman, J. M., & French, F. E. (1971). *The children of Kaua'i: A longitudinal study from the prenatal period to age ten.* Honolulu, HI: University of Hawai'i Press.

Werner, E. E., & Johnson, J. L. (2002). Can we apply resilience? In M. D. Glantz & J. L. Johnson (Eds.), *Resilience and development. Longitudinal research in the social and behavioral sciences: An interdisciplinary series* (pp. 259-268). Boston, MA: Springer.

Werner, E. E., & Smith, R. S. (1982). *Vulnerable but invincible: A longitudinal study of resilient children and youth.* New York, NY: McGraw-Hill.

Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High-risk children from birth to adulthood.* Ithaca, NY: Cornell University Press.

Wexler, L. M., DiFluvio, G., & Burke, T. K. (2009). Resilience and marginalized youth: Making a case for personal and collective meaning-making as part of resilience research in public health. *Social Science & Medicine, 69*(4), 565-570.

Williams, D. (2003). Mele 'ohana. [Recorded by Keali'i Reichel]. On *Ke'alaokamaile* [CD, album]. Makawao, HI: Punahele Productions.

Withy, K. M., Lee, W., & Renger, R. F. (2007). A practical framework for evaluating a culturally tailored adolescent substance abuse treatment programme in Molokai, Hawaii. *Ethnicity and Health, 12*(5), 483-496.

World Health Organization. (2003). *Investing in mental health.* Geneva: Department of Mental Health and Substance Dependence, Noncommunicable Diseases and Mental Health Cluster, World Health Organization. Retrieved from: http://www.who.int/mental_health/en/investing_in_mnh_final.pdf

World Health Organization. (2014a). *Mental health: A state of well-being.* Retrieved from: http://www.who.int/features/factfiles/mental_health/en/

World Health Organization. (2014b). *Social determinants of mental health.* Retrieved from: http://apps.who.int/iris/bitstream/10665/112828/1/9789241506809_eng.pdf

Yellowlees, P., Shore, J., & Roberts, L. (2010). Practice guidelines for videoconferencing-based telemental health. *Telemedicine Journal and e-Health, 16*(10), 1074–1089. doi: 10.1089/tmj.2010.0148.
Young, B. (1998). A history of Imi Hoʻola. *Pacific Health Dialogue, 5*(2), 375–377.
Yuan, S., Vo, H., Gleason, K., & Azuma, J. (2016). *Homeless service utilization report: Hawai'i 2015.* Honolulu, HI: Center on the Family, University of Hawai'i at Mānoa.
Yuen, N. Y. C., Nahulu, L. B., Hishinuma, E. S., & Miyamoto, R. H. (2000). Cultural identification and attempted suicide in Native Hawaiian adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry, 39*(3), 360-367.



# Chapter Three:
# *Medicine*

# Medicine

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**Executive Summary**

***Increased Understanding***

- Prevalence of chronic disease remains higher for Native Hawaiians compared to Hawaiʻi statewide rates.
- Mortality rates for Native Hawaiian babies remain high.
- Early prevention efforts, such as intense lifestyle interventions, can reduce the risk for developing diabetes.
- Research examining the social determinants of health now documents the impact of economic and cultural stressors on our health outcomes.
- Epigenetics has now begun to explain the intergenerational transmission of health risks.
- The impact of climate change and the rapid increase in our elder population provide new challenges for health care in the future.
- Cultural competency and cultural humility among health care providers results in a broader recognition of the importance of a wholistic approach to improving Native Hawaiian health.
- A wholistic approach towards Native Hawaiian health must include place-based and land-based interventions to improve Native Hawaiian spiritual well-being, mental health, and physical health status.
- Western health care functions in silos. Increased communication, collaboration and coordination could remedy this while improving patient experience and population health as well as reduce costs, also known as the Triple Aim approach.
- An organization (such as Papa Ola Lōkahi) would be needed to oversee and be held responsible for the systemic change required in this "Triple Aim" approach.

***Effective and Promising Approaches***

- Evidence for the effectiveness of culturally adapted health interventions exists; much of the information has been the result of Community Based Participatory Research initiatives in partnership with Native Hawaiian communities, the Native Hawaiian Health Care Systems and the University of Hawaiʻi John A. Burns School of Medicine Department of Native Hawaiian Health.
- The Native Hawaiian Health Care Systems have established effective models of service delivery that integrate community outreach and traditional healing practices.
- The Patient-Centered Medical Home Model of primary care, which provides interdisciplinary team-based care coordination, including Case Managers and Community Health Workers, shows promise in addressing the social determinants of health and providing more wholistic, patient-centered, accessible and effective care.
- Place-based and culturally adapted health promotion and disease management interventions tap into the strengths of the Native Hawaiian community.
- Telehealth and technology can help address primary care and specialist provider shortages in medically underserved areas.

***Gaps***

- Data: A complete picture of Native Hawaiian health status is only possible with disaggregated data specific to the Native Hawaiian population, inclusive of Native Hawaiians residing on the continental U.S., specific to all major diseases and disease risks, and inclusive of those who are not accessing medical care.
- Lack of a Native Hawaiian Institutional Review Board which specifically protects the rights and welfare of human subjects involved in Native Hawaiian research projects.

- Access to care: While gains have been made, gaps remain in affordability, availability and acceptability.
- Access to technology: The advantages of telehealth are limited by access to that technology.
- Economic and cultural stressors: High rates of poverty and homelessness and low rates of post-secondary education disproportionately affect our communities. These stressors are strongly linked to health risk behaviors and poor health outcomes.

***Recommendations for Impact***

- **Ensure accurate data are available to assess health risks, status and outcomes.**
- **Expand the availability of disaggregated data.**
- **Support data-sharing agreements among agencies and programs.**
- **Support longitudinal data collection on education and employment, including vocational education.**
- **Further explore genetic influences on disease.**
- **Explore telehealth solutions and other innovative technologies.**
- **Increase understanding of the available technology and how it can be utilized to increase health care access and support community and team-based care.**
- **Draw upon Native Hawaiian traditional practices.**
- **Improve access to care by continuing to improve acceptability of care and integrating traditional healing practices.**
- **Allocate resources for prevention programs aimed at youth and younger adults.**
- **Increase resources to develop and support a Native Hawaiian culturally adapted primary care system:**
  - Inclusive of traditional healing practices.
  - Inclusive of Community Health Workers and patient navigators.
- **Prioritize incorporation of collaborative integrative care approaches as well as cultural competency training in training programs for health care teams.**
- **Increase reliance on community-based health care teams and technology.**
  - These measures also require resources to assist in coordination of team care, data and records such as electronic medical records.
  - Align resources to account for the expansion of telehealth.
  - Ensure that culturally tailored telehealth programs are developed.
- **Increase support for place-based care, incorporating communities and environments in which people live.**

## Introduction

| | |
|---|---|
| O kau ola e ke akua. | *Give life, o god.* |
| E nana mai kau mau pulapula; | *Look to your descendants;* |
| E ola a kanikoʻo, a haumakaʻiole. | *(Give me) life until I walk with a staff, and blear-eyedeyed as a rat,* |
| A palalauhala, a kau i ka puaaneane; | *Yellowed as hala leaves, and reach extreme old age;* |
| Alaila, lawe aku oe iaʻu i ke alo o Wakea. | *Then take me to the presence of Wakea.* |

Ke Pule Nei Kanaka: The People Pray
From *Na Pule Kahiko*
(Gutmanis, 1983)

This traditional pule[1] highlights the desire for a long and fruitful life. It also captures the value of not only using innovation and Western approaches, but also integrating cultural values and community to reduce health disparities among Native Hawaiians and ensure our kūpuna[2] thrive in old age.

The *E Ola Mau* report (Native Hawaiian Health Research Consortium, 1985) documented that Native Hawaiians experience a lower life expectancy than other ethnic groups in Hawaiʻi due to injury, deaths, and chronic diseases including diabetes, heart disease, and cancer. Native Hawaiians had higher rates than

[1] prayer

[2] elders

other racial groups in Hawai‘i of developing risk factors associated with diabetes, heart disease, and hypertension. One explanation for this disparity at the time was that Native Hawaiians seemed to be less knowledgeable than other racial groups about chronic disease symptoms.

The report also revealed a higher prevalence of infant mortality, low birth weight, and congenital abnormalities among Native Hawaiians than other groups. Native Hawaiians had higher rates of teen pregnancy and illegitimate births than other groups. Pregnant Native Hawaiian women received less prenatal care than was recommended.

Although systematic evidence about the utilization of other health services was sparse, the literature suggests that Native Hawaiians received fewer health services. Native Hawaiians appeared to participate less than other groups in health education, health promotion, and screening and referral programs, even when made available, free of charge, to communities with high proportions of Native Hawaiian residents. Furthermore, some Native Hawaiians entered medical treatment at the late stages of disease, often when self-care and traditional practices had not brought sufficient relief. The reasons for under-utilization were thought to stem from lack of accessibility due to financial barriers, and even more importantly, lack of acceptability of services to Native Hawaiians due to cultural differences. Of note, the principal recommendations of this updated report address the need to alter the manner in which health services are delivered.

*When you look at* E Ola Mau – E Ola Mau, *even though it's broad – we're talking about the health of Native Hawaiians. We're also focused because this is the place where funding for Native Hawaiians came from.* E Ola Mau *report was one of the signature documents that informs people.*

Kamahanahokulani Farrar
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Na Pu‘uwai
Native Hawaiian Health Care System

This medical task force report is structured to focus on the five most common health disparities impacting Native Hawaiians: cardiovascular disease, diabetes, obesity, cancer, and asthma as well as disparities associated with maternal and fetal health. The first three will be considered within the context of cardiometabolic health and disease. While we acknowledge the critically important role of the social and cultural determinants of health, much of this report focuses on improving clinical health care for the individual as well as the community. The report begins with our increased understanding of the evidence on, and successful evidence-based interventions to address, cardiometabolic disorders (e.g., obesity, diabetes, and cardiovascular diseases), cancer, asthma, and maternal/infant health. Of particular interest are those interventions that involve culturally adapted programs. Cultural adaptation appears to be a key component in programs that make a significant impact either as interventions or as prevention strategies.

Emerging trends have been identified which we expect will have significant impacts on future health care and health care systems. These include climate change, the rapidly aging population, and implications of epigenetics research that may change how we diagnose and treat disease in the future. We then examine selected promising approaches toward improving Native Hawaiian health. We believe these have the potential to contribute positively to Native Hawaiian health as they address community and cultural approaches to empowerment and health. However, most are programs that have not published findings and results in the traditional sense of Western evidence-based practice standards. Nevertheless, we argue that these interventions show promise and require financial support from governmental and community public health agencies in order to continue or expand their work, positively impact our communities, and eventually produce useful outcomes data.

Next, we address important gaps in the structure of systems, research, resources, and policy that contribute to Native Hawaiian health disparities. Some of these topics are covered in detail in other sections of this report. Each of these gaps is followed by specific recommendations. Finally, we conclude with overarching recommendations for addressing our health care disparities as well as envisioning a Native Hawaiian health care system that is developed for and controlled by Native Hawaiians, is strengths-based, and utilizes our cultural knowledge and values.

## Increased Understanding

- **Prevalence of chronic disease remains higher for Native Hawaiians compared to Hawai‘i statewide rates.**

Since the 1985 *E Ola Mau* report, several studies have reported on the burden of health conditions that plague Native Hawaiians, particularly for chronic diseases. The findings of the past 30 years have generally been consistent with the health disparity revealed by the 1985 *Medical Task Force Report.* As broad indicators of health, Native Hawaiian adults in Hawai‘i have a lower life expectancy and report

overall poorer health (Hawai‘i Health Data Warehouse, 2014; Wu et al., 2017). Sadly, over the last 30 years, Native Hawaiians continue to have higher rates of chronic diseases such as cardiovascular disease, diabetes, and cancer. For example, while work has been done to address health disparities related to cardiovascular disease, Native Hawaiians are still almost 70% more likely to die from cardiovascular disease than Caucasians.

**Cardiometabolic Health and Disease**

The term *cardiometabolic health and disease* is meant to include a variety of clinical abnormalities that are known to cluster together and often manifest as one or more clinical disease states among high-risk populations, including cardiovascular disease and diabetes (Magge, Goodman, & Armstrong, 2017). As a global health issue, the definition of cardiometabolic syndrome, now called MetS, was updated by an international panel of experts in 2006 to facilitate global research efforts and information sharing to address the spectrum of people who are at high risk for MetS (Alberti, Zimmet, & Shaw, 2005). Individuals with MetS can present clinically in a variety of ways, and abnormalities may exist even prior to disease diagnosis. Some of these clinical abnormalities include increased abdominal obesity, hypertension, increased fasting glucose, hypertriglyceridemia, and increased HDL cholesterol (Grandinetti, Kaholokula, Mau, & Chow, 2010). This constellation of metabolic risk factors places people at an increased risk and makes them twice as likely to die from coronary heart disease (CHD) and three times more likely to have a heart attack or stroke, and gives them a five times greater lifetime risk of developing diabetes (Kelli, Kassas, & Lattouf, 2015; Saljoughian, 2016). While the relationship of these risk factors for MetS are generalizable to all populations, the magnitude and thresholds for how each risk factor contributes to health and disease is likely to be varied and diverse. It is well established that MetS is disproportionately increased among Native Hawaiians and other Pacific Islanders (NHOPI) (Mau, Sinclair, Saito, Baumhofer, & Kaholokula, 2009).

Since the last *E Ola Mau* report, several epidemiological studies have firmly established the increased prevalence of all features of MetS among NHOPIs (Aluli et al., 2010; Aluli, Reyes, & Tsark, 2007; Grandinetti et al., 2010; Maskarinec et al., 2009). Of note, a few well-designed studies among a representative sample of Native Hawaiian adults have confirmed that insulin resistance is a fundamental feature of MetS among Native Hawaiians, and this finding is consistent with other studies conducted among other high-risk indigenous populations in the U.S. (Mau et al., 1997; Saad et al., 1991). What remains largely unresolved is the precise underlying cause and mechanism of MetS among NHOPIs resulting in the populational persistence and pervasive disease risk observed.

In addition, several behavioral risk factors have also been associated with an increased risk of developing MetS, such as short sleep duration, increased screen time, dietary factors, decreased physical activity, tobacco smoke exposure, and socioeconomic factors (Magge et al., 2017). The association between MetS and social determinants of health has been successfully demonstrated in indigenous populations with a high burden of chronic disease, and treatment using culturally tailored adapted lifestyle interventions has been successful (Foulds, Shubhair, & Warburton, 2013; Siddiquil, Kurbasic, Lindblad, Nilsson, & Bennet, 2017).

**Cardiovascular disease.**

Cardiovascular disease refers to diseases of the heart and blood vessels, including such incidents as heart attacks and strokes. Cardiovascular mortality has been higher among Native Hawaiians compared to other racial and ethnic groups living in Hawai‘i since 1910 (Aluli, 1962; Aluli, Reyes, & Tsark, 2007). Using data from 2005-2006, Aluli and colleagues examined cardiovascular disease disparities in Native Hawaiians and found that, although statewide mortality from cardiovascular disease was lower compared to the U.S., cardiovascular disease mortality among Native Hawaiians was higher: 313.1 per 100,000, or 52.5% higher than the state, and 9% higher than the country as a whole. More specifically, mortality from coronary heart disease was 67% higher among Native Hawaiians and mortality from stroke was 31% higher compared to the state (Aluli et al., 2007; Aluli et al., 2010). Among the major race groups in Hawai‘i, Native Hawaiians also have the lowest mean age at death from cardiovascular disease (Panapasa, Mau, Williams, & McNally, 2010).

The higher burden of cardiovascular disease among Native Hawaiians is associated not only with higher mortality and morbidity but also with higher costs for medical care and hospitalizations (Benjamin et al., 2018). With this burden borne at younger ages, cardiovascular disease disparities in Native Hawaiians are a public health emergency. The alarming disparity

is also largely related to a high prevalence of preventable cardiovascular disease risk factors, also seen in MetS, including diabetes, obesity, hypercholesterolemia, and hypertension (Galinsky, Zelaya, Barnes, & Simile, 2017; Galinsky, Zelaya, Simile, & Barnes, 2017; Nakagawa, Ito, & King, 2017).

**Type 2 diabetes**.

The American Diabetes Association (2011) defines diabetes as "a group of metabolic diseases" associated with high blood sugars "resulting from defects in insulin secretion, insulin action, or both." Diabetes is the fourth leading cause of death in Native Hawaiians (Johnson, Oyama, LeMarchand & Wilkens, 2004). The prevalence of Type 2 diabetes is higher for Native Hawaiians compared to other racial groups in Hawai'i. Behavioral Risk Factor Surveillance System data indicate that for the years of 2012-2014, 11% of Native Hawaiians and 9% of other Pacific Islanders in Hawai'i reported having diabetes (Hawai'i Health Data Warehouse, 2016). The rate of Type 2 diabetes prevalence for Native Hawaiians is 22%, compared to 3% for Caucasians and 7% for Japanese. Native Hawaiians, on average, are also seven years younger when diagnosed with Type 2 diabetes compared to Caucasians and Japanese, and die from diabetes at a rate of 117 per 100,000 compared to 53 per 100,000 for other racial and ethnic groups (Sinclair et al., 2013). Native Hawaiians also have higher rates of obesity, a known risk factor for diabetes (King et al., 2012; Maskarinec et al., 2009).

There are significant physical, economic, and social costs associated with the huge burden of diabetes. Long-term complications of diabetes include damage to numerous organs including, for example, damage to the heart (heart attacks), eyes (blindness), kidneys (kidney failure), and blood vessels and nerves (poor wound healing and amputations) (American Diabetes Association, 2011). Treatment costs for diabetes can be overwhelming. The cost of care for a diabetic patient requiring dialysis ranges from $60,000 – $80,000 per person per year in Hawai'i (Kataoka-Yahiro et al., 2012). Sentell et al. (2013) examined diabetes-related preventable hospitalizations for working-age Native Hawaiians. Native Hawaiians were hospitalized at a younger mean age (48.2) than other ethnic groups and at rates twice that of Caucasians. In addition, Native Hawaiians had higher mortality rates with the longest average length of stay and the highest percentage of amputations. Hospitalizations involving amputation were more expensive than other diabetes-related hospitalizations including those for uncontrolled diabetes (Guo, Ahn, Juarez, Miyamura, & Sentell, 2015; Sentell et al., 2013) and may be a contributing factor in Native Hawaiians having the highest unadjusted median costs ($9,117) for preventable hospitalizations (Sentell, Ahn, Miyamura, & Juarez, 2015).

Native Hawaiians with diabetes can be subject to stressors such as social prejudice and workplace discrimination. Socioeconomic factors figure heavily when considering barriers to diabetes management. The ability to access and afford healthy foods, whether due to finances, family commitments, or transportation (including commuting distance), and the ability to find safe spaces to exercise, have been found to limit the ability to maintain a healthy lifestyle (Fukunaga, Uehara, & Tom, 2011; McEligot et al., 2010). These are critically important factors in light of the proven benefits of lifestyle changes in treating and preventing diabetes (American Diabetes Association, 2011; Aroda et al., 2015).

A few of the emerging areas of concern include dental complications and impacts on youth. Diabetes increases the risk of dental complications, with diabetic Native Hawaiians having the largest proportion (16.2%) of excess tooth loss (Deguchi, Mau, Davis, & Niederman, 2017). With regards to youth, increasing obesity rates are raising concerns for increased diabetes rates in children (Liu et al., 2009). Better and earlier access to primary care, preventive care, and chronic care management are needed to improve the rates of diabetes in Native Hawaiians (King et al., 2012; Sentell et al., 2013; Sentell et al., 2015).

**Obesity and overweight**.

Although Hawai'i is ranked as the U.S. state with the third lowest prevalence of obesity, 37% of Native Hawaiians in the state are considered obese, with a Body Mass Index (BMI) greater than or equal to 30, compared to only 28% of Caucasians (Galinsky et al., 2017; Galinsky et al., 2017). Native Hawaiian adults have a significantly higher mean BMI compared to Caucasians, with 76-90% of Native Hawaiians and other Pacific Islanders having excess body weight ("overweight" or BMI greater than or equal to 25) (Grandinetti et al., 2007; Kaholokula et al., 2014). Prior to Western contact, Native Hawaiians had very low prevalence of cardiovascular disease and obesity (Bushnell & Veith, 1994).

Western contact and colonization, and the historical cultural trauma that came with them, led to overwhelming changes in social structures and lifestyles which dramatically disrupted the traditional way of life for Native Hawaiians (Anderson et al., 2006; Else, 2004; Fujita, Braun, & Hughes, 2004; Shintani, Beckham, O'Connor, Hughes, & Sato, 1994). The impact on diet is a clear example. The

traditional Hawaiian diet was very healthy and consisted of 75-78% complex starch, 7-12% fat, and 12-15% protein, with a staple food being taro (Kittler & Sucher, 2001). As Native Hawaiians moved to a more Western diet, which consisted predominantly of processed foods, their health changed as well (Fitzpatrick-Nietshmann, 1983; Kittler & Sucher, 2001). The fact that large numbers of Native Hawaiians live in communities that are obesogenic, environments with limited access to healthy food and physical activity options, compounds the problem. Furthermore, Native Hawaiians report being alienated and discriminated against by Western-based medical and public health systems that promote lifestyle recommendations that are not consistent with Hawaiian cultural values (Kaholokula et al., 2017; Oneha et al., 2016; Whitbeck, Adams, Hoyt, & Chen, 2004).

While obesity is preventable through lifestyle modifications including diet and physical activity (Anand et al., 2015; Shen et al., 2015), it continues to be a global burden (Collaborators USBoD, 2013). Among Native Hawaiians, this burden is directly related to poor diets and long-standing overweight and obesity beginning in childhood (Novotny et al., 2012; Oneha et al., 2016). Native Hawaiian and Samoan children have the highest prevalence of obesity compared to children of other racial and ethnic groups living in Hawai‘i, and childhood obesity is associated with health problems that previously were not seen in children, such as the development of Type 2 diabetes (Novotny, Oshiro, & Wilkens, 2013). The national SEARCH for Diabetes in Youth study found that 100% of the Pacific Islander (mostly Native Hawaiian and Samoan) and Asian youth studied with Type 2 diabetes all had BMIs consistent with “adult ethnicity-specific definitions of obesity (Liu et al., 2012, King et al., 2012).”

**Cardiometabolic Health and Disease: Summary and Highlights**

- Compared to other racial and ethnic groups living in Hawai‘i, Native Hawaiians suffer from higher mortality from coronary heart disease, stroke, and diabetes.
- Native Hawaiians have a higher prevalence of diabetes.
- Native Hawaiians develop cardiovascular diseases and diabetes at younger ages.
- Native Hawaiians die from cardiovascular disease at a younger age.
- A key feature in MetS (cardiometabolic disease) in Native Hawaiians is insulin resistance.
- Higher rates of obesity in Native Hawaiians are a major cause of many of these cardiovascular disparities.
- Cardiovascular and diabetes related disparities are a result of a complex interplay of access to care, social determinants of health, and biological and environmental factors.
- Obesity begins in childhood and is associated with increases in childhood diabetes; lifestyle factors such as the post-contact Western diet play an important role.

**Cancer**

In the Native Hawaiian population, as in the U.S. population, cancer is the second leading cause of death. In 2013, 6,700 Hawai‘i residents were diagnosed with invasive cancer, of whom more than 2,200 died (Hawai‘i Tumor Registry, 2016). There are significant variations in both incidence and mortality among Hawai‘i’s five largest racial and ethnic groups; and similarly to the findings in 1985, Native Hawaiians suffer disproportionately from the burdens of cancer. Based on the most recent comprehensive cancer data, Native Hawaiian women have the highest cancer incidence and mortality, and Native Hawaiian men have the highest cancer mortality, as compared to Chinese, Filipinos, Japanese, and Caucasians.

The leading type of cancer in women in Hawai‘i is breast cancer, and Native Hawaiian women have the highest incidence, mortality, and proportion of cases diagnosed at an advanced stage (Hawai‘i Tumor Registry, 2016). The most frequent cancer in men in Hawai‘i is prostate cancer; and although Native Hawaiian men have a relatively low incidence compared to other groups, they have the highest mortality and proportion of cases diagnosed at an advanced stage. Across the state, lung cancer is the leading cause of cancer deaths, and Native Hawaiian men and women both have the highest incidence and mortality as compared to the other racial groups. Despite a lower incidence of colon and rectal cancer in the Native Hawaiian population compared with Japanese and Filipinos, our mortality and number of cases diagnosed at an advanced stage are the highest. Despite a lower incidence of numerous less common cancers such as leukemia, melanoma, and cancers of the bladder, kidney, liver, pancreas, stomach, and uterus, Native Hawaiian women and men consistently suffer from the highest mortality rates.

It is now recognized that cancer disparities exist with respect to incidence, prevalence, morbidity, mortality, survivorship, screening, and stage at diagnosis. Explanations for these disparities are complex and interrelated. Cancer health disparities are associated with access to care, social determinants of health, biological differences, and an interplay between genetic, environmental, and social factors (National Cancer Institute, 2016). Furthermore, lifestyle habits and cultural perceptions contribute to disparity (Polite et al., 2017).

**Cancer: Summary and Highlights**

- Native Hawaiians suffer disproportionately from numerous types of cancer.
- Health disparities exist with respect to cancer incidence, diagnosis at advanced stages, and mortality.
- Cancer disparities result from a complex interplay of access to care, social determinants of health, and biological and environmental factors.

**Asthma**

Asthma is a chronic respiratory illness which causes the airways to constrict and swell, restricting airflow (National Asthma Education and Prevention Program, 2007). More specifically, the Global Initiative for Asthma (2019) defines asthma as "a heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness and cough that vary over time and in intensity, together with variable expiratory flow limitation."

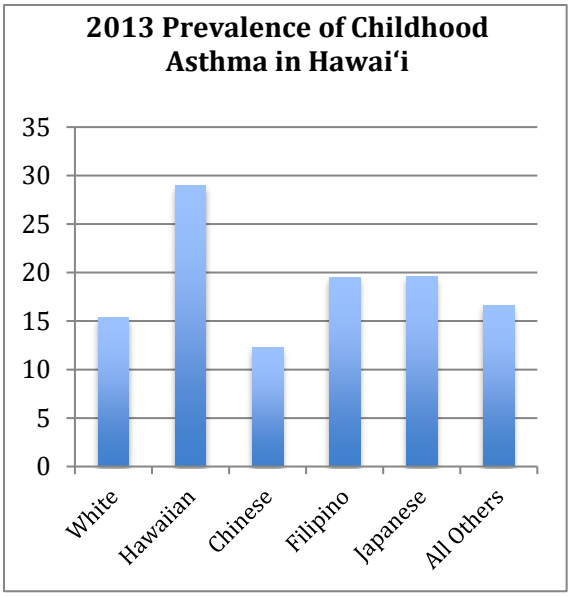
Native Hawaiians have a higher prevalence of asthma compared to both Hawai'i state and national averages, with 28% of Native Hawaiian adults diagnosed with asthma compared to the state average of 16% (Office of Hawaiian Affairs [OHA], 2017) and national average of 7.7% (Centers for Disease Control and Prevention, 2017; OHA, 2017). Hawaii's Behavioral Risk Factor Surveillance System (BRFSS) surveys, conducted among adults living in households with telephones in Hawai'i, indicate that between 2001 and 2010, Native Hawaiians and Other Pacific Islanders (NHOPI) had the highest prevalence of lifetime or current asthma, even after adjusting for age, BMI, educational attainment, smoking status, and survey year (Jessop, Li, Katz, & Hurwitz, 2019). Prevalence rates of lifetime (20.9%) and current (12.2%) asthma among NHOPI adults were at least 60% higher compared to Asian adults, who had the lowest rates of lifetime or current asthma in Hawai'i.

Known risk factors for asthma, including obesity and first- and second-hand exposure to tobacco smoke or nicotine, are disproportionately higher among NHOPI (Centers for Disease Control and Prevention, n.d.; Schweitzer, Wills, Tam, Pagano, & Choi, 2017; Wills, Pagano, Williams, & Tam, 2019). Exposure to tobacco is also linked to increases in asthma symptom frequency and severity, reduced lung function, and reduced efficacy of inhaled corticosteroid medications (Stapleton, Howard-Thompson, George, Hoover, & Self, 2011).

Asthma is one of the most common chronic medical disorders of childhood, affecting about one in every 10 children. Minority children and children living in poverty are more likely than Caucasian children to have asthma and also to have higher rates of emergency department use, hospitalization and mortality (Centers for Disease Control and Prevention, n.d.). It is a leading cause of school absenteeism which is closely linked to poor academic performance (Akinbami, Moorman, Garbe, & Sondik, 2009; Hsu, Qin, Beavers, & Mirabelli, 2016).

Some of the highest rates of childhood asthma in the nation are found in Hawai'i. In 2013, about 20% of Hawai'i children had asthma, while 29% of Native Hawaiian children had asthma (Hawai'i Health Data Warehouse, 2013). A 2002-2003 school-based study of 1,956 Hawai'i Island children (979 part-NHOPI) born between 1992 and 1994 indicated that 20% of NHOPI children had been told by their care provider that they had asthma. Adjusted for sex, BMI, participation in a federal school lunch program, and exposure to environmental tobacco smoke (ETS), volcanic air pollution, and mold, this reflected an adjusted relative risk of 2.54 (95% C.I. 1.61-4.01) compared to Caucasian children, who had a lifetime asthma prevalence rate of 7% (Tachibana, Orr, Davis, Heisman, & Tam, 2019; Tam et al., 2016). In this cohort, NHOPI children had significantly higher rates of obesity (23%), ETS exposure (24%), and participation in the school lunch program (41%) compared to other groups. Interestingly, there was no association between prevalence of lifetime asthma and chronic exposure to volcanic air pollution (vog), a unique local concern due to Kilauea's continuous emission of sulfur dioxide between 1983 and the fall of 2018.

A recent community needs assessment conducted to assess the barriers, impacts, and possible solutions




for improving asthma outcomes among children living along the Wai'anae Coast found:

- The prevalence of asthma was high (38%),
- 48% were considered to have poorly controlled asthma,
- 27% had received at least four courses of oral steroids over the past year, and
- 36% were chronically absent from school (>14 days).

Interview and focus group participants overwhelmingly agreed that childhood asthma took a significant physical, social, emotional, and academic toll on children. The impact extended to families, educators, health providers, and the community (Okihiro, Agustin, Garcia, Prothero, & Goebert, 2017).

*It sucks to watch my kids when they cannot breathe good; it hurts me because I feel helpless. I always have to have their asthma pumps in my bag. Always. We never leave without it… They cannot do what they wanna do as kids – enjoy their childhood – because of asthma.*

Parent of children with asthma
(Okihiro et al., 2017, p. 3)

**Asthma Summary and Highlights**

- ❖ Native Hawaiian adults and children have the highest prevalence of asthma when compared to other racial and ethnic groups in Hawai'i.

**Maternal/Infant Health**

- ❖ **Mortality rates for Native Hawaiian babies remain high.**

Native Hawaiians continue to suffer disproportionately from the poorest maternal and child health outcomes related to infant mortality (Hawai'i Department of Health, 2014) and low birth weight (Hawai'i Health Data Warehouse, 2015). The infant mortality rate among Native Hawaiian babies is more than double that of Caucasians and is a critical indicator of population health – a result of cumulative health impacts on a society's most vulnerable (Hirai, Hayes, Taualii, Singh, & Fuddy, 2013). Leading causes of infant death in Hawai'i are related to preterm birth, other perinatal issues, congenital malformations, sudden unexpected infant deaths, and maternal complications (Hayes, 2016). Infant mortality disparities for Native Hawaiians are primarily linked to inequalities in maternal education level, followed by younger maternal age and smoking (Hirai et al., 2013). Almost half of all births to adolescents aged 15-19 years in Hawai'i are Native Hawaiian compared to 27% of births to mothers of all ages (Hayes, 2016). Smoking in pregnancy is one of the largest health disparities for Native Hawaiian mothers in addition to obesity and low rates of breastfeeding (Hawai'i Health Data Warehouse, 2017). Native Hawaiian mothers, along with Filipino mothers, have the highest rates of preeclampsia in pregnancy (Nakagawa, Lim, Harvey, Miyamura, & Juarez, 2016). Native Hawaiian mothers are likely to use higher-risk infant sleep positions, and less likely to have the economic advantages of a postsecondary education or seek the early prenatal care that has been shown to decrease the risk of preterm births, low birth weights, infant mortality, long-term disability, and developmental delays (Hirai et al., 2013; Schempf, Mendola, Hamilton, Hayes, & Makuc, 2010).

**Maternal/Infant Health Summary and Highlights**

- ❖ Infant mortality is a critical indicator of population health.
- ❖ Mortality rates for Native Hawaiian babies are more than double those of Caucasians.
- ❖ Largest maternal health disparities amongst Native Hawaiian women are smoking, obesity and low breastfeeding which are linked to social determinants of health.
- ❖ Native Hawaiian women are less likely to seek early prenatal care.
- ❖ Native Hawaiian adults and children have the highest prevalence of asthma when compared to other racial and ethnic groups in Hawai'i.

**Emerging Trends**

- **Research examining the social determinants of health now documents the impact of economic and cultural stressors on our health outcomes.**

Social determinants of health have been recognized as critical factors in health and well-being. Social determinants of health are the societal, political, and economic forces that influence the social structure, hierarchy, and distribution of power, resources, and opportunities in society (Native Hawaiian Health Task Force & Kaholokula, 2016). These differential conditions include the presence or absence of discrimination in employment, education, housing, and health care; and whether one has a livable wage or lives in a safe neighborhood. A detailed description may be found in the Introduction chapter.

**Social Determinants of Health Summary and Highlights**

- Social determinants of health (societal, political, economic forces) are critical factors in health and well-being.
- Disparities around the social determinants of health must be addressed in order to achieve true health and well-being.

- **Epigenetics has begun to explain the intergenerational transmission of health risks.**

Deoxyribonucleic acid (DNA) is a fundamental building block of genes that provides instructions for making all parts of the human body. DNA and genes make up what is called the genome, which is identical in all cells of an individual; however, DNA is only part of the story. In cells, DNA is wrapped around special proteins that together make up chromatin. Both the DNA and these proteins are naturally covered with biochemical tags collectively known as an epigenome. Different cells in the body have different epigenomes, even though the DNA remains the same. Although one's genome is fixed for life, epigenomes are flexible and respond to signals from the environment, such as diet and stress. They turn genes on or off and instruct which parts of the DNA are recognized and used in the cell (Maunakea, Chepelev, Cui, & Zhao, 2013). They are regulated by processes, called epigenetics, which influence fundamental cellular activities including gene transcription and DNA replication and repair.

A number of environmental factors can influence epigenetic patterns, lead to a substantial degree of variation, and contribute to one's susceptibility to disease (Maunakea, Chepelev, & Zhao, 2010). For example, cancer risk may be decreased by turning on genes that may be protective of normal cell activities. Based upon this body of knowledge, treatments can be implemented using environmental factors, such as certain nutrients in a diet, to decrease an individual's susceptibility to diseases.

The extent to which epigenetic variability between individuals of different ethnic groups or populations accounts for health disparities, as in cancer and cardiometabolic diseases, remains largely unexplored. Recent technological advances, however, make it possible to address this question in clinical and community-based studies, suggesting that epigenetics play an important role in health disparities (Corley et al., 2016). While social determinants of health, sustainability, and environmental justice are all intimately linked with health disparities, epigenetic mechanisms present a critical interface between these extrinsic factors and an individual's risk of disease throughout the lifespan, with potential influences on trans-generational health (Lepule, 2014; Look, Trask-Batti, Agres, Mau, & Kaholokula, 2013). Therefore, an increased understanding of the involvement of epigenetic processes in normal development and disease is essential for a more comprehensive perspective on the etiology of health disparities. In addition to genetic data, epigenetic information can be viewed as a promising nexus of health care, measuring individual risk for disease and offering new avenues for risk stratification, early disease detection, diagnosis, treatment, and most importantly, prevention.

**Epigenetics Summary and Highlights**

- An epigenome exists and is impacted by environmental factors.
- Epigenetics may play a significant role in health disparities.
- Based upon knowledge of epigenetics, environmental changes can be used to improve health outcomes.

❖ **The impact of climate change and the rapid increase in our elder population provide new challenges for health care in the future.**

Climate change is anticipated to have significant negative impacts on Hawaii's health, economy, and environment. Scientific findings confirm that Hawai'i is experiencing increasing air temperature, decreasing trade winds, overall decline in rainfall, decreasing stream base flow, increasing sea surface temperatures, increasing ocean acidity, and rising sea level (University of Hawai'i at Mānoa Sea Grant College Program, 2014). As a result, coastal inundation, erosion and consequent hazards, beach loss, increasing damage to infrastructure in low-lying areas, and increasing frequency and intensity of tropical cyclones (hurricanes) are expected if not already occurring.

Subsequent public health threats forecast by the University of Hawai'i at Mānoa Sea Grant College Program (2014) involve increases in heat-induced illnesses, pathogens, and vector-borne diseases, as well as decreases in water quality and availability due to drought. Certain groups in Hawai'i are especially vulnerable, including children, the elderly, the sick, and the poor (United States Environmental Protection Agency, 2016). Native Hawaiians continue to be overrepresented in morbidity, poverty, adult and child disability, homelessness, overcrowded households, and structurally inadequate housing, and will be particularly susceptible to climate change-related health impacts (Hawaiian Community Assets, 2015; United States Department of Education, 2013; Look et al., 2013; Pobutsky, Hirokawa, & Reyes-Salvail, 2003).

**Climate Change Summary and Highlights**

❖ Due to socioeconomic conditions, Native Hawaiians are expected to bear an even greater health burden from climate change-related increases in heat-induced and vector-borne illnesses, rising sea levels, and infrastructure damage due to storms and erosion.

**Aging Population**

The year 2030 will mark a significant milestone for the country. By 2030, all baby boomers will have reached age 65 or older; consequently, in that year, one in five Americans will be 65 or older, up from one in seven in 2014 and one in seventeen in 1970 (Colby & Ortman, 2014). Hawaii's population is rapidly aging, and the elderly population in Hawai'i is growing at a faster pace than in the U.S. as a whole. Elders aged 60 and older made up 11.9% of the population in 1980. By 2010, that percentage had almost doubled to 21.4%. Of note, between 2000 and 2010 the growth rate for our elders aged 60 years and older was 10% higher than the national rate of growth for this age group, and it is estimated that this age group will make up 25% of Hawaii's population by 2020 (Hawai'i Department of Health, 2019). Recent census figures show a 25% increase in elders aged 65 and older between 2010 and 2016 ("Census: Hawaii's Older Population," 2017). In addition, Hawai'i's oldest elders, aged 85 and over, made up only 0.6% of the population in 1980 and now make up 2.3% of the population, and their growth rate from 2000-2010 was 72%. In comparison, nationally, this "oldest old" group makes up just 1.9% of the U.S. population, and their national growth rate was 29.4% during this same period (Hawai'i Department of Health, 2017; Yuan, Karel, & Yuen, 2007).

By 2035, it is estimated that those 60 and older will make up 29.7% of Hawaii's population. Of concern is that the percentage of working population (aged 19-64) is decreasing as compared to the elderly population as seen in the population age distribution structure – changing from that of a pyramid to one more closely resembling a square. In other words, by 2035 all age brackets will be coming closer in number (Hawai'i Department of Health, 2017; Yuan et al., 2007).

Native Hawaiians, in 2008, made up 13.2% of the state population of those aged 60-74 and 9.0% of those over 75 years of age (Hawai'i State Department of Health, 2017). While older adults in Hawai'i are generally healthier than they were in previous generations, significant disparities exist for Native Hawaiians, who are dying at younger ages than those in other ethnic groups. As depicted in Figure 1, life expectancy continues to be about 10 years shorter for Native Hawaiians (76.6 years) compared to Japanese and Chinese, and death rates before 70 are higher compared to Japanese, Filipino, and Caucasians (Braun, Kim, Ka'opua, Mokuau, & Browne, 2015; Wu et al., 2017).

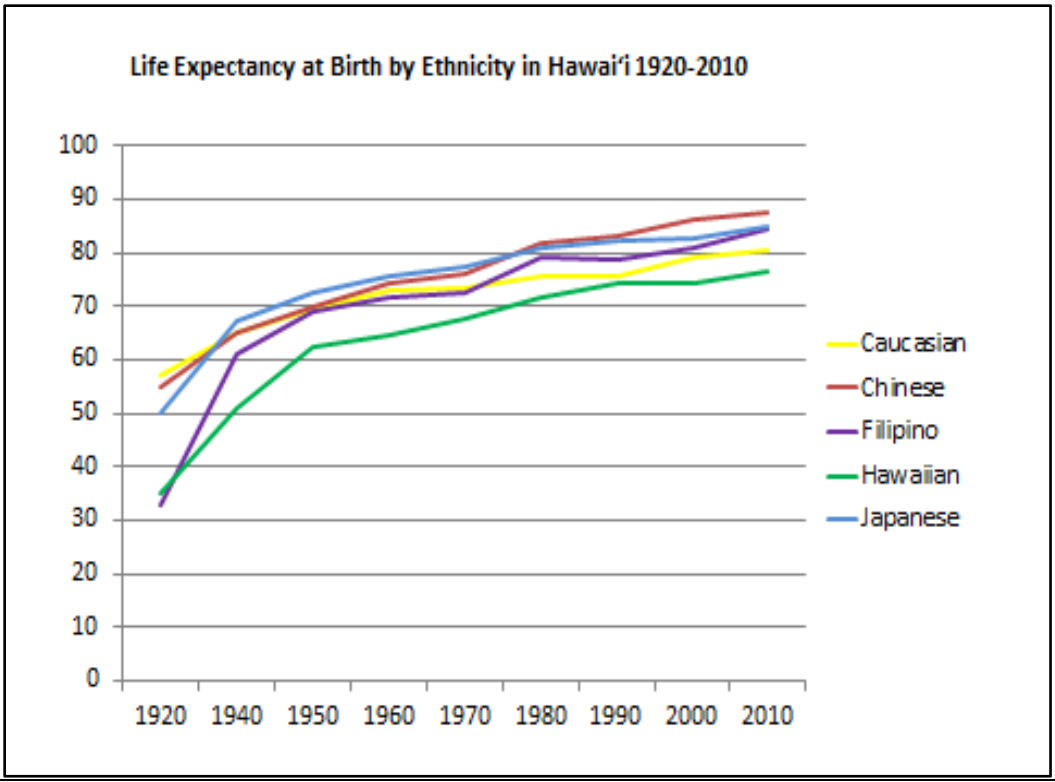



*Figure 1.* Life expectancy at birth by ethnicity in Hawai'i, 1920-2010.
(Public Health Reports / July–August 2009 / Volume 124 and
Hawai'i Journal of Medicine and Public Health, January 2017, Vol 76, No1.)

Considering the overall increase in the percentage of the elderly population and the inevitable increase in chronic disease, the associated health care resource use could be staggering. Compound this with a Native Hawaiian population with increased chronic diseases and poorer socioeconomic status, and careful planning and strategizing will be required to ensure that health and service needs are met.

**Aging Summary and Highlights**

- The population of elders in Hawai'i is rapidly increasing.
- Careful planning is needed to prepare for increased need for services.
- Native Hawaiian elders continue to be affected by health disparities and lower life expectancy.

In reviewing our increased understanding of persistent disparities affecting Native Hawaiian health, and emerging trends related to health outcomes and challenges, the following themes emerge:

- **Cultural competency and cultural humility among health care providers results in a broader recognition of the importance of a holistic approach to improving Native Hawaiian health.**
- **A wholistic approach towards Native Hawaiian health must include place-based and land-based interventions to improve Native Hawaiian spiritual health, mental health, and physical health status.**
- **Western Healthcare functions in many separate silos. Increased communication, collaboration and coordination could remedy this while improving patient experience and population health as well as reduce costs, also known as the Triple Aim approach.**
- **An organization (such as Papa Ola Lōkahi) would be needed to oversee and be held responsible for the systemic change required in this "Triple Aim" approach.**

## Effective and Promising Approaches

This section includes reviews of some of the effective evidence-based approaches that have proved successful in addressing the previously mentioned health disparities affecting the Native Hawaiian population, and also includes a discussion of promising approaches.

- **Evidence for the effectiveness of culturally adapted health interventions exists; much of the information has been the result of Community Based Participatory Research initiatives in partnership with Native Hawaiian communities, the Native Hawaiian Health Care Systems (NHHCS) and the University of Hawaii John A. Burns School of Medicine Department of Native Hawaiian Health.**
- **The NHHCS have established effective models of service delivery that integrate community outreach and traditional healing practice.**

### Cardiometabolic Health and Disease

In order to address cardiovascular disease disparities, Papa Ola Lōkahi (POL), the Native Hawaiian Health Care System (NHHCS), Native Hawaiian communities, and the Department of Native Hawaiian Health at the University of Hawai‘i John A. Burns School of Medicine have worked together to improve cardiovascular and diabetes outcomes and risk; and more effectively manage hypertension, diet, obesity, and physical activity through community-based participatory research approaches, community-generated and culturally relevant disease management and health promotion interventions, and partnerships and resource-sharing initiatives. In addition to these research-focused efforts, the NHHCS on the various Hawaiian Islands continue to develop and conduct community health promotion programs that focus on lifestyle modification. The training of Community Health Workers (CHWs) at each of the Native Hawaiian Health Care Systems and partnerships with Native Hawaiian Health Scholars (recipients of scholarships distributed by POL) have promoted this effort to reduce cardiovascular disease risk among Native Hawaiians.

Early disease management efforts, including the Staged Diabetes Management program implemented through a partnership between POL and the International Diabetes Center of Minneapolis, determined that improving outcomes for Native Hawaiians would require integrating resources and services to support patient behavior change and adapting the health care system to local community resources (Humphry & Reinhardt, 1998). Diabetes prevention and control initiatives, including the Pacific Diabetes Today Resource Center (PDTRC), a federally funded project of POL, were established to improve local capacity to address diabetes and work with communities to develop and deliver programs and activities. The PDTRC served Native Hawaiian homestead populations in Wai‘anae and Native Hawaiian communities on Maui and Moloka‘i, resulting in the creation of local coalitions and support groups (Aitaoto, Braun, Ichiho, & Kuhaulua, 2005).

More recent disease management and health promotion efforts include:

1. Partnership for Improving Lifestyle Intervention (PILI) ‘Ohana Project: The PILI ‘Ohana Project is a federally funded community-academic partnership that utilizes community-based participatory research principles to culturally adapt lifestyle and diabetes self-management programs for Native Hawaiian and other Pacific Islander communities. The partnership involves a university; two community health centers; one non-profit Native Hawaiian health care system; and two community groups, a Hawaiian civic club and a non-profit group based in a Hawaiian homestead community (Kaholokula et al., 2014).
    a. The PILI ‘Ohana Lifestyle Intervention project, a pilot project out of the PILI ‘Ohana project, was developed for Native Hawaiians after conducting focus groups and key informant interviews. This project was inspired by the findings from the national Diabetes Prevention Program Lifestyle Intervention (DPP-LI) program. The program showed that intense lifestyle intervention could reduce risk for developing diabetes as well as if not better in certain situations than medication (Aroda et al., 2015; Diabetes Prevention Program Research Group, 2009). The DPP-LI was the first national clinical trial to demonstrate that modest weight loss (5-7% weight loss) could prevent or postpone Type 2 diabetes onset. The PILI ‘Ohana Lifestyle Intervention pilot program focused on weight loss and was found to be feasible and effective. Participants showed a mean weight loss of 1.8 kg. In addition, improvement was seen in physical functioning, blood pressure, and diet. This project involved a close, collaborative partnership between the university and multiple communities (Mau et al., 2009; Mau et al., 2010).
    b. The PILI project expanded into to the PILI Lifestyle Program which featured a three-month weight loss program (Phase 1) with a six-month weight loss maintenance program

(Phase 2). Phase 2 focused on building social supports within the family and community. Adaptations involved input from focus groups, surveys, key informant interviews, and windshield tours, as well as consideration for culturally relevant diet and physical activities, and inclusion of local, vernacular terminology into educational material. The PILI Lifestyle Program showed success in weight loss (≥3%) as well as weight loss maintenance.

c. Since then, the PILI Lifestyle Program has expanded to an 18-month maintenance program and a 12-month "PILI@work" program (Kaholokula et al., 2014). Factors associated with the program's success include engagement of family and community supports and resources in the intervention, such as group facilitators from within the community. Of note, the study found that weight loss in the first three months was predictive of increased success at maintaining this weight loss at the 18-month follow-up (Kaholokula et al., 2013).

2. Partners in Care: Partners in Care is a culturally adapted, community-based diabetes self-management intervention for Native Hawaiians and other Pacific Islanders that is also part of the federally-funded PILI 'Ohana Project. The goal of the program is to reduce diabetes complications by improving patient understanding and self-management activities using peer educators. Adaptations to increase cultural relevance include educational sessions that are group oriented, led by Native Hawaiian community members, include a storytelling component, allow for group sharing, and feature local language and food. The program is low-tech and requires few healthcare resources. Results of a randomized controlled study of Partners in Care showed improvement in HbA1c and increased understanding and performance of diabetes self-management (Sinclair et al., 2013).
3. Stanford Chronic Disease Self-Management Program and Diabetes Self-Management Program. Through the efforts of the Hawai'i Healthy Aging Partnership, Hawai'i has also shown that both the Stanford Chronic Disease Self-Management Program and the Diabetes Self-Management Program can improve the health of Asian and Pacific Islanders (Tomioka, Braun, Ah Cook, Compton, & Wertin, 2014; Tomioka, Braun, Compton, & Tanoue, 2012). In these efforts, program evaluators noted the importance of culture and context, and the need to adapt evidence-based interventions to fit Native Hawaiian communities and ensure that the programs are both acceptable and effective. Programs modified to increase their cultural appropriateness resulted in significant improvements in communication with physicians, stretching and strengthening activities, and self-rated health (Tomioka et al., 2012), and significant improvements in physical activity, self-efficacy, BMI, HbA1c, total cholesterol, triglycerides, LDL, fasting blood glucose, and blood pressure. The culture-specific modifications did not affect the fidelity of the programs, but were critical for local acceptance and participant engagement (Tomioka et al., 2014).
4. The Kā HOLO project is a six-year federally funded research project utilizing community based participatory research and culturally based interventions to improve cardiovascular disease in Native Hawaiians (Kaholokula, Look, Wills, de Silva, Mabellos, & Seto, 2017).
   a. A pilot study, called Ola Hou i ka Hula, demonstrated that hula, the traditional dance of Hawai'i, can be used as a culturally relevant physical fitness activity to lower blood pressure. Of note, the METs (metabolic equivalents) achieved in hula can range from moderate to intense activity. This is important as increased physical activity is comparable to decreasing sodium intake and losing weight in terms of reducing blood pressure, ultimately decreasing risk of coronary heart disease and stroke (Kaholokula, 2015). Native Hawaiians frequently have difficulty engaging in the usual recommended fitness regimens due to socioeconomic barriers, and may find individual activities less appealing. Studies have shown that Native Hawaiians prefer culturally relevant physical activities that are consistent with their cultural values, such as activities that are group-based, are more holistic, and connect them to culture (Kaholokula, 2015; Maskarinec et al., 2015; Mau et al., 2009). The Ola Hou i ka Hula pilot study was able to demonstrate significant decreases in systolic blood pressure (decrease of 18.3 mmHg compared to a control decrease of 7.6 mmHG) as well as improved social functioning and decreased bodily pain (Kaholokula, 2015).
   b. Kā HOLO expanded this study into a larger intervention study funded by the National Institutes of Health. The program may be "easily adopted and sustained in any community where Native Hawaiians live" (Kaholokula et al., 2017).

Programs that have demonstrated success in reducing the burden of obesity and the downstream sequelae of obesity in Native Hawaiian communities have included the incorporation of foods eaten in Hawai‘i before the onset of Western influence – the Traditional Hawaiian Diet – as well as a transition-style diet that integrates traditional Hawaiian foods and modern food alternatives. Programs utilizing both diets have drawn upon Hawaiian values such as communal and family involvement, cultural activities, and spirituality (Fujita et al., 2004; Shintani et al., 1994). The first landmark study was The Moloka‘i Diet Study in 1987 which demonstrated that Native Hawaiian patients given the Traditional Hawaiian Diet, with the traditional ratios of carbohydrates, protein, and fats, were able to lower their glucose and cholesterol levels. Another diet modification or targeted lifestyle modification program set in the Native Hawaiian community was the Wai‘anae diet program (WDP) conducted in 1994, which also proved successful in promoting weight loss. It was subsequently adapted to accommodate foods from various cultures. Both programs demonstrated the importance of culturally relevant and community-generated approaches to developing lifestyle modification programs in Native Hawaiian communities (Fujita, et al., 2004; Shintani et al., 1994). Other programs in Native Hawaiian communities that have demonstrated reductions in risk for obesity and the associated cardiovascular disease outcomes include the Ke ‘Ano Ola project, which incorporated cultural and community-based methods to reduce obesity and other cardiovascular disease risk factors among Native Hawaiians (Gellert, Aubert, & Mikami, 2010).

In summary, efforts to reduce obesity and improve cardiovascular disease and diabetes outcomes among Native Hawaiians have demonstrated success through the incorporation of cultural components including family and community social supports, culturally relevant diet and physical activities, and culturally adapted health education materials. Community-based participatory research approaches can support communities in improving their health, as can culturally appropriate methods of program development and community-based interventions with special consideration for accessibility, reasonable cost, and sustainability in the community.

**Cardiometabolic Health and Disease Summary and Highlights**

- Efforts to reduce cardiometabolic risk factors and related disease outcomes among Native Hawaiians have demonstrated success through the incorporation of cultural components, including family and community social supports, culturally relevant diet and physical activities, and culturally adapted health education materials.
- Community-based interventions, including community-based participatory research approaches, can support communities in improving their health, as long as culturally appropriate methods of program development are included and special consideration is given to accessibility, reasonable cost, and sustainability in the community.

**Cancer**

Culturally adapted evidence-based interventions may have the potential to improve cancer outcomes for the Native Hawaiian population, considering the successes of such interventions with cardiovascular disease, obesity, and Type 2 diabetes. Although there are no outcomes data at this time, a feasibility study of a culturally tailored breast cancer screening intervention with rural Native Hawaiian women called Ka Lei Mana‘olana (“The Lei of Hope”), based in Hawaiian churches, showed increased retention and intent to pursue mammograms among participants (Ka‘opua, Park, Ward, & Braun, 2011). Culturally adapted educational programs also show promise, as demonstrated by the success of a project designed to build family capacity in women with breast cancer and their families, which resulted in improved self-efficacy and coping (Mokuau, Braun, & Daniggelis, 2012).

**Cancer Summary and Highlights**

- Culturally tailored cancer screening interventions can be effective with Native Hawaiians.
- Culturally tailored support programs improve self-efficacy and coping in Native Hawaiian breast cancer patients.

**Asthma**

Effective asthma management strategies include proper medical assessment and monitoring, patient education, control of environmental triggers, and medication adherence (National Asthma Education and Prevention Program [NAEPP], 2007). In addition to these known management strategies, the use of home remedies and cultural practices are well documented in the literature and need to be considered within our population (Bearison, Minian, & Granowetter, 2002; Horky, Kleinman, & Firth, 2007; Van Sickle, Morgan, & Wright, 2003; Van Sickle & Wright, 2001).

Since 1985, efforts have been made to address asthma among Native Hawaiians through collaborative workgroups and coalitions, including the Hawai‘i Asthma Initiative and Partners Against Asthma, which developed and disseminated an asthma education curriculum statewide in Hawai‘i. The community-friendly, low-tech asthma education material provides participants with information on asthma, asthma triggers, asthma symptoms, and management strategies, and the materials can be delivered in small and large group settings.

A pilot project at Wai‘anae Coast Comprehensive Health Center (WCCHC) also designed and tested a community-based asthma intervention focused on patient education, using Community Health Workers to provide culturally adapted in-home health education. The intervention was based on the National Asthma Education and Prevention Program guidelines (NAEPP, 2007) and successfully reduced emergency room visits, significantly decreased costs, and improved patients' asthma symptoms and quality of life (Beckham, Kaahaaina, Voloch, & Washburn, 2004).

Even as researchers define new phenotypes, genotypes, and epigenetic signatures of this heterogeneous condition that promise new and targeted treatment protocols, our communities must continue to advocate and embrace proven policy and personal strategies to reduce known risk factors for asthma, including obesity and smoking.

**Asthma Summary and Highlights**

- ❖ Asthma can be well-managed with proper medical assessment and monitoring, patient education, control of environmental triggers, and medication adherence, as well as home remedies and cultural practices.
- ❖ Community-based asthma interventions using Community Health Workers can improve outcomes in high-risk communities.
- ❖ Community-friendly, low-tech materials aid in health education delivery.

**Maternal/Infant Health**

Home visiting services are effective at promoting safe sleep practices, as well as fostering positive maternal, child, and family social connections; promoting breastfeeding; engaging families in early childhood educational learning activities such as reading, communication, and play; increasing the family's knowledge on child developmental milestones and positive parenting; reducing child maltreatment; and increasing family self-sufficiency (Yoshimoto, Robertson, & Hayes, 2014).

**Maternal/Infant Health Summary and Highlights**

- ❖ Home visitation programs are an effective tool for improving parenting and family functioning and positively impacting children's health.

We have outlined above some effective, evidence-based approaches to addressing health disparities related to cardiovascular disease, cancer, maternal/infant health, and asthma. Below, we highlight some programs, projects, and concepts that we believe will have an important impact on Native Hawaiian health. Although most are tailored for Native Hawaiian patients and communities, we have also included some relevant approaches from other indigenous communities. This section is by no means comprehensive, but offers a few examples to support our belief that culturally tailored, community-based approaches appear promising for enhanced Native Hawaiian health and well-being.

*[Health for Native Hawaiians] is the community – it's in the heart. If they have that kind of inner peace as well as that connectivity with their family, friends, and community, then they probably can do anything they want…If you look at the percentage of [Native] Hawaiians, they are in poverty. And that has a direct relationship with your ability to have a good well-being. So education is really important. I think people are really engaged in their community, and I always focus on community service. They build relationships that are lifelong. They contribute to the community. So that brings a sort of pride. It allows them to explore their talents. No matter what your position or disposition is, when you know what your gift is, you certainly can help and get into those career fields. If you're still a young person being able to explore all kinds of different things…So in order to thrive in the social context, in your work-related opportunities, in the service you do with others in your community, it's important.*

Susie Chun-Oakland
Retired State Senator
Hawai'i State Legislature

- **The Patient-Centered Medical Home Model of primary care, which provides interdisciplinary team-based care coordination, including Case Managers and Community Health Workers (CHWs), shows promise in addressing the social determinants of health and providing more holistic, patient-centered, accessible, and effective care.**

The Medical Home model finds much of its roots in the efforts of Hawai'i's own Dr. Calvin Sia. In the late 1970s, Dr. Sia led a successful effort to have the Medical Home concept adopted by the state legislature. The key features of the Medical Home, as defined by the Hawai'i Child Health Plan, included family-centered care which was financially and geographically accessible; offered continuity and comprehensive, coordinated care; and involved the use of other related local resources (Sia, Tonniges, Osterhus, & Taba, 2004).

Current models, known as Patient Centered Medical Homes (PCMH), likewise aim to improve health care by transforming the organization and delivery of primary care (AHRQ, 2017). The idea behind a PCMH model was to shift the primary care practice model to one that augments the traditional principles of primary care by "enhancing coordination and communication among all players in the patient's health," and allows the patient more control "by providing the patient with more information, additional resources, and greater choice, ultimately providing improved patient autonomy" and decreased health care costs (Ray, 2011).

The fundamental components of PCMHs include: 1) Comprehensive care inclusive of prevention and wellness, acute care, and chronic care with a team of care providers; 2) Patient-centered care with partnerships between providers and the patient and family, requiring understanding and respect for individual needs, culture, values, and preferences; and recognizing patients and families as core members of the care team; 3) Coordinated care across all elements of the health care system with an emphasis on communication among all members of the care team; 4) Accessible services and receptivity to individual preferences regarding access; and 5) Quality and safety with a commitment to quality improvement (AHRQ, 2017).

The effectiveness of the PCMH model at providing quality health care, improving patient outcomes, and decreasing costs – particularly for prevention and chronic disease management – has been evaluated in numerous studies, and the model has been deemed a promising approach (Williams, Jackson, & Powers, 2012). Studies evaluating effectiveness in populations that experience health disparities have also been promising. An investigation examining the PCMH model with a targeted diabetes program confirmed that PCMH decreased disparities in care and improved diabetes outcomes (Lee, Palacio, Alexandraki, Stewart, & Mooradian, 2011). Another study evaluating the effectiveness of PCMH with Native Alaskans, an indigenous population that experiences poorer health outcomes than the overall U.S. population, demonstrated that PCMH was effective with respect to decreased emergency care use (Driscoll et al., 2013). Finally, PCMH offers an important opportunity to promote population health through systematically addressing the social determinants of health (Garg, Jack, & Zuckerman, 2013).

Modifications to better serve disparate populations factor in the inequities these patients and communities face in accessing high quality, effective, and culturally competent care – as well as addressing the ecological and social factors that impact their ability to maintain health (Wong, Anderson, Dankwa-Mullan, Simon, & Vega. 2012). Examples of modified PCMHs include facilities that invest in increased educational opportunities, access to affordable housing and legal services, and programs that promote urban farming and gardening (Wong et al., 2012). Implementing a comprehensive PCMH model with the aim of eliminating health disparities will take a concerted effort on many levels. These substantial changes entail redesigning the traditional

models and will require state and federal policies which focus on providing training, guidance, and reimbursement mechanisms that support the PCMH model (Anderson & Olayiwola, 2012).

**The Alaska NUKA System of Care**

The Alaskan Southcentral Foundation's NUKA System of Care began in the 1990s. NUKA is a comprehensive, customer-driven health care system developed by Alaska Native people seeking a new way to deliver health care as an alternative to the old Indian Health Service (IHS) system that was failing them. Holistic care, involving physical, mental, emotional, and spiritual wellness, is core to their mission and vision. The health care system serves over 60,000 Alaska Natives and American Indian people and is funded through third-party payments (49%), IHS contracts (43%), and grants (5%) (Southcentral Foundation, 2017).

Care is based on forming and maintaining relationships, especially those among the customer, their family, and the provider, and follows the standards outlined in the Patient Centered Medical Home model. Services include primary care, dentistry, behavioral health, traditional healing, complementary medicine, rural health, telehealth, optometry, physical therapy, audiology, social services, pharmacy, X-ray and lab, nutrition and fitness, health education, and cultural activities. Inpatient medical care is provided at a Native hospital (Alaska Native Medical Center) owned by Southcentral Foundation. Home visits and day and residential behavioral health treatments are offered. A high priority has been placed on collecting data to measure satisfaction, success and efficiency. Alaska Native culture, values, and beliefs are interwoven throughout.

Since the implementation of the NUKA System of Care, 95% of the Alaska Native population has a designated primary care provider, same-day access to appointments is available, hospital stays have decreased by 36%, ER and urgent care use has decreased by 42%, and specialty clinic visits have decreased by 58%. In addition, Healthcare Effectiveness Data and Information Set (HEDIS) measures are 75% or better, and patient satisfaction scores are at 94% for respect for culture and traditions (Gottlieb, 2013). This relationship-based system of care has successfully addressed barriers involving "space, attitude, language and time." The NUKA System of Care has received numerous awards, including the Malcolm Baldrige National Quality Award twice (2011, 2017), and is a role model for other health systems including one in Fife, Scotland and the Cherokee Indian Hospital (Gottlieb, 2013).

- **Place-based and culturally adapted health promotion and disease management interventions tap into the strengths of the Native Hawaiian community.**

Place-based care directly addresses the social determinants of health through addressing the ways in which "place influences health." Critical to this is the engagement of community in the development of community-level interventions (Smedley & Amaro, 2016). Place-based care transcends "institutional boundaries across a location to provide integrated care for individuals, families and communities. Energy, money and power shifts from institutions to citizens and communities…" (Selbie & Kippin, 2016). The intent is to shift the focus of health from institutions – including the placement of enormous resources into tertiary care facilities, many of them service "silos" – to communities, families, and individuals, focusing on prevention and "whole systems" of primary care within communities (Adebowale et al., 2016). We include here a wide variety of examples that incorporate what could be defined as place-based care through a more holistic lens, ranging from more traditional health care frameworks to technology and land-based care programs.

**Home-Based Care**

Culturally specific home visiting services have also shown promise for effectively improving Native Hawaiian health. Your ʻOhana, a current Department of Health, Maternal and Child Health Branch initiative targeting pregnant women and children through age five, utilizes a network of home-visiting providers who recruit and enroll children and prenatal women within at-risk, high-needs geographic areas. Two other programs designed for Native Hawaiian women and families, Kūlia i ka Nuʻu and Pūlama i nā Keiki, also offer culturally specific home visiting services; outcomes of these programs have yet to be formally studied.

**School-Based Care**

Several promising approaches involving school-based health care exist in Hawaiʻi. School-based health care has been shown to improve attendance and thus holds potential to help improve school performance. Studies show that students who use school-based health centers are less likely to be absent and more likely to graduate. For example, school-based interventions involving direct observation of daily controller medication have been shown to improve asthma symptoms and school attendance, and reduce oral steroid use (Halterman et al., 2011; Halterman, Borrelli, Fisher, Szilagyi, & Yoos, 2008). Also, on-campus health centers increase students'

health knowledge as well as use of health care. An evaluation of students who attend schools with school-based health centers shows that students decreased their use of hospital emergency rooms for routine health care, helping local and state governments save significantly on medical expenses (National Assembly on School-Based Health Care, 2011; Young, D'Angelo, & Davis, 2001). Below are examples of school-based health care programs in Hawai'i.

- **Red Raider Health Center,** the first school-based clinic in Hawai'i, opened in 2012 at Kahuku High School. The intent was to allow students to see a health care provider at school, decreasing the amount of time they spent away from school. As an extension of the Ko'olauloa Community Health and Wellness Center, care is provided by Family Nurse Practitioners, dentists, and dental hygienists. Visits include immunizations, sick visits, simple procedures, and physical and dental exams ("Kahuku Health Center," 2014).
- **Hawai'i Keiki** started in 2014 as a partnership between University of Hawai'i at Mānoa School of Nursing and the Hawai'i State Department of Education (DOE) to develop a model framework for statewide school health nursing programs. The initial goal was to provide health care services to children in schools located in DOE complexes (geographic areas) of high need. Initial placements involved RNs and APRNs in five DOE school complexes; over the past two years, this has increased to 11 RNs and APRNs covering seven DOE complexes, all of whom are connected by "web-based health room management software." Nurses provide sick and emergency care, screening, and health education. Current services are grant-funded ("Hawai'i Keiki," 2014).
- **Wai'anae Intermediate and High School:** In 2016, federal grants paved the way for the opening of two health centers in schools in the rural community of Wai'anae. A nurse practitioner provides services ranging from sick care to vaccinations to physical exams. All students are eligible to be seen, including those without health insurance (Omaye, 2016).

**'Āina[3]-Based Care**

Place-based care in Hawai'i may be best appreciated in the multitude of 'āina-based programs within Native Hawaiian communities. These types of programs focus on reconnecting Native Hawaiians with their land and cultural practices, many of which involve sustainable land management, healthy food production, and physical activity. By utilizing cultural activities and cultural strengths, these programs also improve the physical, emotional, and spiritual health of Native Hawaiians and their communities. Examples include programs focusing on food systems such as taro cultivation or traditional aquaculture (loko i'a[4]) that exist on almost every major Hawaiian island. To date, these programs have not measured impact on health through traditional Western methodology.

*The activism continued…in health research, in community-based participatory research. It's been our thing from 1978-9 – the thing that won Na Pu'uwai (attention)…from the very first and the only cardiovascular risk factors [study] in ethnic Hawaiians research to the Moloka'i diet… The participants said, make sure the water continues to flow to where the lo'i[5] are. And it still does. [So to] really pay attention to Native Hawaiian health, connect it to the land, you know. The land is religion. You take care of the land, the land will take care of you. Just look at all those practitioners, whether hunting, whether fishing, whether gathering, whether farming. Continue to learn from those practitioners even today who've learned from their uncles. Really inspiring.*

Emmett Aluli, MD
Medical Executive Director
Moloka'i General Hospital

An example of an 'āina-based program measuring change in health is the Kalihi-based Ehuola 'Ohana Health Project. Ehuola is a program of the Kokua Kalihi Valley (KKV) community health center. KKV is a Federally Qualified Health Center (FQHC) that provides primary care to underserved communities. It is unique in Hawai'i in that it also has an agricultural campus in the back of one of Honolulu's valleys. Ehuola takes advantage of this by incorporating gardening and nutrition in its curriculum. It is an interdisciplinary, culturally based, prevention-oriented program emphasizing health within the family and community setting. The program weaves culture and cultural practices into the curriculum, which focuses on building a strong foundation for health and preventive health care. The program has two key components. One offers training for

[3] land
[4] fishponds
[5] taro patches

traditional birthing practices, and the other focuses primarily on elementary school-aged children whose families are required to participate. The latter utilizes community resources and family-based workshops which cover topics such as gardening, fishing, physical activity, nutrition, and cooking and preparing healthy food. Ehuola seeks to instill in participants such values as understanding their connection to place; understanding their responsibility to their past, present and future; utilizing the knowledge of their ancestors to lead healthy lifestyles, including healthy eating and physical activity; working harmoniously with each other; and striving to become the best that they can be (Kokua Kalihi Valley, n.d.).

Initial outcomes indicated that families developed increased confidence in making personal health choices, and participated in more cultural health practices. Changes with respect to diet, weight loss, and exercise were not at project goal; nonetheless, progress was observed, and families indicated that they valued the relationships formed through the program and the support they received in facing life challenges (Odom, Jackson, Derauf, Inada, & Aoki, 2019). Of note is that families knew what was needed to maintain health, which is aligned with the contemplation and preparation steps of the Stages of Change Model ("Stages of Change," 2017).

**Cultural Competency Training for Providers**

*There are some fundamental values – aloha,[6] lōkahi,[7] 'ohana,[8] and maika'i loa[9] – that go back to being ocean voyagers going over long stretches of ocean in the really limited space of a voyaging canoe. Those spaces – when you think about it, when our ancestors first arrived in the islands, they had to go back and forth to settle the islands. There are chants, oral traditions, and actually, archaeological anthropology and even genetic studies that demonstrate that for at least the first 300 years after arriving in the islands, Hawaiians went back and forth on these voyaging canoes – back to Tahiti, back to the Marquesas, which are the two big island groups…where our ancestors came from. And that in going back and forth, if you think about it, the people on those canoes – they could not be old, they could not be fragile or feeble; they would have to be strong. If they were middle aged or even elders, they would have to be very, very strong to sustain that ocean voyage. They would also have to have values that would sustain them in sort of not getting into fights – to have harmony as much as possible, to have a mechanism through which they could resolve conflicts quickly, and to be supportive on this small island if you were going over these long stretches of ocean.*

*So, I think if you look at those values, they have something in common. They all have the commonality of basically putting the responsibility on each person as an individual to become a part of a communal being, a family. I think what Hawaiians did was when they made landfall, they literally took the values of that canoe and transported it onto the land. It makes sense. If you look at the concept of the ahupua'a, of how things sort of worked in each part of the ahupua'a, each part of the ahupua'a complemented each of the other parts of the ahupua'a. It is kind of like a canoe moved onto land as a metaphor for life – the way one lives… When you look at Polynesia, where the Hawaiians came from, the god of the ocean [does not really play] a major role; but suddenly, [when] he comes here, he has a major role. He's one of those four major gods such as Kū [and] Lono. Suddenly, Kanaloa becomes really important. But then it makes sense, because if you're going back and forth over the ocean, wouldn't you want to have as your patron deity Kanaloa who is the ruler of the ocean…to take you safely back? When I look at [Hawaiian] values, that's what I look at… We will still keep them alive because there is a resonance of practical value for us.*

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Director, Native Hawaiian & Pacific Peoples
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Medical practitioners and physicians must play a role in eradicating health care disparities, which requires that they deal compassionately, sensitively, and competently with patients from all backgrounds. However, as pointed out in the 2002 report of the Institute of Medicine, ("Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care"), "although myriad sources contribute to these disparities, some evidence suggests that bias, prejudice, and stereotyping on the part of health care

[6] love, affection, compassion, mercy, show of kindness, charity; used in greeting or farewell
[7] unity, agreement, accord, harmony; Native Hawaiian concept of health characterized by harmony and balance
[8] family
[9] excellence

providers may contribute to differences in care" (Institute of Medicine, 2002). Cultural competency training of health care providers is needed to address these biases, prejudices, and stereotypes.

In 2001, the Office of Minority Health first released the National Standards for Culturally and Linguistically Appropriate Services (CLAS) in health care (enhanced in 2013) in order to reduce health disparities by improving the quality of services to patients by providers and institutions (Office of Minority Health, 2001; Office of Minority Health, 2013). Other organizations such as the Liaison Committee on Medical Education (LCME), the accrediting organization for medical schools, now require curricular content that addresses cultural competency and health care disparities (Liaison Committee on Medical Education, 2016). Medical specialty boards such as the American Board of Family Medicine (American Board of Family Medicine, n.d.), and certain states such as California, New Jersey, New York, Ohio, and Washington, all require cultural competency training of physicians in order to maintain their medical licenses and their board status (National Consortium for Multicultural Education for Health Professionals, 2008).

Of note, there have been no strict guidelines on protocols for this type of training, allowing for the use of innovative approaches. At the Department of Native Hawaiian Health at the John A. Burns School of Medicine (JABSOM), the development of the cultural competency curriculum was guided by cultural values and input from focus groups, cultural consultants, and an interdisciplinary team of faculty known as the "C3 Team" (Kamaka, 2010). The goal was to develop a comprehensive cultural competency curriculum addressing provider factors and training to reduce health disparities affecting Native Hawaiians. Integral to these efforts was the understanding that health and wellness for Native Hawaiians must be holistic, addressing the balance of mind, body, and spirit as well as that of the individual, family, and community, and the environment and spiritual world (Kamaka, Wong, Carpenter, Kaulukukui, & Maskarinec, 2017).

A‘ole pau ka ike i ka halau ho‘okahi.

*All knowledge is not learned in one school.*

‘Ōlelo No‘eau #203
(Pukui, 1983, p. 24)

Another understanding of the interdisciplinary faculty team, called the "C3 team," was that culture-related curricula could not be taught via didactic lectures. Therefore, the JABSOM Native Hawaiian Health cultural competency curriculum utilizes a variety of teaching methodologies including didactics, role play, small group discussion, problem-based learning (PBL), workshops with hands-on demonstrations, culturally standardized patient experiences, and experiential learning such as cultural immersion. Preliminary evaluations are showing that these approaches are useful and relevant to the students. The success of the curriculum may be attributed not only to the faculty but in large part to the cultural practitioners and community partners involved.

**Community Health Workers / Patient Navigation Services**

*Basically, our whole mission at Hui No Ke Ola Pono is to empower the Native Hawaiians to be their own health advocate. Hui No Ke Ola Pono is prevention education before the disease happens…We're in the community, we go, we set up the outreach to different communities, but the fact is Hawaiians are working, so the only time we can go get them is at 5 o'clock at night. And [many have] two jobs. So, we have to get into the offices and meet them where they are at.*

Joseph Gonzales
Executive Director
Hui No Ke Ola Pono
(a Native Hawaiian Health Care System)

Health advocacy is central to health promotion and disease prevention. Providers serving the Native Hawaiian community have long noted that the mainstream, office-based health care system has not effectively served many of their patients. Alternative approaches such as the Diabetes Intervention Project, which utilized Community Health Workers (CHWs) to establish regular contact with patients at home and in the community, have been successful at reaching Native Hawaiian patients who have poor chronic disease management or high-risk pregnancies (Humphry, Jameson, & Beckham, 1997). CHWs serve as cultural experts who form a "bridge" connecting patients with a health care team, and provide a range of services in collaboration with that team. Perhaps most importantly, CHWs can establish positive relationships with patients and promote a family-centered approach, including key family members with caretaking roles. CHWs also address a range of barriers to care, including lack of transportation and cultural relevance (Rosenthal, Rush, & Allen, 2016).

Patient navigation programs are designed to assist patients as they proceed through the health care system. In an often fragmented system, these

programs can link patients to diagnostic tests and specialty providers, address barriers, and potentially reduce disparities (Allison et al., 2013; Domingo, Davis, Allison, & Braun, 2011). One such program serving Native Hawaiians was the Queen's Cancer Patient Navigation program, which has now expanded into a broader patient community navigation program. It was unique in that it acquired patients at any point, whether at initial testing, diagnosis, or completion of treatment.

Navigators deal with a wide variety of potential barriers and challenges, offering patients the varying levels of support they need. Examples of a high level of support include basic disease education; education about disease-related services; assistance with insurance; travel arrangements, including flights; linking patients to other care team members such as social workers, other specialists, and financial counselors; and linking the patient and family to community resources (Allison et al., 2013). Navigation is not limited to hospitals or clinical locations, and community navigators are frequently involved in helping the patient access screening, timely referrals, and emotional support and follow-up once treatment is completed (Domingo et al., 2011).

Another promising example of a navigation program is the PIKO[10] (Patient-Informed Knowledge to Optimize Outcomes) ʻOhana-Centered Health Care Navigation to Reduce Barriers to Care Initiative, which is being implemented at a primary care clinic on Oʻahu to address the unique needs of Native Hawaiian patients. The present study proposes the addition of Community Health Navigators (CHNs, who constitute a type of Community Health Worker) to the interdisciplinary teams within clinics. The CHN is a member of the community served by a primary care clinic who has knowledge of relevant resources and services.

As part of the PIKO initiative, adult Native Hawaiian clinic patients with Type 2 diabetes and other comorbid conditions work with CHNs to develop an ʻOhana-Centered Treatment Plan (OCTP). The OCTP uses a Native Hawaiian cultural framework to help patients identify stressors and reduce barriers to care in terms of their three "PIKOs" (i.e., connection to the past, present, and future). The resulting OCTP is a coordinated plan developed by patients and their ʻohana[11] with specific objectives and goals of strengthening their capabilities to manage their health and well-being. The OCTPs are shared with the rest of the treatment team so that other providers have a better understanding of the system in which their patient is currently functioning and the patient's capacity to focus on health. The plan is monitored and reviewed regularly with the patient, to assess progress and celebrate successes. Ultimately, the PIKO initiative intends to address social determinants of health such as education, employment, sense of community (cultural, religious, etc.), employment, preventive services, and cultural services or practices.

Along with patient and community navigation services, culturally specific home visiting services have also shown promise for improving Native Hawaiian health. Your ʻOhana, a current Department of Health, Maternal and Child Health Branch initiative, targets pregnant women and children through age five, and utilizes a network of home visiting providers who recruit and enroll prenatal women and children within geographically at-risk, high needs areas. Two other programs designed for Native Hawaiian women and families, Kūlia I Ka Nuʻu and Pūlama I Nā Keiki also offer culturally specific home visiting services. Evidence has yet to be gathered to evaluate the efficacy of these programs.

❖ **Telehealth and technology can help address primary care and specialist provider shortages in medically underserved areas.**

Telehealth will potentially transform the health care system, reduce costs, increase quality, increase patient-centered care, and increase patient satisfaction (Schwamm et al., 2017). It can make care both more accessible and more affordable, thus reducing disparities in access to care specifically related to geographic isolation or provider shortages, as experienced in Hawaiʻi, and may facilitate care for underserved patients in both rural and urban settings (Daniel & Sulmany, 2015; Schwamm et al., 2017; Withy, 2015). Indian Health Services has integrated telehealth, resulting in increased access to primary and specialty care for tribal communities, and many studies have demonstrated that telehealth is an effective strategy to improve health outcomes for specific medical conditions. Barriers to telehealth implementation include a lack of payment parity with in-person services, and provider costs related to secure data transmission; however, telehealth care has the potential to improve health outcomes for underserved (Daniel & Sulmany, 2015; Schwamm et al., 2017). Recent policy changes in Hawaiʻi with Senate bills 2469 and 2395 remove the malpractice coverage and reimbursement parity barriers in the state.

[10] Piko: literally, "navel"

[11] family

Mobile health (m-health), an aspect of telehealth that allows for the delivery of health care services via mobile devices, has strong potential to broadly impact communities and contribute to place-based care. M-health requires technology that is already in place in many patients' homes, such as smart phones, tablets, and Internet service. Applications include: 1) use of text messaging to encourage behavior modification, 2) data collection from medical devices such as sensors worn by patients for chronic care management, 3) education allowing access to electronic libraries for patients as well as professionals, 4) access to medical records including personal health records, and 5) professional consultation (Merrell & Doarn, 2014).

One promising m-health model is the iMOKO model developed in New Zealand. It utilizes an app to deliver health care services to schools, children, and parents in areas of need. Community members, especially childcare providers and teachers, are taught basic health assessment. Assessments are entered into a tablet or smartphone, and the information is transmitted to an off-site health team. Follow-up instructions can be given to teachers and prescriptions can be sent through the smart phone to the parent portal via the iMOKO parent app. The model allows for rapid treatment (requiring as little as eight minutes), and allows the child to remain at school, while reducing missed work time for parents (iMOKO, 2017).

There are a number of telehealth pilot projects in various stages in Hawai'i. These include: 1) a school-based virtual clinic to reduce absenteeism in schools due to asthma (potential schools being considered are located in Wai'anae and Kahuku), 2) CHWs working in coordination with local health care providers to operate virtual clinics within the Ka'u district, and 3) a public safety telemedicine project.

## Gaps

### Structure of Systems

As we work to improve the health of our community through policy, systems, and environmental changes, the structure of our clinical and social services systems is critical. Unfortunately, for too many years, attempts to improve Native Hawaiian health have been made by programs or agencies functioning in silos. The danger is that the wheel gets reinvented. With scarce resources, it is imperative that programs and organizations work together not only to avoid duplication, but also to fill gaps efficiently. The following list gives examples of networks of organizations that serve Native Hawaiians: NHHCS (Native Hawaiian Health Care Systems), the Office of Hawaiian Affairs (OHA), the Ali'i trusts (Queen's Hospital, Lunalilo Home, Kamehameha Schools, and Queen Liliu'okalani Trust), health insurance companies, the University of Hawai'i, the Hawai'i State Department of Health, the federal government, Community Health Centers, and the non-profit sector.

### Research

- **A complete picture of Native Hawaiian health status is only possible with disaggregated data specific to the Native Hawaiian population, inclusive of Native Hawaiians residing in the continental U.S., specific to all major diseases and disease risks, and inclusive of those who are not accessing medical care.**

Data on Native Hawaiian health are not consistently available. Native Hawaiians were traditionally aggregated with Asians or Other Pacific Islanders, which resulted in the masking of many health disparities. Although this situation is improving, as revealed through searches for Native Hawaiian data in the U.S. census databases, new complications have arisen with new census categories such as "mixed race." Since many Native Hawaiians fall in the mixed race category, how are they actually being counted in national databases? An example can be seen by examining data related to the shortage of Native Hawaiian physicians. National data from the Association of American Medical Colleges (AAMC) in 2017-2018 show that there were only 14 Native Hawaiian or Other Pacific Islanders enrolled at the John A. Burns School of Medicine; yet, internal medical school documents reveal that there were actually 37 Native Hawaiians enrolled. Are the other 23 medical school students "lost" in the AAMC's large mixed race category? (Association of American Medical Colleges, 2017; M. Kamaka, personal communication, May 4, 2018).

In addition, many sources fail to provide disaggregated data, particularly in a way that allows examination in relation to other social determinants of health (i.e., age, gender, geographical location, urban/rural setting, income, occupation, language, etc.). For national studies, the Native Hawaiian sample size is quite small, which creates challenges. An example may be found through searching for national data on obesity and Native Hawaiian children in the National Health and Nutrition Examination Survey (NHANES) database, which includes information on nutrition, demographics, socioeconomic status (SES), environment, and physical status (physical exams, labs, etc.). Although we have some local data pointing to an alarming rate of obesity in Native Hawaiian and other Pacific

Islander children, we are unable to mine the rich source of data available in NHANES for that population. In fact, the NHANES decided to oversample for Asians, but not Native Hawaiians and other Pacific Islanders (Novotny et al., 2013; National Center for Health Statistics, 2017). In the SEARCH for Diabetes in Youth study (SEARCH for Diabetes in Youth, n.d.), data were obtained for Asian, Asian Pacific Islanders and Pacific Islanders; however, Native Hawaiians were not disaggregated from the Pacific Islanders category.

In addition to addresses these challenging data-related issues, other important areas that require further research include the health impacts of our rapidly aging population, climate change, and emerging findings in the fields of genetics and epigenetics. Although we have evidence that culturally adapted and interventional programs utilizing Native Hawaiian methodologies are effective, research efforts must be greatly expanded to demonstrate that they can make a significant impact on Native Hawaiian health. Funding is required for larger culturally adapted and interventional studies in a wider range of communities; with additional disease states, such as with cancer; and across a variety of settings (e.g., community, home, hospital, and school). We need to explore whether the NUKA model can be effective in Hawai‘i, and the specific forms that telehealth or Patient-Centered Medical Homes might take in Native Hawaiian communities.

The impact and role of Native Hawaiian traditional healing practices within overall Native Hawaiian health also remain to be explored. While these practices and cultural considerations have begun to be integrated into some programs and intervention studies, there is a great depth of knowledge and wisdom that has not been documented or assessed by Western standards. However, consideration should be given to the possibility that traditional healing may never be measurable by Western standards, and it may not be appropriate to attempt such measurement. Nevertheless, funding should be allocated to allow inclusion of traditional healing practices in interventional and preventive programs. Additional discussion of these and other issues related to gaps in research may be found in Chapter 6: Data Governance.

**Resources**

- **Access to care: While gains have been made, gaps remain in affordability, availability, and acceptability.**
- **Access to technology: The advantages of telehealth are limited by access to that technology.**
- **Economic and cultural stressors: High rates of poverty and homelessness and low rates of post-secondary education disproportionately affect our communities. These stressors are strongly linked to health risk behaviors and poor health outcomes.**

*[In the arena of] health coverage, I would bring up the cultural competency. It's like – people would say, "If I got sick in an automobile accident and I have no control over where I am and I would end up in a hospital," people would say, "I'd like to look over there and see somebody that feels, understands the background from which I come." That would be in an ideal world, but there are not enough, certainly not enough Native Hawaiian physicians. And there are probably not enough physicians that are culturally competent.*

*Is there a match between the provider and the person accessing the care? On the whole, they say it isn't the best. You know, sometimes that match doesn't occur, and I can tell you stories with my family… I would say that, especially in our older generation, Native Hawaiians do not trust the health care system. I can tell you stories. My parents would say that the hospital, the clinic – if you went into the hospital, they would believe that you would [not] come out, that you would probably die there, you know? That was real for many of our older people, and this belief exists today. There are gaps in our knowledge of current health care utilization practices of Native Hawaiians.*

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Anecdotal information and outcomes data indicate that there are remaining availability, affordability, and acceptability barriers to accessing existing health care resources. For example, although the rate of Native Hawaiians with adequate commercial insurance has increased recently, Native Hawaiians are not utilizing services at comparable rates to other groups. In addition, those who seek health care services often rely on state and federally sponsored services (Hawai‘i Health Data Warehouse, 2011). Certainly, provider shortages exist throughout our state and are projected to worsen. For example, by 2020, it is estimated that Hawai‘i will be short 800-1500 physician FTEs (Full Time Equivalents; Withy, 2015). Primary Care Provider shortages are especially critical in our rural communities, many of which have high concentrations of Native Hawaiians (Creamer, 2017; Withy, 2015). This topic is discussed in more detail in Chapter 7: Workforce Development.

More data are required to quantify who is accessing primary care and basic preventive services as well as where in the community they prefer to access care. In addition to gaps in primary prevention, there are inconsistencies in chronic disease management services, as health care systems continue to focus on tertiary care – leading to costly emergency room overuse and preventable hospitalizations. Consideration must be given to the impact of some unique stressors experienced by Native Hawaiians that also act as barriers to care. What roles do mistrust, cultural conflict, cultural historical trauma, social and cultural determinants of health, and racism play in determining the acceptability of current health care resources that are still modeled on a Western system of care? Services provided to Native Hawaiian communities must be relevant to those communities. Relevance can be improved through simultaneous efforts to increase health literacy in the community and increase the appropriateness of health care services. Cultural competency training of all members of the health care team is essential. The importance of traditional healing cannot be overstated; traditional healing plays vital roles in collaborative care throughout the community, empowering those who seek care and affirming the necessity of holistic care for wellness and healing.

**Policy**

Gaps also remain in the Patient-Centered Medical Home model and place-based care approaches. There is a need for effective collaboration and referrals among primary care, specialty care, public health, behavioral health, traditional healers, and community resources. Collaboration is required on many levels, including training programs, clinics, hospitals, industry, and institutions. Truly team-based, collaborative care recognizes that patients are more than their diagnosis. They are connected to their community and their culture, and impacted by policy and systems as well as their social and physical environment.

## Recommendations for Impact

Hili hewa ka manaʻo ke ʻole ke kūkākūkā.

*Ideas run wild without discussion.*

Discussion brings ideas together into a plan.

ʻŌlelo Noʻeau #993
(Pukui, 1983, pp. 106-107)

**System Recommendations**

- ❖ Strategic coordination is required to break down "silos," avoid duplication of efforts, and ensure collaboration and efficient use of resources.
- ❖ A new model of health care is needed. The current system is not working; in fact, it is failing Native Hawaiians.

It is noteworthy that efforts are currently underway to break down the "silos" within which various organizations work, integrating and balancing their resources, missions, and interests (Hawaiʻi Department of Health, 2016). Resources are required in order to maintain and improve coordination efforts. A single organization such as Papa Ola Lōkahi (POL), which is focused on health for all Native Hawaiians, should be designated as the lead organization. As such, it must be supported and expanded in order to:

- Monitor efforts of various agencies and programs for the purpose of preventing duplication of efforts.
- Guide funding towards gaps that are identified.
- Assist with additional support where indicated.
- Serve as the center for information and communication to promote collaboration and ensure efficient use of limited resources.

In addition, resources should be directed toward transitioning to a new model of health care for Native Hawaiians. Consideration should be given to

successful models that serve other indigenous populations, such as NUKA in Alaska.

**Research Recommendations**

- Increased research, including interventional studies, planned, directed, and disseminated by Native Hawaiian communities
- Increased research that promotes innovation and culturally relevant and appropriate Native Hawaiian methodologies, and is prepared for future challenges such as climate change

- **Ensure accurate data are available to assess health risks, status, and outcomes.**
- **Expand the availability of disaggregated data.**
- **Support data-sharing agreements among agencies and programs.**
- **Support longitudinal data collection on education and employment, including vocational education.**
- **Further explore genetic influences on disease.**

Increased research and funding for research are needed. For example, pathways to new and impactful innovations may lie within the use of information from genetic and epigenetic studies in partnership with culturally relevant interventional studies. Further interventional studies are needed utilizing Native Hawaiian methodologies, including traditional healing practices, across a wide range of health conditions. These efforts must include components of Community-Based Participatory Research such as the involvement of the Native Hawaiian community in planning, directing, and disseminating research protocols and findings. Future initiatives must be innovative and adaptable to advances in science. Research must be prepared to address not only ongoing disparities in health care, but also future disparities that may arise or be exacerbated by the impacts of climate change and rapid growth in Hawaii's elder population.

**Resource Recommendations**

- Native Hawaiian Health is significantly under-resourced.
- Increased resources would allow for the development of a more culturally relevant health care model to better serve Native Hawaiians.
- Prevention needs to start earlier and resources need to be accessible for youth and younger adults.

- **Explore telehealth solutions and other innovative technologies.**
- **Increase understanding of the available technology and how it can be utilized to increase health care access and support community and team-based care.**
- **Draw upon Native Hawaiian traditional practices.**
- **Improve access to care by continuing to improve acceptability of care and integrating traditional healing practices.**
- **Allocate resources for prevention programs aimed at youth and younger adults.**
- **Increase resources to develop and support a Native Hawaiian culturally adapted primary care system:**
  - **Inclusive of traditional healing practices.**
  - **Inclusive of CHWs and patient navigators.**

Native Hawaiian health care is under-resourced and should be funded at least on par with health care for other indigenous populations in the United States, such as Indian Health Services. An increase of funding to that level would allow for the development of a more successful health care model that addresses the needs of Native Hawaiians. Resources should be channeled toward better understanding of health care utilization practices of Native Hawaiians as opposed

to channeling them toward tertiary care. Preventive services, especially preventive care targeting youth and younger Native Hawaiians, should be prioritized along with the development of a culturally adapted health care model. This model could be a Native Hawaiian Patient-Centered Medical Home, but one that also includes health care delivered in place-based settings inclusive of traditional healing practices and community navigation services. Funding should demand an effective use of resources but be expansive enough to support additional innovation such as in telemedicine initiatives, cultural competency and interprofessional team training of our health care workforce, development of culturally based "health literate" programs and interventions, and incorporation of traditional healing, as well as outcomes-related research to support and justify all of these initiatives.

**Policy Recommendations**

- Native Hawaiian health and wellness care must be holistic, innovative, collaborative, integrative, and culturally based.
- Silos must be eliminated across the wide expanse of academia, government, institutions, insurance, and communities.

- **Prioritize incorporation of collaborative, integrative care approaches as well as cultural competency training in training programs for health care teams.**
- **Increase reliance on community-based health care teams and technology.**
  - **These measures also require resources to assist in coordination of team care, data, and records such as electronic medical records (EMRs).**
  - **Align resources to account for the expansion of telehealth.**
  - **Ensure that culturally tailored telehealth programs are developed.**
- **Increase support for place-based care, incorporating communities and environments in which people live.**

Future policies regarding Native Hawaiian health care need to focus on the provision of holistic, innovative, collaborative, integrative care that incorporates Native Hawaiian values, culture, and communities. Too many promising efforts have been lost to an unsustainable dependence on grants or a dizzying maze of silos (academia, community, institutions, government, insurance, etc.). A culturally adapted Patient-Centered Medical Home for Native Hawaiians will be doomed to failure if it is not given adequate resources or allowed to be innovative, holistic, and inclusive; and does not have at its core an expansive, transparent coordination of programs, data, and records (such as outcomes research and electronic medical records). An inclusive PCMH team would incorporate, for example, traditional healers and Community Health Care Workers as part of community-based health care. New models are needed; the way forward may lie in the provision of technologically and scientifically advanced place-based health and wellness care that incorporates the culture, communities, and environments in which people live.

## CONCLUSION

Pūʻali kalo i ka wai ʻole.

*Taro, for lack of water, grows misshapen.*

Lack of caring for the land leads to illness.

ʻŌlelo Noʻeau #2705
(Pukui, 1983, p. 296)

Native Hawaiians, along with other indigenous and minority populations, suffer disproportionately from adverse health outcomes. Disparities exist across the spectrum of health conditions including the most prevalent conditions worldwide, such as cardiometabolic disorders including cardiovascular disease, diabetes, and obesity; as well as cancer, asthma, and poor maternal and infant outcomes. Ultimately, Native Hawaiians have the shortest life expectancy compared to other major ethnic and racial groups in Hawaiʻi (Wu et al., 2017). In addition to addressing inequalities in health outcomes, future efforts must focus on emerging trends impacting Native Hawaiian health, such as epigenetics, climate change, and the growing elderly population.

The underlying causes of these disparities are inter-related and multifactorial. Pivotal to understanding the fundamental causes is recognizing the impact of social determinants of health upon health

care availability, affordability, and acceptability, and ultimately, health outcomes. Despite the persistence of health disparities and inequalities, several promising trends have demonstrated positive impacts on Native Hawaiian health status, such as culturally tailored health interventions, cultural competency training for providers, and place-based care facilitated through the community, technology, and land-based programs. The incorporation of culturally tailored, culturally specific interventions has consistently demonstrated improved outcomes with respect to Native Hawaiian health.

Gaps in the current health care delivery model can be broadly categorized as structural deficits, research restrictions, resource limitations, and need for policy reform. Recommendations for impactful change to the health care delivery model and health outcomes specifically address each area of identified deficiency with respect to the Native Hawaiian population. As outlined in this report, while progress has been made in many areas, the current system does not serve Native Hawaiians well. In order to achieve health and well-being for Native Hawaiian communities, we need to conceive of health care differently and structure our systems accordingly, incorporating culture and community strengths throughout these systems at all levels.

## References


Adebowale, V., Dorrell, S., Adamson, M., Burnell, A., Cooke, R., Dalton, S., …White, G. (2016). *Get well soon: Reimaging place-based health. The place-based health commission report.* London, UK: New Local Government Network. Retrieved from http://www.nlgn.org.uk/public/wp-content/uploads/Get-Well-Soon_FINAL.pdf

Agency for Healthcare Research and Quality. (2013). *National health care disparities report, 2013.* Retrieved from https://archive.ahrq.gov/research/findings/nhqrdr/nhdr13/index.html

Agency for Healthcare Research and Quality. (2017). *Defining the PCMH.* Retrieved from https://pcmh.ahrq.gov/page/defining-pcmh

Aitaoto, N. T., Braun, K. L., Ichiho, H. M., & Kuhaulua, R. L. (2005). Diabetes today in the Pacific: Reports from the field. *Pacific Health Dialog, 12*(1), 124-131.

Akinbami, L., Moorman, J., & Liu, X. (2011). Asthma prevalence, health care use, and mortality: United States, 2005-2006. *National Health Statistics Reports, U.S. Department of Health and Human Services, 32,* 1-14.

Akinbami, L. J., Moorman, J. E., Garbe, P. L., & Sondik, E. J. (2009). The status of childhood asthma in the United States, 1980–2007. *Pediatrics, 123* (Suppl. 3), S131– S145.

Alberti, K. G. M. M., Zimmet, P., & Shaw, J. (2005). Metabolic syndrome: A new world-wide definition. A consensus statement from the International Diabetes Federation. *Diabetic Medicine, 23,* 469-480.

Allison, A. L., Ishihara-Wong, D. D. M., Domingo, J. B., Nishioka, J., Wilburn, A., Tsark, J. U., & Braun, K. L. (2013). Helping cancer patients across the care continuum: The navigation program at The Queen's Medical Center. *Hawai'i Journal of Medicine & Public Health, 72*(4), 116–121.

Aluli, N. E., Jones, K. L., Reyes, P. W., Brady, S. K., Tsark, J. U., & Howard, B. V. (2009). Diabetes and cardiovascular risk factors in Native Hawaiians. *Hawai'i Medical Journal*, *68*(7), 152–157.

Aluli, N. E., Reyes, P. W., Brady, S. K., Tsark, J. U., Jones, K. L., Mau, M., … Howard, B. V. (2010). All-cause and CVD mortality in Native Hawaiians. *Diabetes Research and Clinical Practice*, *89*(1), 65–71. doi:10.1016/j.diabres.2010.03.003

Aluli, N. E., Reyes, P. W., & Tsark J. U. (2007). Cardiovascular disease disparities in Native Hawaiians. *Journal of the Cardiometabolic Syndrome, 2*(4), 250-253.

American Board of Family Medicine. (n.d.). *Cultural competency methods in medicine modules*. Retrieved from https://portfolio.theabfm.org/MCFP/MCFPDoc.aspx?component=PART4&module=MIMM-CC&version=1&id=96

American Diabetes Association. (2011). Diagnosis and classification of diabetes mellitus. *Diabetes Care*, *34*(Suppl. 1), S62–S69. doi:10.2337/dc11-S062

Anand, S. S., Hawkes, C., de Souza, R. J., Mente, A., Dehghan, M., Nugent, R., …Popkin, B. M. (2015). Food consumption and its impact on cardiovascular disease: Importance of solutions focused on the globalized food system. A report from the workshop convened by the World Heart Federation. *Journal of the American College of Cardiology*, *66*(14), 1590-1614.

Anderson, I., Crengle, S., Kamaka, M. L., Chen, T., Palafox, N., & Jackson-Pulver, L. (2006). Indigenous health in Australia, New Zealand and the Pacific. *Lancet, 367,* 1775-1785.

Anderson, D. R., & Olayiwola, J. N. (2012). Community health centers and the patient-centered medical home: Challenges and opportunities to reduce health care disparities in America. *Journal of Health Care for the Poor and Underserved*, *23*(3), 949-957.

Aroda, V. R., Christophi, C. A., Edelstein, S. L., Zhang, P., Herman, W. H., Barrett-Connor, E., …Ratner, R. E. (2015). The effect of lifestyle intervention and metformin on preventing or delaying diabetes among women with and without gestational diabetes: The Diabetes Prevention Program outcomes study 10-year follow-up. *The Journal of Clinical Endocrinology and Metabolism*, *100*(4), 1646–1653. doi:10.1210/jc.2014-3761

Association of American Medical Colleges. (2017). *Total enrollment by U.S. medical school and race/ethnicity, 2017-2018.* [*Table B-5*]. Retrieved from https://www.staging.aamc.org/download/321540/data/factstableb5.pdf

Bearison, D. J., Minian, N., & Granowetter, L. (2002). Medical management of asthma and folk medicine in a Hispanic community. *Journal of Pediatric Psychology, 27*(4), 385-392.

Beckham, S., Kaahaaina, D., Voloch, K., & Washburn, A. (2004). A community-based asthma management program: Effects on resource utilization and quality of life. *Hawai'i Medical Journal, 63,* 121-125.

Benjamin, E. J., Virani, S. S., Callaway, C. W., Chang, A. R., Cheng, S., Chiuve, S. E., … Muntner, P. (2018). Heart disease and stroke statistics—2018 update: A report from the American Heart Association. *Circulation*. doi: 10.1161/CIR.0000000000000558

Braun, K. L., Kim, B. J., Ka'opua, L. S., Mokuau, N., & Browne, C. V. (2015). Native Hawaiian and Pacific Islander elders: What gerontologists should know. *The Gerontologist, 55*(6), 912–919. https://doi.org/10.1093/geront/gnu072

Bushnell, O., & Veith, I. (1994). The gifts of civilization: Germs and genocide in Hawai'i. *Bulletin of the History of Medicin*e, *68*(4), 722-723.

Census: Hawai'i's older population grew by 25 percent in 6 years. (2017, June 30). *Hawai'i News Now*. Retrieved from https://www.hawaiinewsnow.com/story/35791332/census-hawaiis-older-population-grew-by-25-percent-in-6-years/

Centers for Disease Control and Prevention. (n.d.). *Asthma in schools: Asthma facts.* Retrieved from https://www.cdc.gov/healthyschools/asthma/

Centers for Disease Control and Prevention. (n.d.). Hawai'i Youth Risk Behavior Survey – 2017 data. Retrieved from www.cdc.gov/HealthyYouth/yrbs/index.htm

Centers for Disease Control and Prevention. (2017). *Summary health statistics: National Health Interview Survey.* Retrieved from https://ftp.cdc.gov/pub/Health_Statistics/NCHS/NHIS/SHS/2017_SHS_Table_A-2.pdf

Colby, S. L., & Ortman, J. M. (2015). Projections of the size and composition of the U.S. population: 2014 to 2060, population estimates and projections. *Current Population Reports, P25-1143, U.S. Census Bureau*. Washington, DC: U.S. Department of Commerce. Retrieved from https://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf

Corley, M. J., Dye, C., D'Antoni, M. L., Byron, M. M., Yo, K. L.-A., Lum-Jones, A., … Maunakea, A. K. (2016). Comparative DNA methylation profiling reveals an immunoepigenetic signature of HIV-related cognitive impairment. *Scientific Reports*, *6*, 33310.

Creamer, B. (2017). The doctor is not in. *Hawai'i Business Magazine.* Retrieved from https://www.hawaiibusiness.com/the-doctor-is-not-in/

Daniel, H., & Sulmasy, S. S. (2015). Policy recommendations to guide the use of telemedicine in primary care settings: An American College of Physicians position paper. *Annals of Internal Medicine, 163*(10), 787-802.

Deguchi, M., Mau, M. K. L. M., Davis, J., & Niederman, R. (2017). Preventable tooth loss in Hawai'i: The role of socioeconomic status, diabetes, and dental visits. *Preventing Chronic Disease, 14*, E115. doi: 10.5888/pcd14.170214.

Diabetes Prevention Program Research Group. (2009). 10-year follow-up of diabetes incidence and weight loss in the Diabetes Prevention Program Outcomes Study. *Lancet, 374*(9702), 1677–1686. doi:10.1016/S0140-6736(09)61457-4

Dodgson, J. E., Codier, E., Kaiwi, P., Oneha, M. F. M., & Pagano, I. (2007). Breastfeeding patterns in a community of Native Hawaiian mothers participating in WIC. *Family & Community Health, 30*(Suppl. 2), S46-S58.

Domingo, J. B., Davis, E. L., Allison, A. L., & Braun, K. L. (2011). Cancer patient navigation case studies in Hawai'i: The complementary role of clinical and community navigators. *Hawai'i Medical Journal, 70*(12), 257–261.

Driscoll, D. L., Hiratsuka, V., Johnston, J. M., Norman, S., Reilly, K. M., Shaw, J., …Dillard, D. (2013). Process and outcomes of patient-centered medical care with Alaska Native people at Southcentral Foundation. *The Annals of Family Medicine, 11*, S41-49.

Duggan, A., Windham, A., McFarlane, E., Fuddy, L., Rohde, C., Buchbinder, S., & Sia, C. (2000). Hawai'i's Healthy Start Program of home visiting for at-risk families: Evaluation of family identification, family engagement, and service delivery. *Pediatrics, 105*(1), 250-259. Retrieved from http://pediatrics.aappublications.org/content/105/Supplement_2/250

Else, I. (2004). The breakdown of the Kapu system and its effect on Native Hawaiian health and diet. *Hulili: Multidiciplinary Research on Hawaiian Well-Being, 1*, 241-253.

Fitzpatrick-Nietshmann, J. (1983). Pacific Islanders: Migration and health. *The Western Journal of Medicine, 139*(6), 848-853.

Foulds, H. J., Shubair, M. M, & Warburton, D. E. (2013). A review of the cardiometabolic risk experience among Canadian Metis populations. *Canadian Journal of Cardiology, 29*(8), 1006-1013.

Fuddy, L., Hirai, C., & Kaiwi, H. (2010). *Hawai'i Healthy Start program.* Association of Maternal and Child Health Programs. Retrieved from http://www.amchp.org/AboutAMCHP/Newsletters/Pulse/Archive/2010/June2010/Pages/Feature3.aspx

Fujita, R., Braun, K. L., & Hughes, C. K. (2004). The traditional Hawaiian diet: A review of the literature. *Pacific Health Dialog, 11*(2), 250-259.
Fukunaga, L. L., Uehara, D. L., & Tom, T. (2011). Perceptions of diabetes, barriers to disease management, and service needs: A focus group study of working adults with diabetes in Hawaii. *Preventing Chronic Disease, 8*(2), A32.
Galinsky, A. M., Zelaya, C. E., Barnes, P. M., & Simile, C. (2017). Selected health conditions among Native Hawaiian and Pacific Islander adults: United States, 2014. *NCHS Data Brief, 277*, 1-8.
Galinsky, A. M., Zelaya, C. E., Simile, C., & Barnes, P. M. (2017). Health conditions and behaviors of Native Hawaiian and Pacific Islander persons in the United States, 2014. *Vital Health Statistics, 3*(40), 1-99.
Garg, A., Jack, B., & Zuckerman, B. (2013). Addressing the social determinants of health within the patient-centered medical home. *Journal of the American Medical Association, 309*(19), 2001-2002.
Gellert, K. S., Aubert, R. E., & Mikami, J. S. (2010). Ke ‘Ano Ola: Molokai’s community-based healthy lifestyle modification program. *American Journal of Public Health, 100*(5), 779-783.
Global Initiative for Asthma. (2019). *Global strategy for asthma management and prevention.* Retrieved from https://www.ginasthma.org
Gottlieb, K. (2013). The Nuka system of care: Improving health through ownership and relationships. *International Journal of Circumpolar Health, 72*(1). doi: 10.3402/ijch.v72i0.21118
Grandinetti, A., Kaholokula, J. K., Mau, M., & Chow, D. (2010). Detecting cardiometabolic syndrome using World Health Organization public health action points for Asians and Pacific Islanders. *Ethnicity and Disease, 20*(2), 123-128.
Grandinetti, A., Kaholokula, J. K., Theriault, A., Mor, J., Chang, H., & Waslien, C. (2007). Prevalence of diabetes and glucose intolerance in an ethnically diverse rural community of Hawai'i. *Ethnicity and Disease, 17*, 250-255.
Guo, M. W., Ahn, H. J., Juarez, D. T., Miyamura, J., & Sentell, T. L. (2015). Length of stay and deaths in diabetes-related preventable hospitalizations among Asian American, Pacific Islander, and White older adults on Medicare, Hawai‘i, December 2006–December 2010. *Preventing Chronic Disease, 12*, 150092. doi: http://dx.doi.org/10.5888/pcd12.150092.
Gutmanis, J. (1983). *Na pule kahiko: Ancient Hawaiian prayers.* Honolulu, HI: Editions Limited.
Halterman, J. S., Szilagyi, P. G., Fisher, S. G., Fagnano, M., Tremblay, P., Conn, K. M., … Borrelli, B. (2011). Randomized controlled trial to improve care for urban children with asthma: Results of the School-Based Asthma Therapy trial. *Archives of Pediatrics & Adolescent Medicine, 165*(3), 262–268. doi:10.1001/archpediatrics.2011.1
Halterman, J. S., Borrelli, B., Fisher, S., Szilagyi, P., & Yoos, L. (2008). Improving care for urban children with asthma: Design and methods of the School-Based Asthma Therapy (SBAT) trial. *The Journal of Asthma, 45*(4), 279-286. doi:10.1080/02770900701854908.
Hawai‘i Department of Business, Economic Development & Tourism. (n.d.). *Population characteristics by detailed race (summary file 2).* Retrieved from http://census.hawaii.gov/Census_2010/SF2/
Hawai‘i Department of Health. (2014). *Family Health Services division profiles 2014.* Retrieved from http://health.hawaii.gov/about/files/2015/01/FHSD_Profiles2014.pdf
Hawai‘i Department of Health. (2016). *Hawai‘i Department of Health strategic plan 2015-2018.* Retrieved from https://health.hawaii.gov/opppd/files/2013/04/Hawaii-Department-of-Health-Strategic-Plan-2015-2018-081616.pdf
Hawai‘i Department of Health. (2017). *2017-2019 Hawaii state plan on aging.* Retrieved from https://www.hawaiiadrc.org/Portals/_AgencySite/StatePlan_Apr26.pdf
Hawai‘i Department of Health. (2019). *2019-2023 Hawaii state plan on aging.* Retrieved from https://hawaiiadrc.org/Portals/_AgencySite/State%20Plan/2019-2023%20Hawaii%20State%20Plan%20on%20Aging%20rev%2005-17-19.pdf
Hawaiian Community Assets. (2015). *Recommendations to address Hawaii’s homeless crisis.* Retrieved from http://www.hawaiiancouncil.org/wp-content/uploads/2015/11/2015-Native-Hawaiian-Housing-Recommendations.pdf
Hawai‘i Health Data Warehouse. (2011). Access to health services [data file]. Retrieved from http://hhdw.org/health-reports-data/category/access-health-services/
Hawai‘i Health Data Warehouse. (2013). *Lifetime and current asthma in Hawaii.* Retrieved from http://hhdw.org/wp-content/uploads/YRBS_ChronicDiseases_IND_00001.pdf

Hawai‘i Health Data Warehouse. (2014). *Health-general health status, for the State of Hawaii, for the Year(s) – 2011, 2012, 2013, 2014.* Retrieved from http://hhdw.org/wp-content/uploads/BRFSS_General-Health_IND_00001_20112.pdf

Hawai‘i Health Data Warehouse. (2015). Birth data. Retrieved from http://hhdw.org/health-reports-data/data-source/vital-statistics/birth-data/

Hawai‘i Health Data Warehouse. (2016). *Diabetes prevalence (Categorical).* Retrieved from http://hhdw.org/wp-content/uploads/BRFSS_Diabetes_IND_00001_2011.pdf

Hawai‘i Health Data Warehouse. (2017). *Pregnancy Risk Assessment Monitoring System PRAMS health indicator report 2007 - 2013.* Retrieved from http://hhdw.org/health-reports-data/data-source/prams-reports/

Hawai‘i Health Data Warehouse. (2017). *Infant deaths in Hawai‘i.* Retrieved from http://hhdw.org/wp-content/uploads/Vitals_Infant-Deaths_IND3.pdf

Hawai‘i Tumor Registry. (2016). *Hawai‘i cancer at a glance, 2009-2013.* Available from www.uhcancercenter.org/images/pdf/HTR_cancer_booklet.pdf

Hayes, D. (2016). *Trends in teen pregnancy and births in Hawai‘i* [PowerPoint presentation]. Family Health Services Division, Hawai‘i State Department of Health.

Heckler, M. (1985). *Report of the Secretary's taskforce on Black and minority health.* U.S. Department of Health and Human Services.

Hirai, A. H., Hayes, D. K., Taualii, M. M., Singh, G. K., & Fuddy, L. J. (2013). Excess infant mortality among Native Hawaiians: Identifying determinants for preventive action. *American Journal of Public Health, 103*(11), e88–e95.

Horky, S. C., Kleinman, S. H., & Firth, D. G. (2007). A comparison of parent and provider beliefs about asthma in children. *Pediatric Asthma, Allergy & Immunology, 20*(1), 36-47.

Hsu, J., Qin, X., Beavers, S. F., & Mirabelli, M. C. (2016). Asthma-related school absenteeism, morbidity, and modifiable factors. *American Journal of Preventive Medicine, 51*(1), 23-32.

Humphry, J., Jameson, L. M., & Beckham, S. (1997). Overcoming social and cultural barriers to care for patients with diabetes. *Western Journal of Medicine, 167*(1), 138-144.

Humphry, J., & Reinhardt, T. L. K. (1998). Disease management: The interface between Hawaiian health and the Western health care system. *Pacific Health Dialog, 5*(2), 370-374.

iMOKO. (n.d.). Healthier Kids @ Your Fingertips. Retrieved from http://public.imoko.com/about/

Institute of Medicine. (2002). *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: National Academies Press.

Jessop, H., Li, D., Katz, A. R., & Hurwitz, E. L. (2019). Asthma prevalence disparities and differences in sociodemographic associations with asthma, between Native Hawaiian/Other Pacific Islander, Asian, and White adults in Hawai‘i: Behavioral Risk Factor Surveillance System (BRFSS), 2001-2010. *Ethnicity & Health, 24*(1), 1-23. doi:10.1080/13557858.2017.1297775

Johnson, D. B., Oyama, N., LeMarchand, L., & Wilkens, L. (2004). Native Hawaiians mortality, morbidity, and lifestyle: Comparing data from 1982, 1990, and 2000. *Pacific Health Dialog, 11*(2), 120-130.

Kaholokula, J. K. (2015). Patient perspectives on the Hula Empowering Lifestyle Adaptation Study: Benefits of dancing hula for cardiac rehabilitation. *Health Promotion Practice, 16*(1), 109–114.

Kaholokula, J. K., Crabbe, K. M., Irvin, L., Kim, L., Aluli, N. A., Kekauoha, P., …Paishon-Duarte, M. (2016). *Native Hawaiian Health Task Force: 2017 preliminary report and recommendations.* Report to the Twenty-Ninth Legislature, State of Hawai‘i. Honolulu, HI: Hawai‘i Public Health Institute and the University of Hawai‘i.

Kaholokula, J. K., Dillard, A., Yoshimura, S., Palakiko, D. M., Hughes, C., & Townsend, C. (2014). The PILI 'Ohana Project: A community-academic partnership to achieve metabolic health equity in Hawai‘i. *Hawai‘i Journal of Medicine and Public Health, 73*(12 Suppl. 3), 29-33.

Kaholokula, J. K., Look, M. A., Wills, T. A., de Silva, M., Mabellos, T., Seto, T. B., …Kā-HOLO Project. (2017). Kā-HOLO Project: A protocol for a randomized controlled trial of a native cultural dance program for cardiovascular disease prevention in Native Hawaiians. *BMC Public Health, 17*(1), 321. doi:10.1186/s12889-017-4246-3

Kaholokula, J. K., Nacapoy, A. H., Grandinetti, A., & Chang H. K. (2008). Association between acculturation modes and Type 2 diabetes among Native Hawaiians. *Diabetes Care, 31*(4), 698-700.

Kaholokula, J. K., Townsend, C. K. M., Ige, A., Sinclair, K. A., Mau, M. K., Leake, A., & Hughes, C. (2013). Socio-demographic, behavioral, and biological variables related to weight loss in Native Hawaiians and other Pacific Islanders. *Obesity, 21*(3), E196–E203.

Kahuku Health Center handy to hundreds of campus patients. (2014, February 19). *Midweek.* http://www.midweek.com/kahuku-health-center-handy-hundreds-campus-patients-2/

Kamaka, M. L. (2010). Designing a cultural competency curriculum: Asking the stakeholders. *Hawai'i Medical Journal*, *69*(6 Suppl. 3), 31–34.

Kamaka, M., Wong, V., Carpenter, D., Kaulukukui, M., & Maskarinec, G. (2017). Kakou: Collaborative cultural competency. In W. K. Mesiona Lee and M. A. Look (Eds.), *Ho'i hou ka mauli ola: Pathways to Native Hawaiian health. Vol. 5, Hawai'inuiākea.* Honolulu, HI: Hawai'inuiākea School of Hawaiian Knowledge and University of Hawai'i Press.

Ka'opua, L. S., Park, S. H., Ward, M. E., & Braun, K. L. (2011). Testing the feasibility of a culturally tailored breast cancer screening intervention with Native Hawaiian women in rural churches. *Health & Social Work, 36*(1), 55-65.

Kataoka-Yahiro, M. R., Wong, K. A., Tamashiro, J., Page, V., Ching, J., & Li, D. (2012). Evaluation of the National Kidney Foundation of Hawaii's Kidney Early Detection Screening program. *Hawai'i Journal of Medicine & Public Health: A Journal of Asia Pacific Medicine & Public Health, 71*(7), 186–192.

Kelli, H. M., Kassas, I., & Lattouf, D. M. (2015). Cardiometabolic syndrome: A global epidemic. *Journal of Diabetes and Metabolism, 6*(3), 513.

King, G. L., McNeely, M. J., Thorpe, L. E., Mau, M. L., Ko, J., Liu, L. L., …Chow, E. A. (2012). Understanding and addressing unique needs of diabetes in Asian Americans, Native Hawaiians, and Pacific Islanders. *Diabetes Care, 35*(5), 1181–1188. doi:10.2337/dc12-0210

Kittler, P., & Sucher, K. (2001). *Food and Culture* (3rd ed.). Belmont, CA: Wadsworth/Thomson Learning.

Kokua Kalihi Valley. (n.d.). *Ehuola.* Retrieved from https://www.rootskalihi.com/ehuola-1/

Lee, K., Palacio, C. Alexandraki, I., Stewart, E., & Mooradian, A. D. (2011). Increasing access to health care providers through medical home model may abolish racial disparity in diabetes care: Evidence from a cross-sectional study. *Journal of the National Medical Association, 103*(3), 250-256.

Lepule, T., & Kwoh, S. (2014). *A community of contrasts: Native Hawaiian and Pacific Islanders in the United States.* Los Angeles, California: Empowering Pacific Islander Communities. Retrieved from https://advancingjustice-la.org/what-we-do/policy-and-research/demographic-research/community-contrasts-native-hawaiians-and-pacific

Liaison Committee on Medical Education. (2016). *Functions and structure of a medical school: Standards for accreditation of medical education programs leading to the MD degree*. Retrieved from https://med.virginia.edu/ume-curriculum/wp-content/uploads/sites/216/2016/07/2017-18_Functions-and-Structure_2016-03-24.pdf

Liu, L. L., Yi, J. P., Beyer, J., Mayer-Davis, E. J., Dolan, L. M., Dabelea, D. M., …SEARCH for Diabetes in Youth Study Group. (2009). Type 1 and Type 2 diabetes in Asian and Pacific Islander U.S. youth: The SEARCH for Diabetes in Youth study. *Diabetes Care, 32*(Suppl. 2), S133–S140. doi:10.2337/dc09-S205

Look, M. A., Trask-Batti, M. K., Agres, R., Mau, M. L., & Kaholokula, J. K. (2013). *Assessment and priorities for health & well-being in Native Hawaiians & other Pacific peoples.* Honolulu, HI: Center for Native and Pacific Health Disparities Research, University of Hawai'i at Mānoa.

Magge, S. N., Goodman, E., & Armstrong, S. C. (2017). *The metabolic syndrome in children and adolescents: Shifting the focus to cardiometabolic risk factor clustering.* American Academy of Pediatrics Clinical Report.

Maskarinec, G., Grandinetti, A., Matsuura, G., Sharma, S., Mau, M., Henderson, B., & Kolonel, L. (2009). Diabetes prevalence and body mass index differ by ethnicity: The multiethnic cohort. *Ethnicity and Disease, 19*(1), 49–55.

Maskarinec, G. G., Look, M., Tolentino, K., Trask-Batti, M., Seto, T., de Silva, M., & Kaholokula, J. K. (2015). Patient perspectives on the Hula Empowering Lifestyle Adaptation Study: Benefits of dancing hula for cardiac rehabilitation. *Health Promotion Practice, 16*(1), 109–114. doi:10.1177/1524839914527451

Mau, M. K., Grandinetti, A., Arakaki, R. F., Baker-Ladao, N. K, Chang, H. K., Curb, J. D., & Kinney E. K. (1997). The insulin resistance syndrome in Native Hawaiians. *Diabetes Care, 20*(9), 1376-1380.

Mau, M. K., Kaholokula, J. K., West, M. R., Leake, A., Efird, J. T., Rose, C., & Gomes, H. (2010). Translating diabetes prevention into Native Hawaiian and Pacific Islander communities: The PILI 'Ohana pilot project. *Progress in Community Health Partnerships: Research, Education, and Action, 4*(1), 7–16.

Mau, M. K., Sinclair, K., Saito, E. P., Baumhofer, K. N., & Kaholokula, J. K. (2009). Cardiometabolic health disparities in Native Hawaiians and other Pacific Islanders. *Epidemiological Review, 31,* 113-129.

Maunakea, A. K., Chepelev, I., Cui, K., & Zhao, K. (2013). Intragenic DNA methylation modulates alternative splicing by recruiting MeCP2 to promote exon recognition. *Cell Research, 23*(11), 1256–1269. http://doi.org.eres.library.manoa.hawaii.edu/10.1038/cr.2013.110

Maunakea, A. K., Chepelev, I., & Zhao, K. (2010). Epigenome mapping in normal and disease states. *Circulation Research, 107*(3), 327–339.

McEligot, A. J., McMullin, J., Pang, K., Bone, M., Winston, S., Ngewa, R., & Tanjasiri, S. P. (2010). Diet, psychosocial factors related to diet and exercise, and cardiometabolic conditions in Southern Californian Native Hawaiians. *Hawai'i Medical Journal, 69*(5 Suppl. 2), 16–20.

Merrell, R. C., & Doarn, C. R. (2014). m-Health. *Telemedicine Journal and E-Health, 20*, 99–101.

Mokuau, N., Braun, K. L, & Daniggelis, E. (2012). Building family capacity for Native Hawaiian women with breast cancer. *Health and Social Work, 37*(4), 216-224.

Murray, C. J., Atkinson, C., Bhalla, K., Birbeck, G., Burstein, R., Chou, D., …Wulf, S. (2013). The state of U.S. health, 1990-2010: Burden of diseases, injuries, and risk factors. *JAMA, 310*(6), 591–608. doi:10.1001/jama.2013.13805

Nakagawa, K., Ito, C., & King, S. L. (2017). Ethnic comparison of clinical characteristics and ischemic stroke subtypes among young adult stroke patients in Hawai'i. *Stroke, 48*(1), 24-29.

Nakagawa, K., Lim, E., Harvey, S., Miyamura, J., & Juarez, D. T. (2016). Racial/ethnic disparities in the association between preeclampsia risk factors and preeclampsia among women residing in Hawai'i. *Maternal and child health journal, 20*(9), 1814–1824. doi:10.1007/s10995-016-1984-2

National Assembly on School-Based Health Care. (2011). *Benefits of school-based health centers.* Retrieved from https://livewell.marshall.edu/mutac/wp-content/uploads/2011/08/NASBHCadvocacy_factsheetbenefits.pdf

National Asthma Education and Prevention Program. (2007). *Expert panel report 3: Guidelines for the diagnosis and management of asthma.* Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK7232/

National Cancer Institute. (2016). *Cancer disparities.* Retrieved from https://www.cancer.gov/research/areas/disparities

National Center for Health Statistics. (2017). *National Health and Nutrition Examination Survey 2015-2016.* Retrieved from https://wwwn.cdc.gov/nchs/nhanes/continuousnhanes/overview.aspx?BeginYear=2015

National Consortium for Multicultural Education for Health Professionals. (2008). *Medical cultural competency legislation and regulation.* Retrieved from http://academic.udayton.edu/health/syllabi/Disparities/06HealthCareDisparities/Cultural%20Competency%20Laws.pdf

Native Hawaiian Health Research Consortium. (1985). *E ola mau: The Native Hawaiian health needs study.* Honolulu, HI: ALU LIKE, Inc.

Novotny, R., Oshiro, C. E. S., & Wilkens, L. R. (2013). Prevalence of childhood obesity among young multiethnic children from a health maintenance organization in Hawai'i. *Childhood Obesity, 9*(1), 35-42.

Novotny, R., Vijayadeva, V., Grove, J., Gittelson, J., Avila, J., Su, Y., & Murphy, S. (2012). Dietary intake among Native Hawaiian, Filipino, and White children and caregivers in Hawai'i. *Hawai'i Journal of Medicine & Public Health, 71*(12), 353.

Odom, S. K., Jackson, P., Derauf, D., Inada, M. K., & Aoki, A. H. (2019). Pilinahā: An indigenous framework for health. *Current Developments in Nutrition, 3*(Suppl. 2), 32-38. doi: 10.1093/cdn/nzz001

Office of Hawaiian Affairs. (2017). *Native Hawaiian health fact sheet 2017. Volume IV: Native Hawaiian health status.* Honolulu, HI.

Office of Minority Health. (2001). *National standards for culturally and linguistically appropriate services in health care.* Washington, DC: U.S. Government Printing Office. Retrieved from https://minorityhealth.hhs.gov/assets/pdf/checked/finalreport.pdf

Office of Minority Health. (2013). *National standards for Culturally and Linguistically Appropriate Services (CLAS) in health and health care* (2nd ed.). Washington, DC: U.S. Government Printing Office. Retrieved from https://www.thinkculturalhealth.hhs.gov/assets/pdfs/EnhancedNationalCLASStandards.pdf

Okihiro, M., Agustin, M., Garcia, B., Prothero, B. M., & Goebert, D. (2017). *Preliminary technical report: Wai'anae Coast Comprehensive Health Center needs assessment 2016 – Enhancing care, coordination and capacity across community sectors to improve asthma outcomes in high-risk children in Hawai'i.* Wai'anae, HI: Wai'anae Coast Comprehensive Health Center.

Omaye, Y. (2016, October 22). Facilities at Waianae campuses aid access, attendance. *Honolulu Star-Advertiser.* Retrieved from https://www.staradvertiser.com/2016/10/22/hawaii-news/facilities-at-waianae-schools-aid-access-and-attendance/

Oneha, M. F., Dodgson, J. E., DeCambra, M. H., Titcomb, C., Enos, R., & Morimoto-Ching, S. (2016). Connecting culturally and spiritually to healthy eating: A community assessment with Native Hawaiians. *Asian/Pacific Island Nursing Journal, 1*(3), 116.

Panapasa, S. V., Mau M. K., Williams, D. R., & McNally, J. W. (2010). Mortality patterns of Native Hawaiians across their lifespan: 1990–2000. *American Journal of Public Health, 100*(11), 2304-2310.

Pobutsky, A. M., Hirokawa, R., & Reyes-Salvail, F. (2003). Estimates of disability among ethnic groups in Hawai'i. *Californian Journal of Health Promotion, 1*(Special Issue: Hawai'i), 65-82. Retrieved from http://health.hawaii.gov/brfss/files/2013/11/EstimateOfDisability.pdf

Polite, N. N., Adams-Campbell, L. L., Brawley, O. W., Bickell, N., Carethers, J. M., Flowers, C. R.., …Paskett, E. D. (2017). Charting the future of cancer health disparities research: A statement from American Association for Cancer Research, the American Cancer Society, the American Society of Clinical Oncology, and the National Cancer Institute. *Journal of Clinical Oncology, 35*(26), 3075-3082. doi:10.1200/JCO.2017.73.6546

Pukui, M. K. (1983). 'Ōlelo no'eau: Hawaiian proverbs & poetical sayings. Honolulu, HI: Bishop Museum Press.

Ray, C. (2011). *Pediatrician perceptions of the Patient-Centered Medical Home model* (Master's thesis). Retrieved from https://scholarscompass.vcu.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1210&context=etd

Rosenthal, E. L., Rush, C. H., & Allen, C. G. (2016). *Understanding scope and competencies: A contemporary look at the United States community health worker field.* Progress report of the Community Health Worker (CHW) Core Consensus Project. Retrieved from https://sph.uth.edu/dotAsset/28044e61-fb10-41a2-bf3b-07efa4fe56ae.pdf

Saad, M. F., Lillioja, S., Nyomba, B. L., Castillo, C., Ferraro, R., De Gregorio, M., …Bogardus, C. (1991). Racial differences in the relation between blood pressure and insulin resistance. *New England Journal of Medicine, 324*, 733-739. doi:10.1056/NEJM199103143241105

Saljoughian, M. (2016). Cardiometabolic syndrome: A global health issue. *U.S. Pharmacist, 41*(2), HS19-HS21.

Schempf, A. H., Mendola, P., Hamilton, B. E., Hayes, D. K., & Makuc, D. M. (2010). Perinatal outcomes for Asian, Native Hawaiian, and other Pacific Islander mothers of single and multiple race/ethnicity: California and Hawai'i, 2003-2005. *American Journal of Public Health, 100*(5), 877-887.

Schwamm, L. H., Chumbler, N., Brown, E., Fonarow, G. C., Berube, D., Nystrom, K., …Tiner, A. C. (2017). Recommendations for the implementation of telehealth in cardiovascular and stroke care: A policy statement from the American Heart Association. *Circulation, 135*, e24-e44.

Schweitzer, R. J., Wills, T. A., Tam, E., Pagano, I., & Choi, K. (2017). E-cigarette use and asthma in a multiethnic sample of adolescents. *Preventive Medicine, 105*, 226-231. doi:10.1016/j.ypmed.2017.09.023

SEARCH for Diabetes in Youth. (n.d). *The SEARCH for diabetes in youth study.* Retrieved from https://www.searchfordiabetes.org/dspHome.cfm

Selbie, D., & Kippin, H. (2016, March 17). The journey to place based health. *Public health matters* [Blog]. Public Health England. Retrieved from https://publichealthmatters.blog.gov.uk/2016/03/17/the-journey-to-place-based-health/

Sentell, T. L., Ahn, H. J., Juarez, D. T., Tseng, C. W., Chen, J. J., Salvail, F. R., … Mau, M. L. (2013). Comparison of potentially preventable hospitalizations related to diabetes among Native Hawaiian, Chinese, Filipino, and Japanese elderly compared with whites, Hawai'i, December 2006-December 2010. *Preventing Chronic Disease, 10*, E123. doi:10.5888/pcd10.120340

Sentell, T. L., Ahn, H. J., Miyamura, J., & Juarez, D. T. (2015). Cost burden of potentially preventable hospitalizations for cardiovascular disease and diabetes for Asian Americans, Pacific Islanders, and Whites in Hawai'i. *Journal of Health Care for the Poor and Underserved, 26*(Suppl. 2), 63–82. doi:10.1353/hpu.2015.0068

Shen, J., Wilmot, K. A., Ghasemzadeh, N., Malloy, D. L., Burkman, G., Mekonnen, G., …Spurling, L. S. (2015). Mediterranean dietary patterns and cardiovascular health. *Annual Review of Nutrition, 35*, 425-449.

Shintani, T., Beckham, S., O'Connor, H. K., Hughes, C., & Sato, A. (1994). The Wai'anae Diet Program: A culturally sensitive, community-based obesity and clinical intervention program for the Native Hawaiian population. *Hawai'i Medical Journal, 53*, 136.

Sia, C., Tonniges, T. F., Osterhus, E., & Taba, S. (2004). History of the medical home concept. *Pediatrics, 113(5)*, 1473. Retrieved from http://pediatrics.aappublications.org/content/113/Supplement_4/1473.long

Siddiquil, F., Kurbasic, A., Lindblad, U., Nilsson, P. M., & Bennet, L. (2017). Effects of culturally adapted lifestyle intervention on cardio-metabolic outcomes: A randomized controlled trial in Iraqi immigrants to Sweden at high risk for Type 2 diabetes. *Metabolism Clinical and Experimental, 66,* 1-13.

Sinclair, K., Thompson, C., Makahi, E., Shea-Solatorio, C., Yoshimura, S., Townsend, C., & Kaholokula, J. K. (2013). Outcomes for a diabetes self-management intervention for Native Hawaiians and Pacific people: Partners in care. *Annals of Behavioral Medicine, 45*(1), 24-32.

Smedley, B., & Amaro, H. (2016). Advancing the science and practice of place-based intervention. *American Journal of Public Health, 106*(2), 197.

Southcentral Foundation. (2017). *Progress report.* Retrieved from https://www.southcentralfoundation.com/wp-content/uploads/2017/01/Progress-Report_2016.pdf

Stages of change model. (n.d.). Retrieved from http://www.cpe.vt.edu/gttc/presentations/8eStagesofChange.pdf

Stapleton, M., Howard-Thompson, A., George, C., Hoover, R., & Self, T. (2011). Smoking and asthma. *Journal of the American Board of Family Medicine, 24*(3), 313-322. *Retrieved from* http://www.jabfm.org/content/24/3/313.full

Tachibana, F., Orr, J., Davis, J., Heisman, M., & Tam, E. K. (2019). *Association of physician-diagnosed asthma with race in 10-year old Hawai'i Island schoolchildren.* Paper presented at the American Thoracic Society International Conference, Dallas, TX.

Tam, E., Miike, R., Labrenz, S., Sutton, A. J., Elias, T., Davis, J., …Avol, E. (2016). Volcanic air pollution over the island of Hawai'i – Emissions, dispersal, and composition: Association with respiratory symptoms and lung function in Hawai'i Island school children. *Environment International 92-93 (216),* 543-552.

Tomioka, M. S., Braun, K. L., Ah Cook, V., Compton, M., & Wertin, K. (2014). Improving behavioral and clinical indicators in Asians and Pacific Islanders with diabetes: Findings from a community clinic-based program. *Diabetes Research and Clinical Practice, 104*(2), 220-225.

Tomioka, M. S., Braun, K. L., Compton, M., & Tanoue, L. (2012). Adapting Stanford's chronic disease self-management program to Hawaii's multicultural population. *The Gerontologist, 52*(1), 121-132.

United States Department of Education. (2013). *Data display: Hawai'i. Identification of children with disabilities.* Retrieved from https://www2.ed.gov/fund/data/report/idea/partbspap/2013/hi-acc-stateprofile-11-12.pdf

United States Environmental Protection Agency. (2016). What climate change means for Hawai'i. Retrieved from https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-hi.pdf

University of Hawai'i at Mānoa Sea Grant College Program. (2014). *Climate change impacts in Hawai'i: A summary of climate change and its impacts to Hawaii's ecosystems and communities.* Retrieved from http://climateadaptation.hawaii.gov/wp-content/uploads/2015/11/ICAC-Handbook_16Sept2015.pdf

University of Hawai'i School of Nursing & Dental Hygiene. (2014). *Hawai'i keiki: Healthy and ready to learn.* Retrieved from http://www.nursing.hawaii.edu/hawaiikeiki

Van Sickle, D., Morgan, F., & Wright, A. L. (2003). Qualitative study of the use of traditional healing by asthmatic Navajo families. *American Indian and Alaska Native Mental Health Research, 11*(1), 1-18.

Van Sickle, D., & Wright, A. L. (2001). Navajo perceptions of asthma and asthma medications: Clinical implications. *Pediatrics, 108*(1), E11-E18.

Whitbeck, L. B., Adams, G. W., Hoyt, D. R., & Chen, X. (2004). Conceptualizing and measuring historical trauma among American Indian people. *American Journal of Community Psychology, 33*(3-4), 119-130.

Williams, J. W., Jackson, G. L., & Powers, B. J. (2012). *The patient-centered medical home. Closing the quality gap: Revisiting the state of the science.* Agency for Health Care Research and Quality. Available from www.effectivehealth care.ahrc.gov/reports/final.cfm

Wills, T. A., Pagano, I., Williams, R. J., & Tam, E. K. (2019). E-cigarette use and respiratory disorder in an adult sample. *Drug and Alcohol Dependence, 194,* 363-370. doi:10.1016/j.drugalcdep.2018.10.004

Withy, K. (2015). *Annual report on findings from the Hawai'i physicians workforce assessment project.* University of Hawai'i System Annual Report. Retrieved on 23 August 2017 from https://www.hawaii.edu/offices/eaur/govrel/reports/2016/act18-sslh2009_2016_physician-workforce_annual-report.pdf

Wong, W., Anderson, K. M., Dankwa-Mullan, I., Simon, M. A., & Vega, W. A. (2012). *The patient-centered medical home: A path toward health equity?* Discussion paper, Institute of Medicine, Washington, DC. Retrieved on 20 July 2019 from http://nam.edu/wp-content/uploads/2015/06/PatientCenteredMedicalHome.pdf

Wu ,Y., Braun, K., Onaka, A .T., Horiuchi, B. Y., Tottori, C. J., & Wilkens, L. (2017). Life expectancies in Hawai'i: A multi-ethnic analysis of 2010 Life Tables. *Hawai'i Journal of Medicine and Public Health, 76*(1), 9–14.

Yoshimoto, D. K., Robertson, N. T., & Hayes, D. K. (2014). Insights in public health: The Hawai‘i Home Visiting Network – Evidence-based home visiting services in Hawai‘i. *Hawai‘i Journal of Medicine and Public Health*, *73*(5), 155-160.

Young, T. L., D’Angelo, S. L., & Davis, J. (2001). Impact of a school-based health center on emergency department use by elementary school students. *Journal of School Health, 71*(5), 196-198.

Yuan, S., Karel, H., & Yuen, S. (2007). *Hawaii’s older adults: Demographic profile.* Honolulu, HI: University of Hawai‘i, Center on the Family. Retrieved from http://uhfamily.hawaii.edu/publications/brochures/OlderAdults_DemographicProfile.pdf



# Chapter Four:
# *Nutrition*

# Nutrition

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## Executive Summary

### *Increased Understanding*

Over the years there has been a growing awareness in Hawaiʻi, the United States, and the world about the importance of nutrition on one's overall health and well-being. Native Hawaiians, the Indigenous Peoples of Hawaiʻi, have also been impacted by this growing awareness.

- Nutritional awareness has been facilitated by public policy emanating from federal and state governments and reinforced by initiatives from non-government organizations, including the United Nations.
- Nutritional policies, programs and initiatives continue to have direct impact on Native Hawaiians, their families, and their communities.

### *Effective and Promising Approaches*

- Nutrition models focusing on Native Hawaiian culture and values related to traditional foods have proven to enhance the health and well-being of Native Hawaiian participants.
- Traditional food models have become a movement assisting in the reclamation of agricultural lands and aquaculture resources by Native Hawaiian and other community groups enhancing production for a growing demand for fresh local produce.

### *Gaps*

- Despite the past 30 years of sincere effort, Native Hawaiians continue to experience increasing prevalence of chronic illness and premature death from health conditions that are treatable and preventable.
- There are continuing gaps in knowledge relating to nutritional education for Native Hawaiians and their families.
- There are challenges to food production and distribution of island foods by those Native Hawaiians utilizing traditional production practices.
- Native Hawaiians living in rural areas generally lack access to clinical providers and health educators (particularly diabetes educators) providing nutritional and healthy choice information and instruction.
- Throughout Hawaiʻi there is an increasing need for Native Hawaiians and all others in the island population to understand and support the importance of moving towards food security.

### *Recommendations for Impact*

- Provide Native Hawaiians and their families and communities with access to comprehensive nutrition programs and resources.

- Recognize and implement Traditional Hawaiian diets as health programs.
- Increase the knowledge of traditional Hawaiian foods and practices while enhancing access.
- Establish food security and economic self-sufficiency in the Native Hawaiian community specifically and the island population in general.
- Increase the Native Hawaiian professional workforce in nutrition education and the production of traditional Hawaiian foods
- Increase access to healthy low-cost foods statewide, especially on the neighbor islands.
- Provide Native Hawaiians and their families with enhanced nutritional outreach and education focusing on food preparation and healthier eating.
- Develop specific public policy formulations relating to enhancing nutrition for Native Hawaiians.
- Enhance affordable technology and technology transfer for Native Hawaiian families and communities relating to good nutritional practices.

## Introduction

The purpose of this nutrition report is to highlight the current health status of Native Hawaiians in Hawai‘i based upon current related nutritional aspects of health and well-being. This report will identify specific public policy and non-government organization actions which have developed public policies which have positively impacted on improving Native Hawaiian nutrition since the initial E Ola Mau Health Study in 1985. Additionally, this report discusses Native Hawaiian nutritional needs; agency and community services and efforts to improve nutrition status; and some promising approaches and programs which have focused on native Hawaiians which demonstrate the critical role improved nutrition plays in ameliorating, controlling and avoiding chronic illnesses.

The 1985 E Ola Mau Health Study first revealed alarmingly high rates of Native Hawaiian chronic disease incidence and mortality rates that had persisted unchecked for six decades in Hawai‘i. The importance of nutrition health was highlighted in the 1985 E Ola Mau Report, including its relationship to prevailing mortality rates. Today, that relationship is increasingly clear. The current report provides updates on rates of heart disease, cancer, diabetes mellitus, obesity and overweight, and oral health…all health indices that are intricately tied to one’s diet. Over the thirty intervening years, Native Hawaiians continue to display high, unacceptable rates of mortality and morbidity. Access to health care services, traditional food and community food supplies, particularly in rural areas, continue to be highly challenging.

Access to health care services and traditional food and community food supplies, particularly in rural areas, continue to be highly challenging. Lack of transportation to health clinics, along with availability of these clinics in rural communities and on the neighbor islands, are barriers to seeking regular medical care. Availability of traditional foods is limited in part by restricted access to fresh water and land for farming of traditional Hawaiian food, as well as economic supports for taro farmers and farming. This serves to create disproportionate access to traditional foods among many of our Native Hawaiian families due to its rising costs. Additionally, as traditional food and farming practices and customs are being discarded or fading from memory, there has been a growing cultural disconnect between each passing generation. However, the resurgence in kalo farming in the 1970s and efforts to readopt traditional dietary practices in the 1980s have brought about a revival of cultural practice among Native Hawaiian

people. This has created an opportunity where health and nutrition strategies can be combined with cultural reeducation to broadly reach and interest more Native Hawaiian people.

One need only to look at eating practices across life spans to become informed about possible public health and community education strategies to improve nutrition for a designated population. This chapter reviews some promising practices over the past 30 years based upon traditional values that are being interwoven with today's innovations to improve Native Hawaiian health and well-being.

Since 1985, many community-based programs have been developed and tested with new innovations which have initiated an evolution in the study of holistic food systems and their components. While this report cannot fully address all elements of nutrition in Hawai‘i, there are points of intersection with diet and access to healthy food that impinge upon managing nutrients, food production, processing and distribution.

Also, social paradigms have begun to shift in Hawai‘i resulting in a new food sovereignty movement, and other local, national and worldwide initiatives founded in public policy which are starting to educate a growing populace on the importance of food in one's health and well-being.

**E Ola Mau Revisited**

In 1985, ALU LIKE initiated the *E Ola Mau Hawaiian Health Needs Assessment* with federal support provided by the U.S. Department of Health and Human Services. Five task forces were established, each focused on distinct aspects of Hawaiian health and well-being. One task force worked on the assessment of nutrition and dental health status in the Native Hawaiian community at that time.

The overall findings in Nutrition (culled from the findings for both nutrition and dental health):

- The traditional Native Hawaiian diet prior to foreign contact "was simple and limited in variety (fish, taro, sweet potato, breadfruit, yams, banana, greens, seafood & shellfish, limu (seaweed), coconut, sugar cane and mountain apple) but adequate to promote growth and maintain good health."
- For more than fifty years, dietary surveys in Hawai‘i have shown "a decline in the nutritional value of the diet of the Native Hawaiian"; particularly deficient in calories, protein, phosphorous, iron, vitamins A and C and thiamine.
- Over the years, while Native Hawaiians have generally continued to eat their traditional foods; these have become specialty foods as they have become expensive, lesser abundant, and more time consuming to prepare. These foods have become substituted with "foods high in energy, fats and sugar."
- There have been very few dietary surveys which have included ethnicity data and "since 1954, there have been no dietary survey data about Native Hawaiian families to determine any changes in dietary practices since that time."

There were more specific findings across the life cycle:

- Pregnant Women: Native Hawaiian women had "poor pregnant outcomes" (more fetal deaths, higher infant mortality rates, and a higher percentage of low birth weight infants); high number of teenage pregnancies; and poor health behaviors during pregnancy (drink alcohol, have poor diets, have anemia). However, there were positive findings: pregnant Native Hawaiian women in the previous decade were less overweight, had access to and took advantage of prenatal care early, and utilized more government programs such as Medicaid and WIC.
- Infants: The prevalence of Native Hawaiian women breast feeding at hospital discharge was 82%, but within eight weeks had dropped to about 52%, due to insufficient milk and/or sore nipples. Hawaiian infants generally consumed more food and were healthier than they were the decade earlier (perhaps due to WIC support).
- Preschool Children: Both extremes of energy malnutrition (overweight and underweight) were found among Hawaiian pre-school children. By age 4, Hawaiian pre-school children were more overweight than children in the 1970s. Underweight children whose mothers were WIC recipients were able to catch up in weight by 3-5 years.

- School age Children: Native Hawaiian children were tall when compared to their peers on the U.S. Continent and to Asians in Hawai‘i. Hawaiian school-aged children had the highest energy intake among all ethnic groups in Hawai‘i, but also the highest intake of high sugar and second high fat foods. At the junior high school level, Native Hawaiian students had the highest intake of sugar and the second highest intake of fat and calories.
- Adults: Native Hawaiian adults are at the greatest risk than other ethnic groups in Hawai‘i for cardiovascular disease, myocardial infarction, diabetes, hypertension, arthritis, gout, and cancers of the breast lung, and stomach. High fat diets are implicated in most of these cancers. High concentration of mutagens in some Hawaiian foods such as dry/salted fish and kalua pig was suspected to be a risk factor for cancer.

In 1985, food intake impacted poor oral health findings:

- Prior to foreign contact there was very little tooth decay in the Native Hawaiian population, and it was virtually non-existent in the young child.
- By 1930, tooth decay was “endemic” in Hawai‘i. The decline in dental health “was a change in diet from a high starch, low refined sugar diet to a high sugar, low starch diet.”
- Native Hawaiian children have one of the highest DMF (decayed, missing and/or filled teeth) rates in Hawai‘i.
- Native Hawaiian children have “the highest frequencies of consumption of caries-producing foods such as sweet beverages, dessert items, snacks and candy or gum.”
- A factor in the high caries rate in Hawai‘i is the “negligible fluoride content of Hawai‘i’s civilian water supply and the repeated defeats of proposals to fluoride it.”

Further discussion of the recommendations above may be found in the separate report on Oral Health.

**1985 Recommendations**

To address these findings, the Task Force made recommendations specific to nutrition:

- Develop programs in the Native Hawaiian community promoting breast-feeding.
- Develop additional nutritional programs for Native Hawaiians focusing on child nutrition.
- Develop nutrition education programs for Native Hawaiians focusing on families and children.
- Develop culturally-sensitive educational programs for Native Hawaiian children in elementary and secondary schools.
- Increase research on all aspects of diet and health promotion, including alcohol and drug abuse.
- Establish surveillance and monitoring of diets and health promotion of Native Hawaiians and other ethnic groups in Hawai‘i; support research to continually assess prevalence and incidence of environmental health problems among Native Hawaiians and in predominantly Native Hawaiian communities and to study the nutritional and dental risk factors and hazards in the social and physical environments.
- Insist that federal nutrition programs are accessible and responsive to Native Hawaiians needs.

These recommendations were included in the health study’s implementation plan entitled *A Preliminary Plan for Improving Native Hawaiian Health through Health Promotion, Disease Prevention and Health Protection*. Each recommendation identified target agency(ies), potential resources and lead agency(ies).

Since the 1985 publication of the *E Ola Mau* report, there have been major international, national, and local advances that have positively impacted these 1985 Nutrition recommendations.

**Increased Understanding**

- **Awareness facilitated by public policy emanating from federal and state governments and reinforced by initiatives from non-government organizations, including the United Nations.**

Since the publication of the *E Ola Mau Health Study* in 1985, there has been a remarkable increase in public understanding between the relationship between good nutrition and improved health and well-being. This has occurred because of a multitude of public policy developments spearheaded by Non-Government Organizations (NGOs) focusing on Indigenous Peoples; federal government initiatives focusing on Native Americans, including Native Hawaiians; and Hawai‘i state government initiatives focusing on Native Hawaiians.

**Public Policy: Non-Government Organizations (NGOs)**

- **United Nations**

Since the conclusion of World War II, the United Nations has stressed the importance of food in maintaining peoples' optimum health and well-being. In recent times, this has been more finitely defined for Indigenous Peoples in relation to protecting traditional lands for food production and maintaining traditional healing practices as part of the greater discussion around improving health and well-being.

UN Universal Declaration of Human Rights (1948)

In 1948, the United Nations put forth its Universal Declaration of Human Rights and as part of that in *Article 25* it states: *1) Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including **food**, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control; and 2) Motherhood and childhood are entitled to special care and assistance. All children whether born in or out of wedlock, shall enjoy the same social protection.*

This statement is the beginning of the international understanding and recognition of the importance of food and nutrition in promoting the good health and well-being of people and the critical importance of specifically focusing on the importance of nutrition of mothers and children.

UN Declaration of the Rights of Indigenous Peoples (2007)

In 2007, the United Nations adopted the UN Declaration of the Rights of Indigenous Peoples. It took 3 years before the United States agreed to sign the declaration. There are a number of articles with specific importance which relate directly to supporting the nutritional health of Indigenous Peoples which under the UN definition also include Native Hawaiians:

*Article 21: (1) Indigenous peoples have the right. Without discrimination, to the improvement of their economic and social conditions, including, inter alia, in the areas of education, employment, vocational training and retraining, housing, sanitation, **health** and social security. (2) States shall take effective measures and, where appropriate, special measures to ensure continuing improvement of their economic and social conditions. Particular attention shall be paid to the rights and special needs of indigenous elders, women, youth, children and persons with disabilities*

*Article 23: Indigenous peoples have the right to determine and develop priorities and strategies for exercising their right to development. In particular, indigenous peoples have the right to be actively involved in developing and determining **health**, housing and other economic and social programmes affecting them and, as far as possible, to administer such programmes through their own institutions.*

*Article 24: (1) Indigenous peoples have the right to their **traditional medicines** and to maintain their **health practices**, including the conservation of their vital **medicinal plants**, animals and minerals. Indigenous individuals also have the right to access, without any discrimination, to all social and health services. (2) Indigenous individuals have an equal right to the enjoyment of the **highest attainable standard of physical and mental health**. States shall take the necessary steps with a view to achieving progressively the full realization of this right.*

*Article 26: (1) Indigenous peoples have the right to the **lands**, **territories** and **resources** which they have traditionally owned, occupied or otherwise used or acquired. (2) Indigenous peoples have the right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired. (3) States shall give legal recognition and protection to those lands, territories and resources. Such recognition shall be conducted with due respect to the customs, traditions and **land tenure systems** of the indigenous peoples concerned.*

*Article 29: (1) Indigenous peoples have the right to the **conservation** and **protection of the environment** and the **productive capacity** of their lands or territories and resources. States shall establish and implement assistance programmes for indigenous peoples for such conservation and protection, without discrimination. (3) States shall also take effective measures to ensure, as needed, that programmes for monitoring, maintaining and **restoring the health** of indigenous peoples, as developed and implemented by the peoples affected by such materials, are duly implemented.*

*Article 31: Indigenous peoples have the right to **maintain**, **control**, **protect** and **develop** their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, **seeds**, **medicines**, **knowledge of the properties of fauna and flora**, oral traditions, literatures, designs, sports and traditional games and visual and performing arts. They also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions.*

UN System Standing Committee on Nutrition (1977)

The United Nations System Standing Committee on Nutrition (UNSCN) was created in 1977 as the administrative coordinating committee for the United Nations focusing on the nutritional needs and concerns of the world's population. The committee has a defined mandate to address global malnutrition "in all its forms".

UN Decade of Action on Nutrition (2016-2025)

One of the UN System Standing Committee on Nutrition's major achievement occurred in 2016 when on April 1, 2016, the UN General Assembly proclaimed the UN Decade of Action on Nutrition, 2016-2025.

The UN Decade of Action on Nutrition is a commitment of the nations of the world to undertake ten years of sustained and coherent implementation of policies and programs focusing on the elimination of famine and malnutrition and to strive for enhanced nutritional health and well-being of people throughout the world.

All of these efforts undertaken by the United Nations to shine a spotlight on the importance of nutrition in enhancing the health and well-being of the world's population have also had their effect by "setting the stage" for encouraging efforts to address the nutritional issues and concerns of Native Hawaiians through governmental acts and legislative efforts at the federal and state levels.

- **Papa Ola Lōkahi (Native Hawaiian Health Board)**

Papa Ola Lōkahi (POL) was established in 1987 by the Native Hawaiian community in an effort to address Native Hawaiian health and wellness issues in Hawai‘i and among the Native Hawaiian diaspora. Federal recognition of POL occurred in 1988 with the passage of the Native Hawaiian Health Care Act. The founding board members included the major agencies then focusing on health and well-being in the Native Hawaiian Community including ALU LIKE, Inc; Office of Hawaiian Affairs; E Ola Mau; State Department of Health; and the University of Hawai‘i.

Over the years, POL has worked with all of these board members on issues promoting nutritional health. In 1992, five Native Hawaiian Health Care Systems (NHHCS) established by island Native Hawaiian communities were added to the POL board. These organizations, too, have developed and maintained nutritionally based programs in their respective geographical areas.

For the Native Hawaiian diaspora, POL has worked through the Association of Hawaiian Civic Clubs and its Health Committee and a number of Native Hawaiian and Pacific Islander colleagues.

- **Hawaiian Civic Clubs**

The Hawaiian Civic Club (HCC) movement was established in 1918 by Prince Jonah Kuhio Kalaniana`ole in an effort to preserve and promote Hawaiian culture and well-being. Today 58 clubs are formed into the Association of Hawaiian Civic Clubs and are found throughout Hawai‘i and across the continental United States. The Health Committee of the Association has periodically focused on nutritional education projects and programs for its members.

- **Native Hawaiian and Other Pacific Islander Colleagues – EPIC/AAPCHO/APIHF**

On the national scene, there are colleague organizations which have worked closely at times with POL and the HHC on issues impacting on Native Hawaiian and Pacific Islander health and well-being. These organizations include Empowering Pacific Islander Communities (EPIC) headquartered in Las Angeles, CA; Association of Asian Pacific Community Health Organizations (AAPCHO) headquartered in San Leandro, CA; and the Asian Pacific Islander Health Forum (APIHF) located in Oakland, CA and Washington, D.C.

- **Ali‘i Trusts**

The Native Hawaiian community is unique among world communities of Indigenous Peoples in that Hawai‘i was a sovereign kingdom and that its past royalty had the foresight to create eleemosynary trusts with their wealth for the benefit of their people. These trusts play a major role in the lives of their beneficiaries which often touches upon their nutrition and healthy lifestyles.

- Bernice Pauahi Bishop Trust Estate (Bernice Pauahi Bishop)

Proceeds from the estate support the network of the Kamehameha Schools as well as provide support for public education from pre-schools through graduate studies. The different Kamehameha School campuses over the years have begun to serve nutritious meals using local food products.

- Lili`uokalani Trust (Queen Liliu‘okalani)

  The beneficiaries of the trust are orphaned and/or indigent Native Hawaiian children. In recent years the trust has begun to pay attention to promoting good health and well-being through healthy personal and community environments.

- William Charles Lunalilo Trust Estate (William Charles Lunalilo)

  The beneficiaries of this trust are elder residents of Lunalilo Home. In recent years, care has been taken to only provide nutritious meals for the residents.

- Queen Emma Trust (Queen Emma)

  Today, the Queen Emma Trust is a land trust whose proceeds go to support the Queen’s Medical Center. In years past the trust has had a much broader mission to improve the health and well-being of Native Hawaiian beneficiaries, including their nutrition and healthy lifestyles.

- **Native Hawaiian Health Care Systems (NHHCSs)**

  The Native Hawaiian Health Care Systems (NHHCSs) are five Native Hawaiian non-profit organizations designated to implement health and wellness initiatives identified in the Native Hawaiian Health Care Improvement Act. Two of the five Systems originally began as health research projects (Moloka‘i and Kaua‘i) while the other three grew out of community organizing around health issues and concerns (Hawai‘i, Maui, and O‘ahu). The Systems include:

- Hoʻōla Lāhui Hawaiʻi (Kauaʻi/Niʻihau)
- Ke Ola Mamo (Oʻahu)
- Nā Puʻuwai (Molokaʻi/Lanaʻi)
- Hui No Ke Ola Pono (Maui)
- Hui Mālama Ola Nā ʻŌiwi (Hawaiʻi)

Since their identification in the reauthorized 1992 Native Hawaiian Health Care Improvement Act, all of the Systems have developed their own nutrition programs with support from the State Nutritionist at the State Department of Health. The focus of these programs has been the respective Native Hawaiian communities on their respective islands.

- **Hawaii's Community Health Centers (CHCs)**

Hawaiʻi has developed a large network of fifteen community health centers and has five of the better, if not the best, models for health centers serving Indigenous Peoples. In 1985 there were only five CHCs in the state. Today, all the major Hawaiian islands have at least one CHC, and Oʻahu has seven centers. These are all funded under section 330 of the Public Health Service Act and provide nutrition education and information.

| | |
|---|---|
| • Kauaʻi | Kauaʻi Community Health Center |
| • Oʻahu | Kalihi Palama Health Center |
| | Kokua Kalihi Valley Comprehensive Family Services |
| | Koʻolauloa Health Center |
| | Wahiawa Center for Community Health |
| | Waiʻanae Coast Comprehensive Health Center |
| | Waikiki Health |
| | Waimanalo Health Center |
| • Molokaʻi | Molokaʻi Community Health Center |
| • Lanaʻi | Lanaʻi Community Health Center |
| • Maui | Mālama I Ke Ola Health Center (Community Clinic of Maui) |
| | Hana Health Center |
| • Hawaiʻi | Bay Clinic |
| | Hamakua Health Center |
| | West Hawaiʻi Community Health Center |

All of the centers have nutrition programs and one, Waiʻanae Coast Comprehensive Health Center, is noteworthy for its development of a diet program based upon the traditional Hawaiian diet. This program carries the name of the center. All the CHCs serve Native Hawaiians and four serve predominantly Native Hawaiian clients as they are located on or near Hawaiian homestead areas administered by the State Department of Hawaiian Home Lands. Kauai's CHC is also one of the five NHHCSs.

The impact of the CHCs on the health and well-being of Native Hawaiians has been and continues to be substantial.

**Federal Government**

In the last thirty-five years, there have been numerous laws passed and health studies undertaken by the federal government which have focused on promoting nutrition as part of disease prevention and health promotion. Native Hawaiians have greatly benefited from these actions.

Native Hawaiian Health Care Act – P.L. 100-579 (1988); Reauthorized as the Native Hawaiian Health Care Improvement Act - P.L. 102-396 (1992) and P.L. 111-148 (2010)

ALU LIKE's 1985 *E Ola Mau Health Study* initiated Congressional interest in the health and well-being of Native Hawaiians. Congress undertook a comparison study of the Native Hawaiian health status

findings in the report with those of other 'minority' populations in the United States through the Congressional Office of Technology Assessment (OTA). The report's findings gave rise to the passing of the Native Hawaiian Health Care Act in 1988. Nutritional initiatives focusing on improving Native Hawaiian health were included in federal legislation for the first time and have been included in the act's two reauthorizations.

Native Hawaiian Health Scholarship Program – P.L. 100-579 (1988); Reauthorized within the Native Hawaiian Health Care Improvement Act – P.L. 102-396 and P.L. 111-148

In an effort to address the great discrepancies within the health care professionals and Native Hawaiian recruitment as noted in the *E Ola Mau Health Study*, Congress passed this act. The Kamehameha Schools first administered the act's program, but its administration was transferred to Papa Ola Lokahi in 2002. The act identified nutrition as an eligible professional course of study. To date there have been 273 Native Hawaiian health scholars and while most of these have been in the field of medicine (59 physicians (MD and DO) and 7 physician assistants (MPAS), three have been specifically in Dietetics (MS) – "the study of diet and its effect on health especially with application of a scientific understanding of nutrition." Other Native Hawaiian health scholars include 7 in public health (MPH.), 47 in social work (M.S.W.),18 in clinical psychology (PhD and PsyD), 9 in pharmacy (PharmD). 11 in dental hygiene (DH), 11 in marriage and family therapy (MFT), 8 in dentistry (DDS and DMD), and 91 in nursing (AND, BSN, MSN and NP NM, and DNP). The continuing and increasing total of all these Native Hawaiian health scholars has greatly impacted positively on increasing healthy Native Hawaiians and families. It is noteworthy, also, that most of these scholars have chosen to continue to work in communities with Native Hawaiians even after completing their responsibilities for receiving scholarship assistance.

US Congressional Hearings on Native Hawaiian Health

Between 1990 and 2000, the US Congress held two extensive hearings on Native Hawaiian Health. The first was held in Honolulu in 1992 with the second being held in all the major communities on the islands of Kauaʻi, Molokaʻi, Lanaʻi, Hawaiʻi, and Oʻahu. Native Hawaiians and others presented testimony on just how critical nutrition was to their ongoing health and well-being. Additionally, the ongoing importance of federal programs related to these items was emphasized.

OMB 15, Revised Standards (1997)

Between 1983-1985 when the Native Hawaiian Health Consortium was undertaking its *E Ola Mau Health Study*, specific health data of Native Hawaiians was not readily available, particularly for the Native Hawaiian diaspora. The federal government had minority health data, but it had coupled together Native Hawaiians and other Pacific Islanders with Asians to create Asian Pacific American (APA) and/or American Pacific Islander (API) identifiers in the 1980s. These categories completely masked the underlying health status and related health needs of Native Hawaiians which generally experienced much greater health disparities than their Asian counterparts. Hawaii's Congressional delegation headed by Senator Daniel Akaka and his staff worked tirelessly to disaggregate Native Hawaiians these comingled identifiers. Success was finally achieved in 1997 when the Office of Management and Budget (OMB) agreed to disaggregate the two populations and created a new federal designation entitled "Native Hawaiian and Other Pacific Islander (NHOPI)" in its revised standards for federal reporting of racial and ethnic groups within the United States. This requirement was reiterated in the patient Protection and Affordable Care Act (see below).

Sadly, advocates for Native Hawaiian health data are still finding researchers and agencies and institutions still utilizing the former API identifier in their research designs and research reports. Despite this, the ability to access federal and state Native Hawaiian health data has greatly improved over the past thirty-five years since the release of the *E Ola Mau Health Study* as most in the federal and state agencies are aware and compliant with OMB's revised standards. This includes the reporting of minority population nutrition and nutrition-related data.

Patient Protection and Affordable Care Act - P.L. 111-148 (2010)

In section 4302, the Affordable Care Act (ACA) reinforced the requirement of collecting, analyzing, and reporting federal health data in accordance with OMB's Directive 15 (revised standards). Today, all national population health surveys must provide specific data on Native Hawaiian and Other Pacific Islanders (NHOPI) apart from Asian Americans (AA).

Additionally, throughout the act, there is reinforcement of the importance of nutrition in promoting personal health and well-being. This includes:

Section 2703 – provides states with the ability to provide professional nutritionists in "Health Homes" for federal healthcare enrollees with chronic conditions.

Section 2717 – Ensures quality of care for individuals by providing wellness and preventive disease programs which include nutritional programs.

Section 4001 – Establishes a National Prevention, Health Promotion and Public Health Council which includes recommendations to the President and Congress on nutrition and wellness.

Section 4004 – Establishes an education and outreach campaign regarding preventive benefits of proper nutrition, regular exercise, smoking cessation, obesity reduction, etc.

Section 4103 – Establishes a National Health and Nutrition Examination Survey to continue to monitor the nutritional health and well-being of Americans.

Section 4205 – Requires nutritional labeling of all standard menu items at "chain" restaurants.

Section 5313 – Provides grants projects promoting good nutrition.

National Institutes of Health (NCI, NLM)

Two institutes within the National Institutes of Health (NIH), the National Cancer Institute (NCI) and the National Library of Medicine (NLM), have been very active in providing financial support and visibility to the health and well-being of Native Hawaiians. NCI has worked closely with Papa Ola Lōkahi and other Native Hawaiian and Pacific Island-focused organizations to assist with cancer prevention programs since the early 1990s. NLM, likewise, has aided Papa Ola Lōkahi and other organizations in Hawai‘i supporting Hawaiian language translations related to health and well-being and the supporting practitioners of traditional Hawaiian healing practices. Its major exhibit "Native Voices" provided international recognition of the importance of these practices. One particular focus of this exhibit was the importance of proper nutrition in the pre-European arrival lifestyle of Native Hawaiians.

**Hawai‘i State Government**

A number of state initiatives have focused on the specific health and well-being of Native Hawaiians.

Hawai‘i Revised Statute – Native Hawaiians-Indigenous People

In 2011, the State of Hawai‘i officially recognized Native Hawaiians as the "Indigenous, Aboriginal Peoples of Hawai‘i."

Act 195, codified as section 10H-1 of the Hawai‘i Revised Statutes states:

*The Native Hawaiian people are hereby recognized as the only indigenous, aboriginal, maoli people of Hawai‘i.*

The importance of this designation is particularly relevant when reviewing the importance of the UN Declaration on the Rights of Indigenous Peoples, noted earlier in this report, on Native Hawaiians abilities to impact public policy.

Office of Hawaiian Affairs (1978)

The Office of Hawaiian Affairs (OHA) was established in 1978 by the Hawai‘i State Constitutional Convention to address the issues, concerns, and needs of Native Hawaiians as defined by state law.

The office has undertaken a number of research investigations and reports relating to the health and well-being of Native Hawaiians since 1985. One such project was *Hana Ola,* a nutrition-based project undertaken in the rural community of Hana, Maui. Two of OHA's more important reports are:

- *Kaneho`alani: Transforming the Health of Native Hawaiian Men*, 2017.
  *Complicating a deep understanding of kāne health is the absence of holistic research that would otherwise complement already-existing information. There is much that we do not know. For example, there is little data on illicit drug use.* ***Diet*** *and* ***nutrition data*** *could be expanded to include comprehensive nutritional examination surveys of traditional diets. It would be especially helpful to understand the "why" that motivates many of these outcomes. For example, why are kāne behaviors sometimes at odds with their own best interests, especially in cancer prevention*

- *Haumea: Transforming the Health of Native Hawaiian Women and Empowering Wahine Well-being,* 2018.
  *This report discusses the importance of proper diet and includes nutritional recommendations for wahine of all generations.*

Hawai'i State Department of Health

Most of the nutritional recommendations made in the *E Ola Mau Health Study* were directed towards the Hawai'i State Department of Health. The department over the years has "touched upon" each of the recommendations through its programs and/or studies, and planning efforts. Besides continuing with the major state health surveys including the Hawai'i Behavior Risk Factor Surveillance Survey (BRFSS) and the Hawai'i School Health Survey (HSHS) as well as maintaining the Hawai'i Health Data Warehouse, the State Department of Health has also conducted a number of special studies and reports including the report on *Nutrition, Physical Activity and Obesity Profile* (September 2012) and the *Hawai'i Physical Activity and Nutrition Plan 2013-2020* (2013).

Hawai'i State Department of Hawaiian Home Lands/NH Rehabilitation Fund

The State Department of Hawaiian Home Lands is noted in this section not because of what it has done in the area of nutrition, but rather because of what it could do. In 1978, the Hawai'i State Constitutional Convention establishes within the department the Native Hawaiian Rehabilitation Fund (NHRF). To date, the fund has been used to provide grants and loans to community groups on homestead lands and, more recently, to assist with infrastructure development. The fund, however, could be used to improve the health and well-being of beneficiaries of the program. The uses of the fund as defined in the Hawai'i Revised Statutes are identified as:

*The department shall use this money for the rehabilitation of native Hawaiians, native Hawaiian families, and Hawaiian homestead communities, which shall include the educational, economic, political, social, and cultural processes by which the general welfare and conditions of native Hawaiians are thereby improved and perpetuated.*

University of Hawai'i – John A. Burns School of Medicine Department of Native Hawaiian Health (DNHH) and the Department of Human Nutrition, Food, and Animal Sciences (HNFAS)

The University of Hawai'i has the only medical school in the United States with a department dedicated entirely to its Indigenous Peoples' health – the health of native Hawaiians. Over the years, the DNHH has undertaken a number of nutrition-based programs and health initiatives focusing on the social determinants of health.

Additionally, the University of Hawai'i administers the only Didactic Program in Dietetics (DPD) in Hawai'i through its Department of Human Nutrition, Food, and Animal Sciences (HNFAS).

Besides all these aforementioned developments, which have established public policy, much knowledge has been gained from traditional Hawaiian diet programs which provide a foundational understanding of the role of diet on Native Hawaiian health today. It is through these landmark studies that have occurred after the 1985 E Ola Mau report that a clearer picture of the relationship between nutrition and diet and Native Hawaiian well-being can be gleaned. These studies with their efforts to change personal food preferences have clearly shown the impact of changes in food supply and resultant use and health and well-being. Because supermarket shelves today are full of cheap, poor-quality,

processed food, the importance of shifting personal preferences to nutritious and healthy food choices are imperative for a healthy and well Native Hawaiian population.

**Impacts of Poor Nutrition**

Poor nutrition has overtaken tobacco to become the leading contributor to premature death in the U.S., contributing to six of the ten leading causes of chronic illness (disease).

| ***Leading Contributors of Premature Death in the U.S. and Related Number of Deaths, 2016*** | | |
|---|---|---|
| 1 | **Dietary risks (other than BMI)** | **529,999** |
| 2 | Tobacco smoking | 492,437 |
| 3 | **High blood pressure** | **481,501** |
| 4 | **High Body Mass Index (BMI)** | **385,965** |
| 5 | **High fasting plasma glucose** | **376,498** |
| 6 | **High total cholesterol** | **233,233** |
| 7 | **Impaired kidney function** | **174,559** |
| 8 | Alcohol and drug use | 155,575 |
| 9 | Air pollution | 105,084 |
| 10 | Low physical activity | 91,637 |

Source: University of Washington, Institute for Health Metrics and Evaluation, 2017

Nutrition has a critical role in the prevention, treatment and control of chronic health conditions that currently threaten the health and lives of Native Hawaiians. Prior to the emergence of pharmaceutical medications (drugs), food was used as medicine to help prevent, manage, and treat symptoms and imbalances in chronic health conditions.

Poor nutrition have been shown to contribute to about 530,000 deaths per year in the United States (U.S.) (University of Washington, 2017). Worldwide, unhealthy diets accounts for more deaths than any other risk factor, as it also contributes to intermediate risk factors for chronic disease, such as high blood pressure, obesity and high fasting blood glucose levels and total cholesterol levels (Ibid; World Health Organization, 2005)

Poor diet has been associated with increased risk of other diseases as well, such as osteoporosis and bone fractures, dental caries, and, more recently, dementia, many of which are the leading causes of mortality in Hawai‘i. (Office of the Surgeon General (US), 2004; Mobley, Marshall, Milgrom, & Coldwell, 2010; Safouris, Tsivgoulis, Sergentanis, & Psaltopoulou, 2015 )

| ***Top Ten Leading Causes of Death in Hawai‘i and Related Number of Deaths, 2013-15*** | | |
|---|---|---|
| 1 | **Major cardiovascular diseases** | **3,360** |
| 2 | **Malignant neoplasms (cancer)** | **2,374** |
| 3 | All other diseases (residual) | 1,379 |
| 4 | Influenza/pneumonia | 476 |
| 5 | Accidents (unintentional injuries) | 472 |
| 6 | **Alzheimer’s disease** | **332** |
| 7 | Chronic lower respiratory diseases | 304 |
| 8 | **Diabetes mellitus** | **266** |
| 9 | Intentional self-harm (suicide) | 185 |
| 10 | Symptoms, signs & abnorm clinical/lab findings NEC | 148 |
| ****Poor diet considered a risk factor*** | | |

(Source: Hawaii Department of Health, 2014)

Diet patterns also increase risk of chronic diseases. Native Hawaiians are particularly prone to some of these risk factors:

*Overweight and obesity.* Overweight and obesity, as measured through Body Mass Index (BMI), has been linked to several chronic and other illnesses, including type 2 diabetes, heart disease, cancer, asthma, sleep apnea, arthritis, depression, and reduced cognition. The cost of medical care is estimated to be from 36% to 150% higher among those obese vs. those non-obese (Cawley & Meyerhoefer, 2012).

While there are many factors that contribute to the obesity epidemic today, it has been largely attributed to poor diet. While initially believed to be a matter of balancing calories consumed versus calories expended, recent research has shown that there are specific food and food patterns that contribute to obesity. Foods high in trans, saturated fat, and added sugars, refined grains, red and processed meats, and dairy were all shown to promote weight gain. Whole grains, vegetables, fruits—plant-based diets—were protective of weight gain.

Native Hawaiians have the highest combined prevalence of overweight and obesity compared to all other major ethnic groups in Hawai‘i. About 75.7% of Native Hawaiians are overweight or obese, compared to 58.1% in the State of Hawai‘i. (Hawaii Department of Health, 2014). This translates to roughly 3 of every 4 Native Hawaiians being overweight/obese

In a study examining the relationship between specific foods and BMI among Native Hawaiians and other ethnic groups, consuming red meat (beef and pork) and processed meat was associated with a higher risk for excess weight; a slightly elevated risk was associated with chicken and fish (Maskarinec et al., 2006). Significant and inverse associations were found with vegetables and fruit and obesity.

| ***Prevalence of Risk Factors and Behaviors among Native Hawaiians and the State of Hawai'i, 2015*** | | |
|---|---|---|
| | NH | State |
| Overweight | 32.3 | 34.3 |
| Obese | 42.4 | 22.7 |
| High blood pressure | 33.3 | 32 |
| High cholesterol | 74.8 | 76.9 |
| Fruit/fruit juice* | 46.2 | 41.3 |
| Vegetables** | 28.2 | 21.4 |
| Soda | 18.6 | 12.1 |
| Fruit drinks | 17.4 | 10 |
| **Ate fruits or drank 100% fruit juice less than once per day*<br>***Ate vegetables (including beans and lentils) less than once per day* (Hawaii Department of Health, 2014) | | |

Low fruit and vegetable intake. Fruits and vegetables (FV) are rich sources of vitamins, minerals, antioxidants, fiber, and phytochemicals demonstrated to play a role in prevention or reduced risk of chronic disease. Low intake of FV has been associated with heart disease, most cancers, obesity, high blood pressure, high cholesterol levels, osteoporosis, and depressive disorders (Pem & Jeewon, 2015; Slavin & Lloyd, 2012; Qui, Cao, Tian, He, Chen, & Chen 2017; LaChance & Ramsey, 2018).

Native Hawaiians traditionally ate a plant-based diet, with vegetables making up about 78% of the diet. According to a 2015 survey, an estimated 28.2% of Native Hawaiians ate vegetables less than once per day, compared to 21.4% within the State of Hawai‘i. Similar trends were seen with fruit, with almost half (46.2%) of Native Hawaiians eating fruit or drinking 100% fruit juice less than once per day, verses, 41.3% within the State (Hawai‘i Department of Health, 2014).

Sugar-sweetened beverages intake. Sugar-sweetened beverages (SSBs) are one of the main sources of added sugar in the diet today, accounting for half of all added sugars consumed in the U.S. Examples include carbonated soda drinks, fruit drinks, energy drinks, sports drinks, sweetened waters, and coffee and tea beverages with added sugars. Other sources include packaged snacks and sweets, such as cakes, pies, doughnuts, pastries, ice cream, and candies. Frequent SSB consumption has been associated with

obesity, heart disease, kidney disease, dental caries, non-alcoholic fatty liver disease, and gout. An estimated 30.8% of Native Hawaiians drank sweetened fruit drinks and soda at least one or more times per day, compared to 20.3% in the State (Hawai‘i Department of Health, 2014).

Red and processed meats intake. The traditional Hawaiian diet was comprised of about 12% protein, primarily reef fish and shellfish. Western diets in the U.S. today comprise an average of 16% protein, with beef (including processed meats) and chicken being the two primary sources. A growing number of studies have demonstrated a strong association between red and processed meats and heart disease, stroke, cancer, type 2 diabetes, and obesity (Zheng et al. 2019; Pan, Sun, Bernstein, Schulze, Manson, & Willett, 2011; Wang & Beydoun, 2009). In a multiethnic population study, researchers concluded that limiting red and processed meat consumption may prevent about 30% of diabetes cases. When compared across other ethnic groups, Native Hawaiians were found to be the highest consumers of pork, red meat, and processed red meat (Steinbrecher, Erber, Grandinetti, Kolonel, & Maskarinec, 2010)

Alcohol intake. Alcohol affects numerous body parts and functions in the body, increasing risk for heart disease, cancer, gout, depression, cirrhosis, dementia, and high blood pressure (National Institute on Alcohol Abuse and Alcoholism, 2019). For heart disease and cancer prevention, it is recommended to not drink alcohol at all. Even modest amounts increase risk for breast, mouth and throat, and esophageal cancer. For example, for every 10 grams of alcohol consumed (one standard drink contains 15 grams of alcohol), a 7% increased risk of breast cancer was observed. Alcohol is also a major contributor to abdominal fat accumulation, and a risk factor for heart disease and type 2 diabetes. A higher proportion of Native Hawaiians consume alcohol compared to other ethnic groups in Hawai‘i. More than one-fourth (27.1%) of Native Hawaiians participated in binge drinking at least once in the past 30 days (having 5+ drinks/day for men and 4+ drinks/day for women). Additionally, about 12.2% of Native Hawaiians participated in heavy drinking in the past 30 days (>2 drinks per day for men and >1 drink per day for women) (Hawai‘i Department of Health, 2014).

Infants and Breastfeeding Studies around the world have proven breastfeeding provides advantages to both mothers and babies, particularly in lowering risk of obesity and rates of chronic diseases for the lifetime of both mother and child. While data is limited for Native Hawaiian women, of all women who gave birth in Hawai‘i between 2009-2011, 94% breastfed their infants at least once. Of those who breastfed at least once, 78.7% were still breastfeeding at 8 weeks, but less than half (45.2%) were breastfeeding exclusively (no formula, juice or food) at the same 8 weeks.

Early initiation of breastfeeding in Hawai‘i exceeded Healthy 2010 guidelines, but early breastfeeding among Native Hawaiian women was much lower.

In Hawai‘i, women cited many reasons for stopping breastfeeding:

- 46.6% reported they believed they were not producing enough milk
- 33.3% reported that their babies were not satisfied with breastmilk alone
- 29% reported difficulty in nursing or latching
- 21.6% reported that it was because they returned to work or school; and
- 21.2% reported nipples that were sore, cracked or bleeding

One national study reported in 2010 that if 90% of infants were exclusively breastfed for the recommended 6 months, the U.S. would save $13 billion in healthcare costs every year.

Preschool and school-aged children Overweight and obesity are highest among 4 and 5 year old children enrolled in Hawai‘i public schools. Communities with the highest proportion of overweight children are those communities with larger numbers of families with lower educational attainment, lower

income, higher usage of government assistance, higher unemployment. Native Hawaiian children have the highest risk of being overweight and suffering from obesity when compared to other Hawai‘i ethnic groups.

Data from the school garden programs demonstrate that school-age children who participate in growing, harvesting, and even preparing their own food tend to make healthy diet choices. Additional data indicate that those children who serve themselves tend to eat larger portions than those who are served.

Built environment and land use. Early Hawaiians focused on building homes, farms, a healthy population and a future for their families. Prior to 1778, an estimated 380,000 acres produced the food needed to sustain a thriving Native Hawaiian population of more than 500,000; in 1937, 262,582 acres went to food production, including sugar and pineapple for export, for roughly 400,000 residents; and, by 2015, with a population of more than 1.4 million, just 126,535 acres, or, 13.9% of all lands designated for agriculture across the islands, was being used for food crops. These significant changes have occurred as Hawai‘i and its Native Hawaiian population have traversed from being a traditional society of independent chiefdoms; to a unified monarchy; to an independent republic; to a territory of the United States; to today as a state in the United States. Changing government systems, politics and changing economies with increased urbanization, coupled with reduced Native Hawaiian abilities to own property, control resources, and to farm are reflected in the reductions noted above. Today, even if access to land is possible, families are often required to work two or more jobs, to meet obligations and needs. Thus, it is challenging to find time to grow one’s own food. As a result, Native Hawaiians and Hawai‘i state’s entire population have become largely reliant on imported foods. Although some families continue to farm, fish, and hunt for their food, canned and processed meats and white rice continue~~s~~ to be frequently-imported staples in many households, along with other processed, convenience, and fast foods. Fresh fruits and vegetables may be a luxury, given their high cost per pound~~.~~ Fruit drinks, sodas, and energy and sports drinks often replace water and alcohol use continues to be prevalent.

It is estimated that 85% of food consumed in Hawai‘i is imported from North America.While there are calls from the greater community to increase food production (vegetable, fruits and livestock) to become less reliant on outside products and more dependent upon local agricultural, the politics surrounding agricultural land use and availability, adequate water affordability and availability, and marketing have not kept pace with these voices.

In 2019, the US society has become highly technology-driven and involved, resulting in extended sedentary periods in front of electronic and entertainment for both work and play. This provides a rich opportunity for food companies to utilize innovative marketing tactics for non-nutritious foods. Among school-aged children, the widespread availability of non-nutritious foods on school campuses, as fundraisers or, as conditions of sports sponsorship, in vending machines~~,~~ and in stores normalize unhealthy diet choices. Costs, availability, and convenience of these foods high in calories and low in nutrient density are large contributors to poor dietary habits by society in general.

The built environment makes eating heathy additionally challenging. Lack of uniform availability of transportation options to stores that sell healthy foods and reliance on shipping barges to deliver fresh foods consistently, particularly on the neighbor islands, creates challenges to healthy eating not easily remedied by increased education. Food deserts—areas or neighborhoods “vapid of fresh fruit, vegetables, and other healthful whole foods largely due to a lack of grocery stores, farmers’ markets, and healthy food providers”—characterize many rural and neighbor island communities, especially those with a higher proportion of Native Hawaiians. Family-owned, “mom and pop” stores, once an invaluable resource of fresh food and supplies to many of these communities, have closed and been replaced by a growing number of chain fast food outlets and convenience stores that provide non-nutritious foods at “value” prices. Fresh healthy foods that may be available in neighborhood convenience stores are often priced far above what it would normally cost in another market in more populated areas; soda and other sugar-sweetened drinks are often cheaper than bottled water. However, due to lack of transportation

options and/or time involved in traveling to these areas, shopping at convenience stores becomes the default choice.

Socioeconomic factors. Numerous studies demonstrate that the higher one's educational attainment, the better one's health. Those more educated are more likely to seek and practice health-promoting behaviors experiencing less chronic disease, independent of ethnic and other demographic characteristics. This may be further exacerbated by decreased health literacy, especially among those advanced in age. Studies have demonstrated that those with lower educational attainment had lower intake of fruits and vegetables and higher intakes of refined carbohydrates, sugars, red meat, and added fats. While 43.5% of Native Hawaiians are high school graduates or equivalent, about 16.4% achieve a bachelor's degree or higher (compared to 31.0% in the State).

Affording healthy food is challenging; the cost of buying fresh foods is usually greater than purchasing canned, convenience or fast foods. Additionally, the cost of food, especially healthy food, differs from island to island. For example, lettuce from a local grocery store on Oʻahu in September 2017 is $1.99 per pound; a loaf of whole wheat bread is $3.29 (Foodland, 2017). Purchasing the same lettuce in a grocery store in the same chain on the same day on Hawaiʻi Island is $2.19 per pound; cost of the same loaf of bread is $4.59. However, the cost of buying chips on both Oʻahu and Hawaiʻi Island is the same price, 2 bags for $6.00. A can of corned beef at $3.88 is the same price on both islands.

The median household income is lower on the neighbor islands, compared to Oʻahu, $53,936 vs. $77,161, the lowest occurring on the island of Hawaiʻi (Hawaii Department of Business, Economic Development & Tourism, n.d.). Native Hawaiians experience the highest percentage of families living below poverty level, compared to the State (12.3% vs. 7.8%) (Office of Hawaiian Affairs, n.d.). Being a Native Hawaiian living on a neighbor island makes it doubly challenging to afford healthy food.

## Effective and Promising Approaches

A number of very promising approaches have been developed since 1985 specifically for addressing improved Native Hawaiian nutrition. These include utilizing Hawaiian cultural values and family as well as increasing the number of professional Native Hawaiian nutritionists and dietitians to institute positive change. These approaches have led to a number of successful programs; many of which are noted in this section.

Culture influences nutrition choices Nutritional choices of Native Hawaiians are influenced by their cultural values, the built environment, socioeconomic factors, and family and community influences. *Lōkahi*, unity or accord, is a core Native Hawaiian value that can be applied to the relationship between diet, health and spirituality. This is particularly true when traditional values are integral to nutritional programs introduced into Native Hawaiian communities. A review of research, examined the relationship between spirituality and healthy diets (increased intake of fiber, green vegetables, fruit, and fish; low intake of snacks, processed foods, and fat; regular vitamin intake; frequent eating of breakfast; overall better nutrition, i.e. following recommended nutrition guidelines) found studies reporting better diets among those who were more religious/spiritual (R/S) (Koenig, 2012). Those with higher R/S had lower cholesterol levels, blood pressure, heart disease, stroke, and cancer and higher cognition, physical functioning, endocrine function, and immune function. Those with higher R/S also have significantly greater longevity and survival after a significant health event. Religious/spirituality involvement promotes better health behaviors, facilitates skills that are related to better mental health, and promotes social connections and altruism. In addition, a healthy diet has been associated with enhanced brain function in those areas of the brain related to spirituality. When nutritious food is regularly consumed, proper health can be maintained or achieved, and it is similar for spiritual health. When less optimal food is regularly consumed, health is compromised with disease and mental and spiritual lethargy as the result. The relationship with diet and spirituality is bi-directional. Proper nutrition, or *ʻai pono*, is an intricate component of *lōkahi*. One area of concern related to culture which requires additional research is the role

of cultural trauma as it may impact on Native Hawaiian nutritional choices relating to health and well-being status. A 2014 report on Hawaii's food system points out that a substantial body of research links cultural trauma—loss of land and language and disconnection from traditions and practice—with health disparities.

*Family and community*. Nā Piko ʻEkolu is a conceptual model that emphasizes the physical, spiritual, mental, and emotional balance of the individual, family, and community. The influence of family and community in Native Hawaiian culture can influence and affect the behaviors and choices of all involved.

In a study examining specific influences on diet among Native Hawaiians, it was found that intergenerational and cultural influences and roles in the household, the environmental and social aspects of the community in which they live, work, and play, spiritual beliefs, significant family events, as well as personal eating philosophy have all been shown to contribute towards what and how they eat (Oneha, Dodgson, Decambra, Titcomb, Enos, & Morimoto-Ching, 2016). Family members responsible for cooking decide what the family will eat, with other members not feeling it is their right to express their personal meal preferences. Availability of non-nutritious foods in the living environment, as well as community role models and peers, all influence what people eat. As the availability of farmer's markets, community gardens, and proximity to natural resources for personal food gathering promote healthy choices, the availability of fast food outlets, roadside food stands and trucks, and lack of natural resources were barriers. Having a spiritual and cultural connection to food, as shown in the traditional Hawaiian diet (THD) programs, was motivation for healthy choices. As food influences are intergenerational, so are propensity for diseases. While inherited diseases are true, habits and behaviors that places one at risk for disease are also passed along. Recent advances in epigenetics reveal that lifestyle choices influence the expression of these inherited genes that increase risk of disease (Choi & Friso, 2010). As lifestyle choices, such as a poor diet, are continued, the expression of genes that promote diseases, such as type 2 diabetes, heart disease, and cancer, continue. However, if lifestyle choices, such as following a healthy diet, are adopted, these genes would not be expressed. Having more information and working toward changing generational habits requires a family vs. individual approach. Life stage, experiences, and values differ among generations, shaping beliefs and practices around nutrition. Baby Boomers, approaching retirement and new onsets of disease, and Generation X, who are starting to care for their parents, may be more influenced by the role of diet on health. Those considered Millennials and Generation Z, are more in tune with environmental issues and, with growing evidence on the relationship between how food is raised and its impact on the environment, may view their dietary choices on its carbon footprint or from a sustainability perspective. Knowing the values inherent within each generation provide insight into motivators towards healthy eating.

Increased Native Hawaiian Nutritional and Dietary Professionals Having more Native Hawaiians as health professionals and para-professionals increases the acceptability of health care and outreach, leading to earlier interventions and healthier lifestyle choices. In 1985, there was only one Native Hawaiian nutritionist managing statewide nutrition education from the Department of Health. By 1995, there were a handful of Native Hawaiian nutritionists; at least one having had additional certification as a diabetes educator. Nutrition was a subspecialty of a Masters of Public Health at the University of Hawaiʻi. Currently there are more Native Hawaiian dietitians and nutritionists in Hawaiʻi; most of whom have trained outside of Hawaiʻi. There is also a growing body of researchers engaged in various projects related to food consumption and dietary habits who have doctorate degrees in public health, epidemiology, sciences, food studies, and nursing. The Native Hawaiian Health Scholarship Program, administered by Papa Ola Lōkahi, has awarded two scholarships to Master's Degree level nutritionists/dietitians. They trained in Hawaiʻi and at Bastyr University, which calls itself "an alternative medicine university."

Currently, the College of Tropical Agriculture and Human Resources at the University of Hawaiʻi at Manoa offers degrees in food science and human nutrition (BS), dietetics (BS), food science (MS), nutritional sciences (MS) and nutrition (PhD).

It should be noted that a handful of other Native Hawaiian clinicians—physicians and nurses—have pursued additional training in nutrition to better reflect the Hippocratic quote, "L*et food be thy medicine and medicine your food."* (Smith, 2004)

It is challenging to report on all existing projects that have focused are focusing on improving Native Hawaiian nutrition and health as there is no clearinghouse of community activities. A sample is presented here.

**Traditional Hawaiian Diets**

Over the past decade a number of unique diets based primarily upon Hawaii's traditional pre-western foods have been developed. Native Hawaiians who have participated and who continue to participate in these traditional Hawaiian diet (THD) programs, including those with similar, modern-adapted food patterns, have shown and continue to show a reduced risk of chronic disease conditions and markers.

The traditional Hawaiian diet (THD) is abundant in nutrients and largely based on complex-carbohydrates and other vegetables and fruits, with limited amounts of animal proteins and fats. Written accounts remarking on the excellent physical appearances and vigor of Hawaiians by the first outside observers are testimony to the effects of an unprocessed, whole food, plant-based diet and physically active lifestyle.

While the benefits of THD were subjective and limited to eighteenth century observations, the scientific basis for following a plant-based diet is being proven by a growing body of research. Research on the THD specifically have shown repeated success in improving health outcomes and agree with studies examining the effects of plant-based diets, in general. This has prompted leading international and national health organizations, including the World Health Organization (WHO), United Nations, American Association of Endocrinologist, 2015 USDA Dietary Guidelines Advisory Committee, American Institute of Cancer Research, American Diabetes Association, and Kaiser Permanente, to issue recommendations for following a plant-based diet towards improving health.

***Nutrient Composition of Traditional Hawaiian Diet (THD) and Common Food Examples vs. Composition of Average Diet in U.S., 2011-14 (U.S.) and Commonly Eaten Foods, 2007-10***

| | **THD** | | **U.S.** | |
|---|---|---|---|---|
| Carbohydrate | 78% | Taro, sweet potato, breadfruit, other vegetables and fruits | 48.5% | White rice, pasta, breads, cakes, cookies, and other refined grains and grain dishes and desserts; added sugars |
| Protein | 12% | Fish, shellfish, fowl | 15.9% | Beef, chicken, pork, processed meats, eggs |
| Fat | 10% | Fish, shellfish, chicken, other fowl, coconut | 33.7% | Burgers, pizza, meat dishes, dairy, salad dressings, mayonnaise, chips, processed foods, oils |

(Fujita, Hughes, & Braun, 2004; USDA, n.d.; U.S. DHHS & USDA, n.d.)

Mainstream diets today are far removed from a THD. A large portion of today's food supply is composed of ingredients that are mixed, processed, and extruded in a number of shapes, then are fried or baked into "new edible" non-food products that were unknown prior to 1950s. A 2016 study found that about 60% of calories consumed in the modern, American diet come from processed foods (Steele, Baraldi, Louzada, Moubarac, Mozaffarian, & Monteiro, 2016).

According to the 2015-2020 Dietary Guidelines for Americans, average intake of refined grains, saturated fats, added sugars, oils and solid fats, and sodium, are above recommended limits for most age-sex groups, as well as for red meat, processed meat, chicken, and eggs (males 14-70 only). Intake of whole grains, vegetables (including starchy vegetables), and fruits were below recommended limits for most age-sex groups. These dietary trends are contrary to the nutrient composition of THD, being far

removed from what was shown to be conducive among Native Hawaiians historically and in more recent times.

Rather than choosing foods based on nutrient density, currently, foods are selected based on a preference for those high fat, sugar, and calorie dense, which tend to be those foods most available, convenient, and affordable than those more nutritious. While popular fad diets today, including the Paleo diet and ketogenic diet, have reported short-term improvements in body weight and health, long-term effects of these diets are largely unknown (Manheimer., Zuuren, Fedorowicz, & Pijl, 2015; Obert, Pearlman, Obert, & Chapin, 2017; Seidelman et al., 2018; Johnstone, Horgan, Murison, Bremner, & Lobley, 2008). However, given the high animal protein and fat content of these diets and the relationship of these foods with type 2 diabetes, heart disease and cancer, its benefits for health seem unpromising.

**Molokaʻi Heart Study**

The groundbreaking study on traditional Hawaiian diet—also called *MHS, Molokaʻi Cardiovascular Study, Molokaʻi Diet Hoʻokē ʻAi Study*—began on the Hawaiian island of Molokaʻi. It first established that the traditional diet of Hawaiians was very low in fat (10%), high in complex carbohydrates from plant sources (78%), and adequate (12%) in high quality proteins (Fujita, Hughes, Braun, 2004)

The objective of the six week-long Molokaʻi Heart Study was to identify serum lipid changes in Native Hawaiians diagnosed with elevated serum cholesterol lipid, other serum lipids, and hypertension. Weight, bloodwork and other vital statistics were collected to establish baseline data. Participants gathered for three meals each day, during which there were discussions of Hawaiian traditions related to food and nutrition.

The MHS preliminary findings pertaining to obesity, were alarming. The baseline data evaluated 257 individuals from a rural population and found 65.5% of male and 62.8% of female adult-participants were 20% overweight; 34% of women and 47% of men suffered severe over-weight; 44.6% of the older Native Hawaiian participants (40-49 yr.) were severely overweight. (Curb, Aluli, Kautz, Petrovich, Knutsen, Knutsen, O'Connor & O'Connor, 1991) The traditional Hawaiian diet (THD) sharply contrasted with the contemporary diet of the most people in Hawaiʻi. Noted Native Hawaiian physician Dr. Kekuni Blaisdell suggested a more "Prudent Diet" for broad consumption by Native Hawaiians and others.

Of particular interest has been that after three (3) weeks on an isocaloric diet of traditional foods, the cholesterol levels of participants generally dropped significantly. The MHS was the forerunner of several community efforts that followed.

Other THD programs:

*The Waiʻanae Diet Program (WDP).* Some of the health professionals involved in the Molokaʻi Heart Study introduced some of the same approaches to Waiʻanae, a Hawaiian homestead community on the island of Oʻahu. The initial program involved 20 participants. From 1989 to 1996, more than 15 21-day programs were carried out involving 323 participants, most of whom were chosen because they were overweight and/or suffered from one or more chronic diseases. This 21-day program used the basic THD nutrient composition of: 10% fat, 12% protein and 78% carbohydrate, however, the WDP used some substitutions that were similar to the traditional foods they were replacing. The Waiʻanae Diet programs also included daily medical evaluations, group eating, and education sessions in Hawaiian culture and traditions. Program results showed dramatic weight loss: an average weight loss of 7.8 kilograms (17+ pounds) in 21 days. The average serum cholesterol decreased 0.8l mmol/L and blood pressure decreased an average of 11.5 mm Hg systolic and 8.9 mm Hg diastolic (Shintani, Beckham, O'Conner, Hughs & Sato, 1994).

- *Native Hawaiian Health Care Systems (NHHCSs).* Beginning in 1992, under the supervision of the Hawai‘i State Department of Health, four of the Native Hawaiian Health Care Systems on Kaua‘i, Maui, O‘ahu, and Hawai‘i implemented “Hawaiian diet” programs for adults. These programs used the “Hawaiian Diet” with an array of vegetables to meet the nutrient pattern of the MDS’s traditional Hawaiian diet. Weight loss occurred in all programs due to changing to foods that were far lower in caloric density and were cooked without frying or adding butter, gravy or dressings. Water was the beverage used in most of the program meals, except for the skimmed milk in the school program. An O‘ahu school-based program—originally planned by and for one classroom of about 25 children and a teacher—drew much attention and grew to serve 135 students and teachers at the school.

- *Uli‘eo Koa (Warrior Preparedness).* This program paired vigorous exercise with the THD. Healthy adults participated in this THD program that included an expanded selection of the “new” vegetables. The objective of this program was to demonstrate that the THD would support the health of adults who led a vigorously active lifestyle. The 21-day program was enhanced with one hour of moderate morning exercise before breakfast, and 1½ hours of vigorous evening exercise after work or school. Breakfast and dinner served pre-portioned protein food with other food choices, served buffet style. Packed lunches were given out after breakfast. Young adults were advised on foods (mostly fruit) to add during the day, if they were hungry. Regular monitoring of heart rates, weight and blood pressure, as well as body alignment were completed daily. Outcomes included increased strength, endurance, and flexibility while following this plant-based diet. This diet was contrary to sports diet, promoting high levels of protein. (Leslie, 2001)

- *‘Ai Pono (Eat Well).* This community-based program ran from 1992 through 2003. ‘Ai Pono fed scores of families across the islands on a diet that met the THD’s 10% fat, 12% protein and 78% carbohydrate format identified by the Molokai Diet program. `Ai Pono included “introduced” fruit and vegetables along with the traditional Hawaiian food in their programs. Participants on this program, experienced lowering of blood pressures, loss of weight and improved personal health. They were supervised by their personal physicians who provided frequent office visits. ‘Ai Pono served more than 1,012 Native Hawaiians suffering from chronic health conditions related to severe overweight. ‘Ai Pono served and demonstrated healthy meals to the program participants and their immediate families. Food preparation details and cultural education were integrated into a three-meals a day for twenty-one days. (Fujita, Hughes, Braun, 2004)

The Traditional Hawaiian Diet Programs had a demonstrated high appeal among Native Hawaiians, in part, because the program offered familiar Hawaiian foods and reflected family practices and was named for Hawaiians. In addition, Hawaiians were involved in administering and staffing the programs. Another attraction was the cultural food and education, as well as, traditions and values tied to planting, cooking and eating of those foods, which accompanied each evening meal. Dining together and learning culture together was another appeal. Many private physicians willingly provided close medical supervision for their patient-participants and were generous with praise and encouragement; participants were thus appreciative.

Over the course of the average three-week program, all participants experienced measurable changes in weight, blood pressure and blood sugar. These changes occurred quickly and continued for throughout the program. Participants saw and felt their health improvements. All THD programs achieved their goals measured by weight loss and controlled blood pressure.

It should be noted that most of the THD programs that followed the Molokaʻi Cardiovascular Diet and the Waiʻanae Diet Programs were not research studies. Most were community-generated interventions that focused on assisting individuals to experience personal changes and were monitored using basic health measures of body weight and blood pressure. The Uliʻeo Koa program included additional measures for flexibility, strength and body alignment. All educational sessions encouraged learning about the traditional diet and how complex carbohydrates and lower fat consumption work to lower weight and blood pressures quickly. These community-supported programs did not operate with large budgets or staffs, as many research studies do. However, results were measurable.

In summation, Native Hawaiians participants of the statewide, community THD programs demonstrated that they could:

- Commit to THD programs objective for three weeks of eating two or three times daily, at selected sites;
- Commit to the THD of 78% vegetables, using only cultural foods, avoiding fast food, soda;
- Commit to group instructions on snacking, daily personal exercise, observing group rules;
- Participate in all the evening cultural education sessions.

**Other Targeted Nutrition and Health Programs**

Nutrition and health programs that have shown acceptance and/or demonstrated positive health outcomes among Native Hawaiians have all focused on Native Hawaiians utilizing community-based approaches in program design and implementation and, generally, have been conducted in a group or social setting.

There has been an increase in the number of health programs focusing on Native Hawaiians that include nutrition education as an integral part to preventing or managing disease. These projects focus on ameliorating health problems of overweight, diabetes, and physical activity, some using Hawaiian cultural practices. Native Hawaiian health professionals that represent different disciplines are involved to help promote concordance with participants and acceptance and adherence to the program.

Besides focusing on Native Hawaiians, some programs have further narrowed the focus to include only participants of the same gender. This has created a general sense of comfort knowing ones' issues are more likely to be shared with others in a group, serving to promote more open discussion and targeted education in response to the issues discussed. Other programs have opened the rubric to families, ensuring the likelihood of having more support in following healthy behaviors at home.

Utilizing community-based participatory approaches have been used in the design, implementation, and, sometimes evaluation of some of the programs. This helps ensure relevancy of its design and increasing likelihood of program participation and follow-through. Many are implemented by one or more of the five Native Hawaiian Health Care Systems or the federally qualified health centers in Hawaiʻi, but there are some community non-profit organizations as well bringing families together around food.

**Meal and Feeding Programs**

Meal programs continue to provide support in ensuring nutritious meals are available to those in need. Feeding programs have been implemented through faith institutions, non-profit organizations, public schools and other social service agencies. Some programs target Native Hawaiians specifically while others target youth, elders, or adults who are determined to be in financial need, which include a large percentage of Native Hawaiians. Integrating cultural activities and health education and monitoring, while attending meal service, is one way to help monitor and ensure nutrition needs of those in attendance.

**Worksite Wellness Programs**

Worksite wellness programs are an alternative setting to promoting nutrition and health among Native Hawaiian working adults. Worksites are convenient settings with a built-in social support group, making participation in wellness activities easier and behavior changes more sustainable. Support towards employee wellness from organizational administrators provides easier implementation, as health-minded administrators are more willing to allow work-time to participate in wellness activities and implement policies supportive of employee health.

Worksite wellness programs done in Native Hawaiian-serving organizations have incorporated community-based participatory approaches in their development and implementation, creating more company-wide acceptance and interest in the programs. Some Native Hawaiian-serving organizations with created wellness policies, range from providing reimbursements for employee health-related purchases, paid-work time to participate in wellness activities, and establishing "healthy food only" policies at work meetings and events.

**ʻĀina-Based Programs**

Programs that involve cultivation of cultural foods serve as a means to encourage farming practices and healthy food consumption.

Community food-production programs were first developed in the 1970s and 1980s and continue today. They were largely led by a community leader, who garnered support from other community members, farmers, and school personnel who contributed to the development and volunteered their time delivering these learning opportunities for children and teens.

These early community farming projects were designed to increase cultural awareness and food production skills, which doubly served to increase awareness of nutritious foods and encouraged its consumption. These farm projects include:

- Kaʻala Farm. In the 1980s Eric Enos, a community leader from Mākaha, Oʻahu, initiated several projects that connected Hawaiian youth with ancestral means of providing a living through farming, fishing and cultural development methods. Founded around growing taro, the learning center's programming encouraged and incentivized youth to learn about cultural and farming methods used by early Hawaiians, resulting in skills that could be applied well into their adulthood. The initiatives that Enos and his colleagues developed in the 1980s planted the seeds for many current programs across the Hawaiian islands that share the same values and program goals.

- ʻŌpelu Project. Begun by the same folks who established Kaʻala Farm, the `Opelu Project featured hydroponic development of ʻōpelu for food and revenue, and cultural education for area youth about Hawaiian fish and fishing methods. While this is not an active program, there are ʻōpelu projects in communities on several islands, i.e. Miloliʻi ʻŌpelu Project. Companies such as Local Iʻa work with fishers, scientists and consumers to promote genuinely "fresh" fish, its origins, that it was sourced locally, that commercial fishing boat owners provide humane living conditions, and even provide regular market distribution through community fish boxes. Website: http://paaponomilolii.org/projects/milolii-opelu-project

- Mala ʻAi ʻŌpio (MAʻO) Farms. On several hundred acres in Lualualei Valley in Waiʻanae, this organic farm encourages youth to learn farming methods of food plants, how to keep the land healthy,

and basic principles of running a business while the farm generates revenue. While working at MA'O, college students earn scholarships, are required to maintain a 2.0 grade point average, and acquire skills that may lead to being productive citizens. Website: http://ulupono.com/portfolios/mao-organic-farms

- Ho'oulu 'Āina. One hundred acres in the back of Kalihi valley are owned and managed by Kōkua Kalihi Valley (KKV), a federally qualified health center. While managing a native forest, a lo'i, and vegetable producing garden, this area is dedicated to cultural education and community transformation. This welcoming place promotes (re)building relationships to the land and environment, to community and to one's own histories and traditions, especially those related to food production and consumption. Four interwoven programs are available: 1) Lohe 'Āina – dedicated to the restoration of the property's ancient sites and sacred places; 2) Koa 'Āina – the only organic reforestation and agroforestry project on O'ahu; 3) Hoa Āina – a program which hosts thousands of volunteers who heal this 'āina that was once laden with conflict and hurt; and 4) Mahi Āina – which is a community garden program. Along with the land-based programs, Ho'oulu 'Āina provides organic vegetables that helps to sustain KKV's Roots Café, which produces healthy lunches twice a week at the center and caters for special events for the public. Website: https://www.hoouluaina.com/

- Paepae 'o He'eia. This Hawaiian fishpond and many others on Moloka'i, Maui, O'ahu and Hawai'i are being or have been restored and traditional fish farming is being revived for distribution and consumption. Farming methods are in synch with the natural rhythms of the locale. Website: https://paepaeoheeia.org/

- Limu Hui. Similar to the loko i'a revival, a collective of fishers throughout the islands is restoring traditional seaweed beds where once they were plentiful. Website: http://kuahawaii.org/limu-hui/

These lo'i, farms, and fishponds are most often managed by not-for-profit entities. They have educational components where students and/or visitors of all ages learn more about these traditions, Hawaiian scientific methods, and resource management and production, and are often able to learn by "hands-on" activity. Participants learn how these resources are grown and produced, leading to greater familiarity with their foods' origins and greater likelihood of making healthy choices.

- Family and community gardens. There are numerous large and family-sized projects to generate interest in creating home gardens for family sustenance. Other farm projects recognized but not always reported include backyard hydroponic farming, community taro farming, home taro planting, and personal or community poi production. Community gardens are being written into plans for the newer homesteads developed by the State Department of Hawaiian Home Lands.

- Farm to School. This program connects schools and local farms with the objectives of serving healthy meals in school cafeterias, improving student nutrition, providing agriculture, health and nutrition education opportunities, and supporting local and regional farmers. These programs also promote healthier food choices. One measurable success is that there is full-time staff managing this statewide program. Goals have expanded to educate on broader issues related to food preparation, food safety (e.g., organic methods, genetic engineering), resource conservation, reducing one's carbon footprint, and other environmental impacts of food production.

- Ehuola. This program, operated by Kōkua Kalihi Valley, a federally qualified health center, guides Hawaiian families in incorporating 'ai pono and a way of living that honors kūpuna and Hawaiian traditions, 'āina, and emphasizes Hawaiian cultural practice as a primary preventive health care. Each year-long program is built around keiki in grades 3-5 and their families. Families explore community

food systems and participate in family-centered workshops. The students participate in monthly lessons and dinner preparation for their families throughout the year, and more intensive programing during spring and fall intersessions. For the past three years, Ehuola haumana have entered the 808 Jr. Chef Showdown, consistently ranking in the top three. Website: https://www.rootskalihi.com/ehuola-1

- Maʻilikūkahi ʻĀina Momona Academy (MAMA). A program based in Koʻolaupoko and founded by ʻāina-conscious parents as a summer program. This program helps us to remember that our strength as Hawaiians comes from connection to the ʻāina. The keiki are divided into groups by age and exposed to reef fishing, loʻi cleaning and harvesting, fishpond cleaning, gathering ʻāina-based foods and preparing meals for themselves and their families. Other geographic communities are learning from this program toward establishing programs in their own districts. No website, Facebook: https://www.facebook.com/momonaacademy/

This has also been a "spring board" for policies that promote healthy eating, such as prohibition of sugar-sweetened beverages and healthy snacks at school events and parties.

**Access to Food**

An option for food-insecure residents is participation in the federal Supplemental Nutrition Assistance Program (SNAP) which provides food and nutritional support to qualifying low-income and need households. However, one study among Hawaiʻi residents reported SNAP as not being adequate to meet their needs. Assistance from food banks, churches, friends and family members helped supplement their needs. Utilizing smart shopping strategies, including budgeting and buying in bulk, also helped.

**Research**

Currently research targeting Native Hawaiians is Oʻahu centric and not available on the neighbor islands.

- The Hawaiʻi Initiative for Childhood Obesity Research and Education (HICORE). Based at the University of Hawaiʻi (UH) John A. Burns School of Medicine (JABSOM), the mission is to provide leadership of collaborative, multi-disciplinary research and education in order to reduce childhood and adolescent obesity in Hawaiʻi. Native Hawaiian children are a priority in a number of projects including the PILI ʻĀina Project. Website: http://www.hicore.org/18/research

**Policy**

In addition to existing policies within the State of Hawaiʻi, additional measures are being introduced every year. While most are not specific to Native Hawaiians; Native Hawaiians as citizens of the state are impacted. The following measures were in introduced in the 2019 legislative session:

- Establish programs and services (USDA Farm-to-School program; state oral health promotion and prevention services; farmer's market matching incentive program promoting fruits and vegetables and local health food matching program for SNAP beneficiaries);
- Appropriate funds for continuation of community health programs that incorporate nutrition programs, such as those at the federally qualified health centers Hāna Health, Kōkua Kalihi Valley, and Waiʻanae Coast Comprehensive Health Center;
- Establish taxes on unhealthy products, specifically sugar-sweetened beverages (SSBs);
- Convene working groups and councils (nutrition and lifestyle behavior for prevention and treatment of chronic disease; obesity prevention program support; sugar-fattened beverage);
- Establish policies for compliance by industries (Harmonize pricing that farmer's sell their products; require restaurants to offer water, dairy or non-dairy milk, or 100% juice as default beverage in

children's meals; warning label on sugar-sweetened beverages that "drinking beverages with added sugar(s) contributes to obesity, diabetes, and tooth decay.");

- Establish job positions (Farm-to-School coordinator in DOA; Farm-to-School staff positions in DOE); and,
- Review research or conduct assessments (Impact of screen time and media consumption of child and adolescent physical activity, nutrition, and obesity; social and financial impacts of mandating coverage of Native Hawaiian culture-based practices shown effective in management of weight, CVD health, diabetes, and chronic kidney disease)

While adoption of these bills is still pending, efforts demonstrate a public desire and community support towards positive behaviors around food and nutrition. Passage of any of these bills will benefit all of Hawai'i's people including Native Hawaiians.

**Food Access, Food Systems & Food Sovereignty**

Each year Hawai'i sends delegates, many of whom are Native Hawaiians—kalo farmers, public health dietitians, fishpond managers, and more—to international gathering where wise practices around the world are shared. One which has specifically included Native Hawaiians along with Alaska Natives and American Indians is the annual Conference on Native American Nutrition hosted by the Shakopee Mdewakanton Sioux Community and University of Minnesota's Healthy Foods, Healthy Lives institute.

**Workforce & Training**

The College of Tropical Agriculture and Human Resources (CTAHR) has expanded the number of tracks the Human Nutrition, Food and Animal Sciences Department. As was noted earlier in this report, CTAHR offers degrees at the Bachelors, Masters and Doctoral levels in dietetics, and various subspecialties of food science and human nutrition. More recently, CTAHR has executed campaigns recruiting Native Hawaiian students to these programs with scholarships CTAHR also offers a baccalaureate in culinary arts, as do many of the community colleges in the University of Hawai'i system, as well as food service.

Finally, UH West O'ahu offers a new degree in Sustainable Community Food Systems, which addresses the macro issues of food production and consumption by increasing knowledge in, among other things, ecological and social issues in modern agriculture, the role of biodiversity, socio-economic and political factors around food and agriculture, with an awareness of the public health in Hawai'i.

## Gaps

- **Despite the past 30 years of sincere efforts, Native Hawaiians continue to experience increasing prevalence of chronic illness and premature death from health conditions that are treatable and preventable.**

Lack of accessibility to comprehensive nutrition programs and resources, limited research, and unsupportive environment and systems are areas to be improved upon. Addressing these gaps require coordinated, multidimensional approaches that involve many and different sectors of public and private resources.

There exists disparities of programs and projects on the neighbor islands as compared to the City and County of Honolulu.

- **There are continuing gaps in knowledge relating to nutritional education for Native Hawaiians and their families.**

- More research is needed to understand that nutritional needs of Native Hawaiians in Hawai‘i, particularly those living in rural areas on O`ahu and in neighbor islands communities, and the Native Hawaiian diaspora on the continental U.S.
- Research needed includes information on food intake of food groups and specific foods. Research also needs to examine the relationship of food and food intake to disease rates and to disease reversals among Native Hawaiians (reference).
- Due to the centralization on O‘ahu there is a gap of adequate research involving the neighbor islands. Neighbor island data can be collected if rural and neighbor island health professionals are trained in collecting data and developing their own research projects.
- There is a need to develop a systematic collection of data on dietary intake and nutritional status across the Native Hawaiian lifespan, i.e. prenatal, infant, keiki, adolescents, women, men, kupuna.
- There is a need for ongoing analysis and evaluation of the State Risk Behavior Data and other data that highlights Native Hawaiians at the top of most categories.
- Need systematic evaluation or monitoring of Federal and State funded programs targeting improvement of Native Hawaiian health risks, including nutritional health for numbers, funding level and geographical location, as well as service efficacy. (WIC, MCH, Chronic Disease, MH).

- As not all programs and resources are known, a clearinghouse of nutrition programs, nutrition research, ‘āina-based programs would be useful.

- While benefits of initiating farming projects in schools and communities are generally agreed upon and understood, outcomes of these farming projects done in Hawai‘i are not widely published or known.

- **There are challenges of food production and distribution of island foods by those Native Hawaiians utilizing traditional production practices.**
  - Protection of natural resources
    - Agricultural lands are becoming scarce and those available for agricultural use are being redirected toward development of housing, solar and wind farms, and other purposes. In addition to protecting farmlands, assure production of traditional Hawaiian foods.
    - Water rights and access must be protected.
    - Reefs and fishing grounds must be wisely protected to assure safe and abundant harvests of seaweed and fish. Traditional fishing practices must be protected and perpetuated.
  - Farmer education. More traditional plant foods could be produced if farmers had access to information on farming techniques and technologies, business practices, distribution, sales and marketing.

- **Native Hawaiians living in rural areas generally lack access to clinical providers and health educators (particularly diabetes educators) regarding nutritional and healthy choice information and instruction.**
  - Lack of accessibility to comprehensive nutrition programs and resources make it challenging to adopt or sustain healthy eating practices.

- **Throughout Hawai‘i there is an increasing need for Native Hawaiians and all others in the island population to understand and support the importance of moving towards food security.**
  - Healthy food supplies are not always fresh in rural and poorer communities.
  - Greater than 35,000 Hawai‘i households are “food insecure” which means that there are challenges providing enough food for their families and in some instance have gone hungry, a newly released U.S. Department of Agriculture report estimates.

- Food is not always fresh, particularly in rural areas and neighbor islands. Some food products are transported in open barges.

**Recommendations for Impact**

- **Provide Native Hawaiians and their families and communities with access to comprehensive nutrition programs and resources.**
- **Educational Campaigns**
  - Successful public health campaigns have been implemented over the past thirty years to shift individual behaviors.
- **Increase funding of research on neighbor islands.**
- **Recognize and implement Traditional Hawaiian diets (THDs) as health programs.**
  - Develop partnerships among departments of health, education and human services, health care providers, and philanthropic foundations to institutionalize and sustain THD programs, that have proven to benefit families long after individual participation.
  - As with other treatment programs, design and make available long-term support and behavior reinforcement for families.
- **Increase the knowledge of traditional Hawaiian food and practices while enhancing access.**
  - Borne out by the Molokai and Waiʻanae diets, a critical component of the success of these diet programs was the increased information about the uses, planting, and preparation methods, in addition to ʻike kupuna, wisdom of the elders about the sacredness and relationship between humanity and its food.
  - In addition to including this information in programs, education campaigns can also be executed broadly, through mass media. such as in the monthly columns written by Dr. Claire Hughes in the monthly beneficiary publication from Office of Hawaiian Affairs.
  - Statewide, taro, poi, reef fish, seaweed are not always available in any community retail or area wholesale outlets.
  - Poi, the basic cultural carbohydrate food, is very expensive due to the continuing decrease in taro farm numbers and acreage. Unless, one has direct-access to a taro farmer, or assists a farmer, or at a community garden, locating a retail source of poi is difficult.
- **Establish food security and economic self-sufficiency in the Native Hawaiian community specifically and the island population in general.**
  - The State of Hawaiʻi Office of Planning report proposed a strategic plan which provides "objectives, policies and actions that would increase the amount of locally grown food consumed by Hawaiʻi residents."
- **Increase the Native Hawaiian professional workforce in nutrition education and the production of traditional Hawaiian foods.**
  - Increase training programs om nutrition and Traditional Hawaiian foods.
  - Enhance awareness of research and clinical jobs available for nutritionists and dietitians
  - Increase resources for training and continuing professional education.
  - Increase placement in community agencies by educating agencies on the benefits of enriching workforce and reducing rates of disease.
  - Increase capacity for nutrition professionals at all levels.
- **Increase access to healthy low-cost foods statewide, especially on the neighbor islands.**
  - Support SNAP/Green Wheel hub and more double dollar programs.
  - Develop and support farmers markets.

- **Provide Native Hawaiians and their families with enhanced nutritional outreach and education focusing on food preparation and healthier eating.**

- Assure adult public education on use and preparation of "introduced" produce, i.e. kale, various Asian pumpkins, squashes, greens, etc. (In-store demos, healthy low-cost dishes, and other prep methods).
- Schedule regular public education to improve food choices, especially, related to chronic conditions (PSAs, educ. TV, adult education).
- Establish regular programs specifically geared to Hawaiian populations learn how to prepare meals and foods for chronic health conditions.
- Provide educational information regarding the needs for growth/nutrition: pregnancy, child growth, w/chronic conditions.

- **Develop specific public policy formulations relating to enhancing nutrition for Native Hawaiians.**
  - Enhance the SNAP and mandate a specific % on fruits and healthful beverages
  - SSB taxes
  - Mandate food education if individual/families are government assistance recipients.
  - Enhance the role of the food industry in supporting healthy messaging.
- **Enhance affordable technology development and transfer to Native Hawaiian families and communities relating to good nutritional practices.**

Keeping these recommendations in mind, our Native Hawaiian kupuna from the days of our ancestors were well aware of the importance of good nutrition in enhancing ones' health and well-being. Their wisdom concludes this report:

I ola ke kino i ka māʻona o ka ʻōpū.
*The body enjoys health when the stomach is well filled.*
ʻŌlelo Noʻeau #1246
(Pukui, 1983, p. 135)

Ola ka makapehu.
*The swollen-eyed ones are healed.*
Said of one whose who are lacking food then receive an abundance of it.
ʻŌlelo Noʻeau #2485
(Pukui, 1983, p. 272)

Nānā no a ka lāʻau ku hoʻokāhi.
*Look for the plant that stands alone.*
Often said by those seeking strong medicinal herbs.
A plant that stood by itself was considered better for medicine than one that grew close to others of its kind.
ʻŌlelo Noʻeau #2270
(Pukui, 1983, p. 248)

E kanu mea ʻai o nānā keiki i ka haʻi.
*Plant edible food plants lest your children look with longing at someone else's.*
ʻŌlelo Noʻeau #317
(Pukui, 1983, p. 39)

‘Aiaola
*To eat nutritious food*

Mamaka Kaiao
Komike Hua‘olelo, 1998, p. 156

I pa`a ke kino ke keiki i ka lā`au**.**
*That the body of the child is solidly built by the medicines.*
A mother ate herbs during pregnancy and nursing for the sake of the baby’s health.
The herbs were given to the child up to the age of twenty so that
he would be healthy and strong through maturity and old age.

A Voyage to Health

Pū‘ali kalo i ka wai ‘ole.
*Taro, for lack of water, grows misshapen.*
For lack of care one may become ill.

A Voyage to Health

## References


Pukui, Mary K. `Olelo No`eau, Bernice P. Bishop Museum Special Publication 71, Bishop Museum Press, Honolulu, 1983.

Komike Hua`olelo, Hale Kuamo`o, `Aha Punana Leo. Mamaka Kaiao, University of Hawai'i Press, Hawai'i, 2003.

*A Voyage to Health*, National Library of Medicine, National Institutes of Health, Washington, D.C. retrieved from https://www.nlm.nih.gov/exhibition/avoyagetohealth/pdf/Proverbs.pdf

*A Mortality Study of Hawaiian People,* R & S Report, Research and Statistics Office, Hawai'i State Department of Health, Honolulu, HI, February 1982.

Johnson, D.B., N. Oyama, L. LeMarchand, L. Wilkens. *Native Hawaiians mortality, morbidity, and lifestyle: comparing data from 1982, 1990, and 2000,* Pacific Health Dialog, Vol 11, No. 2., 2004.

Park, C.B.; R.W. Gardner; and E.C. Nordyke. *Life tables by ethnic groups for Hawaii,* R & S Report. Office of Health Status Monitoring; Hawai'i State Department of Health, Honolulu: Hawaii 1979.

Sharma, S., J.K. Cruickshank, D.M. Green, S. Vik, A. Tome, L.N. Kolonel. *Impact of Diet on Mortality From Stroke: Results From the U.S. Multiethnic Cohort Study,* Journal of American College of Nutrition, Vol. 32(3), 2013, pp. 151–159 doi:10.1080/07315724.2013.791798.

Aluli, Noa Emmett. *Prevalence of Obesity in a Native Hawaiian Population,* American Journal of Clinical Nutrition, Vol. 53, 1991, pp 15565 – 15605.

Dickson, Poliala. *Identifying Barriers to Weight Management in Native Hawaiian Women,* A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in Human Performance, Middle Tennessee State University, Murfreesboro, TN, May 2016.

Lasseter, J.H., L. Clark, S.E. Morgan, L. B. Brown, G. Van Servellen, K. Duncan, E.S. Hopkins. *Health Literacy and Obesity Among Native Hawaiian and Pacific Islanders in the United States,* Public Health Nursing, Vol. 32, No. 1, pp. 15–23 0737-1209 doi: 10.1111/phn.12155.

Maskarinec, G., Y. Takata, I. Pagano, L. Carlin, M.T. Goodman, L. LeMarchand, A.M.Y. Nomura, L.R. Wilkens, L.N. Kolonel, *Trends and Dietary Determinants of Overweight and Obesity in a Multiethnic Population,* Obesity, Vol. 14, 2006; pp. 717–726.

Mau, M.K., K.N. Wong, J. Efird, M. West, E.P. Saito, J. Maddock. *Environmental Factors of Obesity in Communities with Native Hawaiians,* Hawaii Medical Journal, Vol. 67, No. 9, September, 2008, pp. 233–236.

National Academies of Science, Engineering, and Medicine. *Current Status and Response to the Global Obesity Pandemic: Proceedings of a Workshop – in Brief*, The National Academies Press, Washington D.C., January 2019.

*Obesity in America,* Public Health (https://www.publichealth.org/publicawareness/obesity/affected/).

Schumacher, Jami. *Hawaiian Weight Management Programs Aims for Healthy, Happy Lives,* The Rural Monitor, Rural Health Information Hub, February 26, 2015.

Shintani, T; C.K. Hughes; S. Beckham; and H. K. O`Connor. *Obesity and Cardiovascular Risk Intervention Through the Ad Libitum Feeding of Traditional Hawaiian Diet,* The American Journal of Clinical Nutrition, June 1, 1991.

*AACE/Ace Comprehensive Type 2 Diabetes Management Algorithm 2018*, American Association of Clinical Endocrinologists (https://www.aace.com/publications/algorithm).

*American Association of Clinical Endocrinologists Now Recommend a Plant-Based Diet!* (https://www.riseofthevegan.com/blog/american-association-of-clinical-endocrinologists-recommend-plant-based-diet).

*Causes of Chronic Kidney Disease,* National Institute of Diabetes and Digestive and Kidney Diseases (https://www.niddk.nih.gov/health-information/kidney-disease/chronic-kidney-disease-ckd/causes).

Erber, E., B.N. Hopping, A. Grandinetti, S. Park, L.N. Kolonel, G. Maskarinec. Dietary Patterns and Risk for Diabetes, Diabetes Care, Vol. 33, 2010, pp. 532–538.

Horwath, C., C.R. Nigg, R.W. Motl, K.T. Wong, R.K. Dishman, *Investigating Fruit and Vegetable Consumption Using the Transtheoretical Model,* American Journal of Health Promotion, Vol. 24, No, 5, 2010, pp. 324-333.

Kaholokula, J.K., R.E. Wilson, C.K.M. Townsend, G.X. Zhang, J. Chen, S.R. Yoshimura, A. Dillard, J.W. Yokota, D.M. Palakiko, S. Gamiao, C.K. Hughes, B.K. Kekauoha, M.K. Mau. *Translating the Diabetes Prevention Program in Native Hawaiian and Pacific Islander Communities: the PILI 'Ohana Project,* TBM, Vol. 4, 2014, pp. 149–159 doi: 10.1007/s13142-013-0244-x.

Kim, H., S. Park, A. Grandinetti, P.S. Holck, C. Waslien. *Major Dietary Patterns, Ethnicity and Prevalence of Type 2 Diabetes in Rural Hawaii,* Nutrition. Vol. 24(0), 2008;pp. 1065-1072 doi:10.1016/j.nut.2008.05.008.

*Risk Factors for Type 2 Diabetes,* National Institute of Diabetes and Digestive and Kidney Diseases (https://www.niddk.nih.gov/health-information/diabetes/overview/risk-factors-type-2-diabetes).

Smith, R. (2004). *Let food by thy medicine…,* British Medical Journal, 328(7433), 0.

Steinbrecher, A., E. Erber, A. Grandinetti, L.N. Kolonel, G. Maskarinec. *Meat Consumption and Risk of Type 2 Diabetes: the Multiethnic Cohort,*
Public Health Nutrition, Vol. 14(4) 2010; pp. 568–574 doi:10.1017/S1368980010002004

Steinbrecher, A., Y. Morimoto, S. Heak, N. Ollberding, K.S. Geller, A. Grandinetti, L.N. Kolonel, G. Maskarinec. *The Preventable Proportion of Type 2 Diabetes by Ethnicity: The Multiethnic Cohort,* Annals of Epidemiology, July, Vol. 21(7), 2011, pp. 526–535. doi:10.1016/j.annepidem.2011.03.009.

Townsend Ing, C.K.M., R.E.S. Miyamoto, M. Antonio, G. Zhang, D. Paloma, D. Basques, K.L. Braun, J.K. Kaholokula. *The PILI@Work Program: a Translation of the Diabetes Prevention Program to Native Hawaiian-serving Worksites in Hawai'i,* TBM, Vol. 6, 2016, pp. 190–201 doi:10.1007/s13142-015-0383-3.

*Understand Your Risks to Prevent a Heart Attack*, American Heart Association (http://www.heart.org/HEARTORG/Conditions/HeartAttack/UnderstandYourRiskstoPreventaHeartAttack/Understand-Your-Risks-to-Prevent-a-Heart-Attack_UCM_002040_Article.jsp#.Wv33qvZFxPZ)

*About Farm to School*, National Farm to School Network (http://www.farmtoschool.org/learn).

*Essential Fatty Acids*, Physicians Committee for Responsible Medicine (http://www.pcrm.org/health/health-topics/essential-fatty-acids).

*How Highly Processed Foods Liberated 1950s Housewives*, National Women's History Museum (http://www.womenshistory.org/articles/how-highly-processed-foods-liberated-1950s-housewives).

*Plant-based diet associated with less heart failure risk*, American Heart Association Meeting Report Poster Presentation (https://newsroom.heart.org/news/plant-based-diet-associated-with-less-heart-failure-risk).

*Sugar-Sweetened Beverage Consumption Among U.S. Adults, 2011-2014*, Centers for Disease Control and Prevention, National Center for Health Statistics, NCHS Data Brief No. 270, January 2017 (https://www.cdc.gov/nchs/products/databriefs/db270.htm).

U.S. Dietary Guidelines for Americans 2015-2020, (https://health.gov/dietaryguidelines/2015/guidelines/table-of-contents/) (https://health.gov/dietaryguidelines/2015/guidelines/chapter-2/a-closer-look-at-current-intakes-and-recommended-shifts/).

World Heart Federation (https://www.world-heart-federation.org/resources/risk-factors/).

*World Health Org and UN Recommend Populations Eat Plant-Based Diets* (http://www.fao.org/docrep/004/Y2809E/y2809e00.HTM) (http://www.vegsource.com/news/2010/05/world-health-org-and-un-recommend-populations-eat-plant-based-diets.html).

Fujita, R., K. Braun, and C.K. Hughes. *The Traditional Hawaiian Diet: A Review of the Literature*, Pacific Health Dialog, Vol. 11, No. 2, September 2004, pp. 250-258.

Hoe, Herbert Kealoha. *`Ai Pono – Hawaiian Nutrition and Wellness Program*, February 1998.

Hughes, Claire. *Overview: Uli`eo Koa – Warrior Preparedness and Uli`eo Koa Preparedness*, Pacific Health Dialog, Vol. 8, No. 2, 2001, pp. 393-400.

Leslie, J.H. *Uli`eo Koa Program: Incorporating a Traditional Hawaiian Dietary Component*, Pacific Health Dialog, Vol. 8, No. 2, 2001, pp 401-406.

*Maui Traditional Hawaiian Diet Program: La`au No Ka Mea `Ai Summary Report*, Nutrition Branch, Hawai'i State Department of Health, February 1-27, 1993.

Meter, Ken and Megan P. Goldenberg. Hawai'i's Food System: Food for All, Crossroads Resource Center, Minneapolis, MN, July 21, 2017.

Moser, S.M. *The Hawaiian Diet in a Public School*, University of Hawai'i PH 769, 1993.

Mueller, Charles. *The Kaua`i Native Hawaiian Diet Program – A Twenty-One Day Diet Intervention Evaluation*, University of Hawai'i SW 641, Spring 1992.

Oneha, Mary F.; Joan Dodgson; Mabel H. DeCambra; Carol Titcomb; Richelle Enos; and Sandie Morimoto-Ching. *Connecting Culturally and Spiritually to Healthy Eating: A Community Assessment with Native Hawaiians*, Asian/Pacific Island Nursing Journal, Vol. 1, No. 3, pp. 116-126.

Shintani, T, S. Beckham, J. Tang, H. O'Connor, C. Hughes. *Waianae Diet Program: Long-term Follow Up*, Hawai'i Medical Journal, Vol. 56, May 1999.

*The Kauai Native Hawaiian Diet Program – An Evaluation*, Health Promotion and Education Section, Kauai District Health Office, May 1992.

Bushnell, O.A. The Gifts of Civilization: Germs and Genocide in Hawai'i, University of Hawai'i Press, Honolulu, February, 1993.

E Ola Mau; The Native Hawaiian Health Needs Study, ALU LIKE, Inc, Honolulu, HI, December 1985:

- *o Strategic Health Plan Task Force Report*
- *o Historical/Cultural Task Force Report*
- *o Medical Task Force Report*
- *o Mental Health Task Force Report*
- *o Nutritional/Dental Task Force Report*
- *o Compendium of Executive Summaries*
- *o Proceedings of the Native Hawaiian Health Needs Study Conference*

*Ka `Uhane Lokahi – Native Hawaiian Health and Wellness Summit and Island `Aha*, Papa Ola Lokahi, Honolulu, March 7-8, 1998.

Mokuau, Noreen; Patrick DeLeon; Joseph Kaholokula; Sade Soares; JoAnn Tsark; and Coti Haia. *Challenges and Promise of Health Equity for Native Hawaiians, Perspectives – Expert Voices in Health and Health Care*, Discussion Paper, National Academy of Medicine, Washington D.C., 2016.

Native Hawaiian Health Forum (UH Center for Hawaiian Studies), Papa Ola Lokahi, Honolulu, HI, January 15-16, 1999.

*Native Hawaiian Health Masterplan and Update*, Papa Ola Lokahi, Honolulu, HI, 1989 and 1992.

*Native Hawaiian Health Report*, US Congressional Office of Technology Assessment, Washington D.C., 1986.
United States Congressional Hearings:
*Reauthorization of the Native Hawaiian Health Care Improvement Act,* Hearing before the Select Committee on Indian Affairs, US Senate, 102nd Congress, Second Session, Honolulu, April 14, 1992.
*Reauthorization of the Native Hawaiian Health Care Improvement Act,* Hearings before the Committee on Indian Affairs, US Senate, Moloka`i/Kaua`i January 18, 2000; Honolulu, O`ahu January 21, 2000; Kailua, Kona and Lana`i March 16, 2000.
Wong, K. Anduha and M.R. Kataoka-Yahiro. *Nutrition and Diet as it Relates to Health and Well-Being of Native Hawaiian Kupuna (Elders): A Systematic Literature Review*, Journal of Transcultural Nursing, Vol. 28(4), 2017, pp. 408 –422.

**Nutrition Planning and Research**

Cohen, Larry; Anthony Iton; Rachel Davis; and Sharon Rodriques. *A Time of Opportunity: Local Solutions to Reduce Inequities in Health and Safety*, The Academies Press, Washington D.C., May 11, 2009.
Fuddy, Loretta (Director). Hawaii's Physical Activity and Nutrition Plan, Hawai'i State Department of Health, 2013.
Gilmore, Alice. *Some Major Health Concerns in the Native Hawaiian Community*, Special Report, ALU LIKE, Inc. March 1979.
Hughes, Claire K. *Diet Related Cancer in Native Hawaiians*, CANCER *Supplement*, Vol. 78, No. 7, October 1, 1996.
*Improving Health Research on Small Populations: Proceedings of a Workshop,* The Academies Press, Washington D.C., May 4, 2018.
*Leveraging Culture to Address Health Inequalities – Examples from Native Communities: Workshop Summary,* The Academies Press, Washington D.C., December 19, 2013.
National Academies of Sciences, Engineering, and Medicine. *Improving Health Research on Small Populations: Proceedings of a Workshop*, The National Academies Press, Washington D.C., 2018.
Wong, Kamomilani and Merle Kataoka-Yahiro. *Nutrition and Diet as It Relates to Health and Well-Being of Native Hawaiian Kupuna (Elders): A Systematic Literature Review,* Journal of Transcultural Nursing, May 16, 2016.
*Human Microbiome Project,* National Institute of Health, Washington D.C. (https://hmpdacc.org/).
*Nation's Largest Health Care Organization Wants to Make Plant-Based Diets the New Normal*, Food Revolution Network (https://foodrevolution.org/blog/food-and-health/plant-based-diets-the-new-normal/)
*Nutritional Update for Physicians: Plant-Based Diets,* The Permanente Journal,
Kaiser Permanente (http://www.thepermanentejournal.org/issues/2013/spring/5117-nutrition.html)

**Indigenous Health**

*A Focus on Maori Nutrition: Findings from the 2008/009 New Zealand Adult Nutrition Survey*, Ministry of Health, Wellington, New Zealand, 2012.
Gracey, M. *Indigenous Health Part 1: Determinants and Disease Patterns,* The Lancet, Vol. 374, No. 9683, July 4,2009, pp. 65-75.
King, M; Smith, A; Gracey, M. *Indigenous Health Part 2: The Underlying Causes of the Health Gap,* The Lancet, Vol. 374, No. 9683, July 4, 2009, pp. 76-85.
King, M. *An Overall Approach to Health Care for Indigenous Peoples,* Pediatric Clin North America, Vol. 56, No. 6, December 2009, pp. 1239-1242.
Kuhnlein, Harriet; Suttilak Smitasiri; Lalita Bhattacharjee; Li Dan; Salek Ahmed; et al. Documenting Traditional Food Systems of Indigenous Peoples: International Case Studies, Centre for Indigenous Peoples' Nutrition and Environment, McGill University, Canada, 2004.
*National Aboriginal and Torres Strait Islander Health Plan 2013-2023, Priorities – Whole of Life*, Department of Health, Canberra, Australia, 2013.
Vernon, R.V., *A Native Perspective: Food is More than Consumption,*
Journal of Agriculture, Food Systems, and Community Development, Vol. 5(4) 2015; pp. 137–142 (http://dx.doi.org/10.5304/jafscd.2015.054.024).

**Native Hawaiian Diaspora**

Bryant, Janell; Alma Detten; Jasmin Leon; and Dalia Leon. *Designing a Nutrition Curriculum for Native Hawaiians and Pacific Islanders in San Diego*, A Project Submitted in Partial Fulfillment of the Requirements for the Degree Master of Public Health, California State University San Marcos, 2017.
Lassetter, Jane. *The Integral Role of Food in Native Hawaiian Migrants' Perceptions of Health and Well-being,* Journal of Transcultural Nursing, December 29, 2010.
Lassetter, Jane. *The `Ohana MANA Challenge: An Intervention Study on Native Hawaiian and Pacific Islander Nutrition and Activity*, Journal of Undergraduate Research, Brigham Young University, March 26, 2015.
McEligot, Archana J.; Juliet McMullin; Ka`ala Pang; Momi Bone; Shauna Winston; Rebekah Ngewa; and Sora Park Tanjasiri. *Dietary Intakes, Obesity and Health Behaviors in Native Hawaiians Residing in Southern California,* Hawai'i Journal of Medicine and Public Health, Vol. 71, No. 5, May 2012, pp. 124-128.

Moy, K.L.; J.F. Sallis; C.L. Ice; and K.M. Thompson. *Physical Activity Correlates for Native Hawaiians and Pacific Islanders in the Mainland United States,* Journal of Health Care, Poor, and Underserved, Vol. 21, No. 4, November 2010, pp. 1203-1214.

*Native Hawaiians and Pacific Islanders: A Community of Contrasts*, Asian Americans Advancing Justice (AAAJ) and Empowering and Pacific Islander Communities (EPIC), California, 2014.

**Food Access and Security and Related Issues**

*Food Availability and Consumption*, USDA, Economic Research Service, Washington D.C.(https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/food-availability-and-consumption/)

Hawai‘i Community Foundation. *A Blueprint for Action – Water Security for an Uncertain Future, Honolulu, HI, 2015.*

Hawai‘i Community Foundation. *Hunger in Hawai‘i: An Overview* (draft), Honolulu, HI, 2016.

*Hunger and Food Insecurity in Hawai‘i – Baseline Estimates 1999 – 2000*, Hawai‘i State Department of Health, Office of Health Status Monitoring, Honolulu, HI, October 2001.

*Increased Food Security and Food Self-Sufficiency Strategy*, Office of Planning, Hawai‘i State Department of Business, Economic Development and Tourism and Hawai‘i State Department of Agriculture, Honolulu, HI, October 2012.

Kent, George. *Food Security in Hawai‘i* (draft), University of Hawai‘i, Honolulu, HI, July 16, 2013.

DELETED “OTHER” AND REPLACED WITH REFERENCES BELOW

REFERENCES

Alcohol's Effects on the Body. (2019, June 06). Retrieved August 7, 2019, from https://www.niaaa.nih.gov/alcohols-effects-body

Cawley, J., & Meyerhoefer, C. (2012). The Medical Care Costs of Obesity: An Instrumental Variables Approach. *Journal of Health Economics,31*(1), 219-230. doi:10.3386/w16467

Choi, S., & Friso, S. (2010). Epigenetics: A New Bridge between Nutrition and Health. *Advances in Nutrition,1*(1), 8-16. doi:10.3945/an.110.1004

Curb, J. D., Aluli, N. E., Kautz, J. A., Petrovitch, H., Knutsen, S. F., Knutsen, R., O'Conner, H. K., & O'Conner, W. E. (1991). Cardiovascular risk factor levels in ethnic Hawaiians. *American journal of public health, 81*(2), 164–167. https://doi.org/10.2105/ajph.81.2.

Foodland. (2017). Weekly ad. Retrieved 2017, from https://foodland.com/savings/weekly-ads/store/

Fujita, R., Hughes, C., & Braun, K. (2004). The traditional Hawaiian diet: A review of the literature. *Pacific Health Dialog,11*(2), 250-259.

Hawaii Department of Business, Economic Development & Tourism. (n.d.). 2017 State of Hawaii Data Book. Retrieved August 7, 2019, from https://dbedt.hawaii.gov/economic/databook/db2017/

Hawaii Department of Health. (2014). Health Reports & Data. Retrieved August 7, 2019, from http://hhdw.org/health-reports-data/category/

Johnstone, A. M., Horgan, G. W., Murison, S. D., Bremner, D. M., & Lobley, G. E. (2008). Effects of a high-protein ketogenic diet on hunger, appetite, and weight loss in obese men feeding ad libitum. *The American Journal of Clinical Nutrition,87*(1), 44-55. doi:10.1093/ajcn/87.1.44

Koenig, H. G. (2012). Religion, Spirituality, and Health: The Research and Clinical Implications. *ISRN Psychiatry,2012,* 1-33. doi:10.5402/2012/278730

Lachance, L. R., & Ramsey, D. (2018). Antidepressant foods: An evidence-based nutrient profiling system for depression. *World Journal of Psychiatry,8*(3), 97-104. doi:10.5498/wjp.v8.i3.97

Leslie, J. (2001). Uli'eo Koa Program: Incorporating a traditional Hawaiian dietary component. *Pacific Health Dialog,8*(2), 401-406.

Manheimer, E. W., Zuuren, E. J., Fedorowicz, Z., & Pijl, H. (2015). Paleolithic nutrition for metabolic syndrome: Systematic review and meta-analysis. *The American Journal of Clinical Nutrition,102*(4), 922-932. doi:10.3945/ajcn.115.113613

Maskarinec, G., Takata, Y., Pagano, I., Carlin, L., Goodman, M. T., Marchand, L. L., . . . Kolonel, L. N. (2006). Trends and Dietary Determinants of Overweight and Obesity in a Multiethnic Population*. *Obesity,14*(4), 717-726. doi:10.1038/oby.2006.82

Mobley, C., Marshall, T. A., Milgrom, P., & Coldwell, S. E. (2009). The Contribution of Dietary Factors to Dental Caries and Disparities in Caries. *Academic Pediatrics,9*(6), 410-414. doi:10.1016/j.acap.2009.09.008

Obert, J., Pearlman, M., Obert, L., & Chapin, S. (2017). Popular Weight Loss Strategies: A Review of Four Weight Loss Techniques. *Current Gastroenterology Reports,19*(12). doi:10.1007/s11894-017-0603-8

Office of Hawaiian Affairs. (n.d.). Native Hawaiian Data Book. Retrieved August 7, 2019, from http://www.ohadatabook.com/

Office of the Surgeon General (US). (2004). *Bone health and osteoporosis: A report of the Surgeon General.*

Oneha, M. F., Dodgson, J., Decambra, M. H., Titcomb, C., Enos, R., & Morimoto-Ching, S. (2016). Connecting culturally and spiritually to healthy eating: A community assessment with Native Hawaiians. *Asian/Pacific Island Nursing Journal,1*(3), 116-126. doi:10.9741/23736658.1023

Pan, A., Sun, Q., Bernstein, A. M., Schulze, M. B., Manson, J. E., Willett, W. C., & Hu, F. B. (2011). Red meat consumption and risk of type 2 diabetes: 3 cohorts of US adults and an updated meta-analysis. *The American Journal of Clinical Nutrition,94*(4), 1088-1096. doi:10.3945/ajcn.111.018978

Pem, D., & Jeewon, R. (2015). Fruit and Vegetable Intake: Benefits and Progress of Nutrition Education Interventions- Narrative Review Article. *Iran Journal of Public Health,44*(10), 1309-1321.

Qiu, R., Cao, W., Tian, H., He, J., Chen, G., & Chen, Y. (2017). Greater Intake of Fruit and Vegetables Is Associated with Greater Bone Mineral Density and Lower Osteoporosis Risk in Middle-Aged and Elderly Adults. *Plos One,12*(1). doi:10.1371/journal.pone.0168906

Safouris, A., Tsivgoulis, G., Sergentanis, T., & Psaltopoulou, T. (2015). Mediterranean Diet and Risk of Dementia. *Current Alzheimer Research,12*(8), 736-744. doi:10.2174/1567205012666150710114430

Seidelmann, S. B., Claggett, B., Cheng, S., Henglin, M., Shah, A., Steffen, L. M., . . . Solomon, S. D. (2018). Dietary carbohydrate intake and mortality: A prospective cohort study and meta-analysis. *The Lancet Public Health,3*(9). doi:10.1016/s2468-2667(18)30135-x

Shintani, T., Beckham, S., O'Connor, H. K., Hughes, C., & Sato, A. (1994). The Waianae Diet Program: a culturally sensitive, community-based obesity and clinical intervention program for the Native Hawaiian population. *Hawaii medical journal, 53*(5), 136–147.

Steele, E. M., Baraldi, L. G., Louzada, M. L., Moubarac, J., Mozaffarian, D., & Monteiro, C. A. (2016). Ultra-processed foods and added sugars in the US diet: Evidence from a nationally representative cross-sectional study. *BMJ Open,6*(3). doi:10.1136/bmjopen-2015-009892

U.S. DHHS & USDA. (n.d.). U.S. Dietary Guidelines for Americans 2015-2020. Retrieved August 7, 2019, from https://health.gov/dietaryguidelines/2015/

University of Washington. (n.d.). GBD Compare. Retrieved August 7, 2019, from https://vizhub.healthdata.org/gbd-compare/

USDA. (n.d.). Food Availability and Consumption. Retrieved August 7, 2019, from https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/food-availability-and-consumption/

Wang, Y., & Beydoun, M. A. (2009). Meat consumption is associated with obesity and central obesity among US adults. *International Journal of Obesity,33*(6), 621-628. doi:10.1038/ijo.2009.45

World Health Organization. (2005). *Chronic diseases and their common risk factors*[PDF]. WHO. https://www.who.int/chp/chronic_disease_report/media/Factsheet1.pdf

Zheng, Y., Li, Y., Satija, A., Pan, A., Sotos-Prieto, M., Rimm, E., . . . Hu, F. B. (2019). Association of changes in red meat consumption with total and cause specific mortality among US women and men: Two prospective cohort studies. *Bmj*,L2110. doi:10.1136/bmj.l2110



# Chapter Five:
# *Oral Health*

# ORAL HEALTH

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**Executive Summary**

***Increased Understanding***

There has been increased research over the last 30 years, with more scholarly publications and increased interest in and understanding of oral health needs.

- Oral health affects the ability to eat and enjoy a full range of dietary choices. It also affects speech, communication, socializing, general health (diabetes and cardiovascular diseases), sleep, general well-being, learning, and employment.
- Vulnerabilities and risks for oral health diseases have changed over time. Oral health inequity persistently affects Native Hawaiian adults and children.
- Financial barriers are one of the primary reasons that patients are not able to see a dentist. Medicaid currently does not offer comprehensive dental care benefits for adults.
- To provide culturally competent oral health care to Native Hawaiians, there is a need for a dental workforce that represents the population.
- Fluoride occurs naturally in groundwater, and community water fluoridation can be one of the most cost-effective ways to deliver fluoride to the people of Hawai‘i.

***Effective and Promising Approaches***

- A full array of dental services is provided statewide by the Federally Qualified Health Centers and the Native Hawaiian Health Care Systems at two clinic locations, one on Kaua‘i and the other on Maui.
- Bringing preventive care to children instead of waiting for children to come to care is proven to be highly effective. School-based sealant and fluoride mouth rinse programs increase access to preventive care for children who otherwise do not access care.
- Linkage to dental case management promotes oral health for children needing specialized care.
- Linking patients to prevention and treatment through school-based oral health education, screening and referral programs, dental case management, and pediatricians’ offices is effective.

***Gaps***

- There is a lack of funding for capital expansion for Native Hawaiian Health Care Systems and Federally Qualified Health Centers to enhance access to services (dental care, screening, referrals, education, etc.) for all, including children, adults, kūpuna,[1] and low-income families.
- School-based sealant and fluoride mouth rinse programs need to be expanded to more schools, especially schools with high needs.
- Funding for school-based programs is lacking. Medicaid/MedQUEST needs policies and a billing system that are amenable to school-based programs.
- Medicaid adult dental benefits, which include prevention and treatment, have been discontinued.
- There are inadequate funding and programs to increase the number of Native Hawaiian dental professionals, especially in Native Hawaiian communities.
- Few programs and educational resources address oral health in terms of Native Hawaiian health concepts and values.
- Water fluoridation is proven to be cost-effective and reaches many but has not been implemented.

[1] elders

- There is a lack of oral health data across the lifespan, especially clinical data and information specific to Native Hawaiians.

***Recommendations for Impact***

- **Address oral health in connection with overall health.**
  - Require continuing education on oral health for medical professionals, and on overall health (diabetes, coronary artery disease, HIV, pregnancy, stress) for dental professionals.
- **Increase oral health literacy and awareness.**
  - Create awareness through media about the importance of good dental hygiene.
  - Develop and implement oral health educational programs for health care providers, families, schools, and communities.
- **Develop a diversified oral health workforce, including rural areas.**
  - Create and implement workforce development programs and higher education programs to increase the number of Native Hawaiian dental professionals in Hawai‘i.
  - Provide funding for workforce development for Native Hawaiians.
  - Develop and establish policies at the state and organizational levels to support Native Hawaiian dental professionals.
  - Foster the development of a collaborative system among families, schools, universities, and workplaces.
- **Invest in prevention.**
  - Provide low-income families with dental supplies (toothbrush, toothpaste, dental floss) through public and private means.
  - Develop policies and programs to promote prevention in the community.
  - Develop policies and practices to increase preventive care in dental clinics.
- **Increase access to care (decrease oral health care disparities).**
  - Restore Medicaid adult comprehensive dental benefits including prevention and treatment.
  - Develop school health policies that address and improve children’s oral health status.
  - Develop sustainable school-based sealant and fluoride mouth rinse programs.
  - Develop and implement community-based programs that improve the oral health of keiki, adults, and kūpuna, especially those who are from low-income families.
  - Provide funding for capital expansion to start up school-based and community-based programs and establish Medicaid policy to make programs sustainable.
  - Strengthen collaboration among State of Hawai‘i Department of Human Services Medicaid program, Native Hawaiian Health Care Systems, Federally Qualified Health Centers, schools, and communities to enact a policy that supports school-based and community-based programs; secure funding for these programs.
- **Implement culturally-adapted programs and practices.**
  - Foster collaboration between Native Hawaiian health experts and dental professionals to develop educational materials.
  - Develop educational programs for dental and medical health care professionals to increase understanding of oral health in the context of Native Hawaiian health concepts and values, and how to adapt practices accordingly.
  - Revisit traditional practices and revitalize them to fit contemporary lifestyles.
- **Systematically improve data collection relevant to Native Hawaiian oral health.**
  - Establish policies and systems to collect data on Native Hawaiian representation in the dental workforce.
  - Improve data collection across the lifespan, especially with respect to clinical data and information delineating Native Hawaiians.
  - Analyze data to improve oral health programs and to support increased representation of Native Hawaiians in the dental workforce.
  - Establish policies to ensure open and responsible data sharing among agencies.

## Introduction

The 1985 *E Ola Mau* report highlighted the change in tooth decay from virtually non-existent prior to 1778 to endemic in 1930. Early research identified dental caries as a major public health problem, with the highest rates of decayed, missing, and filled teeth among Native Hawaiian children. Research also showed a changing diet from a high starch, low refined sugar diet to a high sugar, low starch diet, in the context of negligible fluoride content in Hawaii's civilian water supply. At the time of the 1985 report, programs in the community had demonstrated minimal impact on improving dental health either through education or treatment on an individual or statewide basis. Four primary strategies were recommended, including enhanced fluoridation; dental educational programs for families and school children; regular surveys of the dental status of Hawaii's population, especially of children, followed by immediate and appropriate treatment at sites demonstrating need, at little or no cost to those without dental insurance; and dental protection in competitive sports.

The current report is based on a review of the literature and interviews conducted with Native Hawaiian and non-Native Hawaiian professionals who serve the Native Hawaiian community. It also includes responses from Native Hawaiian patients, patient advocates, and public health organizations. The interview questions focused on obtaining information to improve oral health among those who are currently underserved, particularly within Native Hawaiian communities. This report updates our understanding of the needs, gaps, and effective and promising programs for Native Hawaiian oral health. It emphasizes areas with the greatest disparities in oral health and makes recommendations to ensure impact.

## Increased Understanding

- **Oral health affects the ability to eat and enjoy a full range of dietary choices. It also affects speech, communication, socializing, general health (diabetes and cardiovascular diseases), sleep, general well-being, learning, and employment.**

There has been increased research over the last 30 years, with more than 900 scholarly publications on Native Hawaiian oral health, and increased interest in and understanding of oral health needs. Studies have shown that oral health status affects our overall well-being and functioning in a variety of ways. Studies also have shown that oral health inequity exists and is associated with income, education, race and ethnicity, place (rural vs. urban), and disability status.

Untreated dental decay compromises a child's well-being at home and at school; over time, chronic untreated oral disease adversely impacts an individual's systemic health, quality of life, and economic productivity (The California Society of Pediatric Dentistry, 2017; Hyde, Satariano, & Weintraub, 2006). Oral health status can affect people physically and psychologically, affecting their enjoyment of life; their ability to chew, taste, and savor food; how they look, speak, and socialize; and their self-esteem, self-image, and feelings of social well-being (Sheiham et al., 2001). In recent years, studies have found a two-way association between periodontitis and diabetes, and a relationship between periodontitis and cardiovascular disease (Nazir, 2017; Preshaw et al., 2012). Native Hawaiians are one of the highest-risk populations for cardiometabolic diseases in the United States. Many studies have found increased prevalence of diabetes, obesity, and cardiovascular risk factors among Native Hawaiians and other Pacific Islanders (Mau, Sinclair, Saito, Bauhofer, & Kaholokula, 2009).

*The teeth and your mouth are an expression of yourself. Just like any other part of your body, but teeth are what you smile with…and that self-image is what's going to impact how you take care of yourself and your health status.*

Dan Fujii, DDS, MPH
Dental Director
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- **Vulnerabilities and risks for oral health diseases have changed over time. Oral health inequity persistently affects Native Hawaiian adults and children.**

Clinical and behavioral information related to oral health throughout the lifespan is limited. Moreover, studies on Native Hawaiian perspectives on oral health are limited. Before European contact, Native Hawaiians had excellent oral health. Examination of skeletal remains revealed that the prevalence of caries was 9.6% among children 6-11 years old, and 1.9% among children 12-17 years (Keene, 1986). A study of surveys conducted in 1989 and 1999 found that among Native Hawaiian children 6-8 years old, those with actively carious teeth in need of treatment were 46.1 % in 1989 and 39.6% in 1999, compared to Caucasian children at 25.6% and 22.2%, respectively (Greer, Tengan, Hu, & Takata, 2003). A survey conducted in 2015 found that the untreated decay rate in Native Hawaiian children was 28.5%, compared to 13.2% in Caucasian children (State of Hawai'i, 2016).

A study conducted in 2017 found that Native Hawaiians had the largest proportion of excess tooth loss (Deguchi, Mau, Davis, & Niederman, 2017).

Table 1
*Oral Health Disparities*

| Oral Health Over Time | Pre-European Contact | 1989 | 1999 | 2014<br>2015 |
|---|---|---|---|---|
| **Keiki: Decay** | 9.6%*[b]<br>1.9%*[d] | 46.1%*[a]<br>25.6%**[a] | 39.6%*[a]<br>22.2%**[a] | 28.5%*[c]<br>13.2%**[c] |
| **Adults: Removal** | NA | NA | NA | 48.8%*<br>36.9%** |
| *Native Hawaiian; **Caucasian; [a]Ages 6-8; [b]Ages 6-11; [c]Ages 8-9; [d]Ages 12-17 | | | | |

Several federal reports have called attention to the disproportionate impact of oral disease on vulnerable populations. In each report, lack of information about the complex issues involved in meeting the needs of the vulnerable population was identified as a significant barrier to efforts to understand and improve their oral health (Morgan et al., 2015).

Poor oral health and dental hygiene are particularly prevalent among vulnerable populations. Oral health status has been found to be associated with socioeconomics, race and ethnicity, and rurality (Arcury, Preisser, Gesler, & Powers, 2005; Doescher & Keppel, 2015; Huang & Park, 2015; Kumar, Kroon, & Lalloo, 2014; Makhija et al., 2006; Rural Health Information Hub, 2014; Vargas, Dye, & Hayes, 2003; Vargas, Ronzio, & Hayes, 2003). Oral health inequity persistently affects Native Hawaiian adults and children (Greer et al., 2003; State of Hawai‘i, 2015, 2016). Native Hawaiian adults have higher rates of tooth loss than Caucasians and Japanese, and Native Hawaiian children have higher rates of dental decay than their Caucasian and Japanese peers (State of Hawai‘i, 2015, 2016). Native Hawaiians are overrepresented in the lower socioeconomic strata, under-represented in higher education, and more likely to be marginalized from the larger society (Mau et al., 2009).

Health disparities in oral health and dental care utilization have been found in minority groups, in rural areas, among those of low socioeconomic status, and in people with disabilities (Armour, Swanson, Waldman, & Perlman, 2008; Doescher & Keppel, 2015; Edelstein, 2002; Pourat & Finocchio, 2010). According to the Hawai‘i Behavior Risk Factor Surveillance System 2015 report, nearly twice as many Native Hawaiians as Caucasians had not visited a dentist for more than five years (14.2% vs. 7.5%; State of Hawai‘i, 2015). Emergency usage data shows that the rate of preventable emergency oral health visits for Native Hawaiians was more than 1.55 times greater than for non-Hawaiians (27.3 per 10,000 for Native Hawaiians vs. 17.6 for non-Hawaiians; Hayes, 2018). These data suggest that Native Hawaiians lack access to preventive and treatment visits, and that the need for prevention and treatment is great. This is not surprising, given Native Hawaiians are over-represented in other risk groups such as those with low socioeconomic status and rural residence.

In the 2015 report *Needs and Assets Assessment of Oral Health Services in Hawai‘i: Results and Recommendations* (Sugimoto-Matsuda & Stridiron, 2017), only 30% of adults (>18 years of age) reported seeing a dentist in the past year, and more than 3,000 emergency room visits occurred annually due to preventable dental problems. Importantly, persistent dental health disparities were identified in groups with greater proportions of Native Hawaiians, such as those with low socioeconomic status, rural residence, pregnancy, and disability. For example, low-income residents were more likely to have dental problems and less likely to see a dentist each year, with 51% of low-income adults having lost teeth from dental disease, compared to 32% of higher-income adults. Likewise, 29% of low-income children reported dental problems in the past six months, compared to 13% of high-income children. 82% of high-income adults saw a dentist each year, compared to 52% of those categorized as low-income. Among children enrolled in Hawai‘i’s Medicaid/QUEST program, 59% saw a dentist in 2013, which was higher than national Medicaid statistics (50%); however, it is important to note that children in Hawai‘i’s Medicaid program were receiving more treatment services, rather than preventive care, compared to national trends. These

disparities were greatest for Native Hawaiians (see the section on Gaps later in this chapter).

Overall, the state's estimated ratio of residents per dentist was 1,283 to 1 (Sugimoto-Matsuda & Stridiron, 2017). However, the gap widened on the more rural neighbor islands, with the highest ratios in Kauaʻi County (1,813:1), followed by Hawaiʻi County (1,698:1) and Maui County (1,613:1). Of note, Native Hawaiians reside more often in rural communities.

Furthermore, only 41% of pregnant women in Hawaiʻi reported seeing a dentist during their pregnancy (Sugimoto-Matsuda & Stridiron, 2017). Pregnant women living in Hawaiʻi County, those with less than a high school education, younger mothers (20-29 years old), and women who were low-income and on Medicaid/QUEST had the lowest rates of visits to a dentist during pregnancy.

Nationally, people with disabilities are more likely than people without disabilities to have poor oral health. Native Hawaiians experience higher age-specific levels of disability when compared with their Japanese and White counterparts (Pobutsky, Hirokawa, & Reyes-Salvail, 2003). People with disabilities are less likely to have visited a dentist or dental clinic in the past year and more likely to suffer edentulism (toothlessness) compared with those without disabilities (Armour et al., 2008). Individuals with intellectual and developmental disabilities are more likely to have poorer oral hygiene, increased decay, and increased periodontal (gum) disease than the general population (Binkley et al., 2014).

Low health literacy is associated with poorer health outcomes and use of health care services (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011). Although culturally adapted health education programs for Native Hawaiians have been developed and made systematically available in regard to diabetes and cardiovascular disease, there are as yet no such programs related to oral health (The Center for Native and Pacific Health Disparities Research, 2017; The Queen's Medical Center, 2017). Medical education programs to increase cultural competency have been shown to be effective and have been integrated at the University of Hawaiʻi John A. Burns School of Medicine (Beach et al., 2005; Native Hawaiian Center of Excellence, 2015). However, the State of Hawaiʻi lacks a dental school; dentists are trained outside of Hawaiʻi and have limited education in cultural competency to treat Native Hawaiian patients.

*And so, for health care, it's so important because people are passing away way sooner than they should be [and losing their teeth before they should]. Dealing with health disparities, we want to hear the stories so that it can impact our children, you know, and we can start to turn around – those children can start to turn around and help the kūpuna…and in this quest that we have, we're trying to ask questions about what, you know, what our kūpuna [are] recommending us to do, and so, can you talk about your community and what their values are, and if there was something that we could do to help the culture become something greater and people to instill that more so within their children.*

Dental patient interview

Referral services, case management, and medical-dental integration are pathways to increase access to oral health care for Native Hawaiian communities. Place-based screening seems to increase awareness of the importance of oral health and the need for professional oral health care. However, screening itself does not directly translate to access to care. Referral services, case management, and medical-dental integration must be thoroughly planned and implemented to ensure that patients receive care (Nelson, Rashid, Galvin, Essien, & Levine, 1999). A shared vision among potential collaborators facilitates communication regarding strategies to achieve common goals.

- **Financial barriers are one of the primary reasons that patients are not able to see a dentist. Medicaid currently does not offer comprehensive dental care benefits for adults.**

The Affordable Care Act mandates that states must provide dental benefits to children covered by Medicaid and the Children's Health Insurance Program (CHIP), but states are allowed to choose whether to provide dental benefits for adults (Center for Medicaid and CHIP Services, n.d.). Hawaii's Medicaid currently does not offer comprehensive dental care benefits for adults and only covers emergency visits with limited services (tooth extraction and pain medication; Fink, 2009). The negative public health effects and increased economic impact of eliminating basic dental care demonstrate the importance of affordable and accessible preventive oral health care (Salomon, Heidel, Kolokythas, Miloro, & Schlieve, 2017).

In one study, the need for dental services was found to be high among the dentate elderly (those with teeth), with nearly three-quarters reporting having visited a dentist within the past year (Warren, Cowen, Watkins, & Hand, 2000). However, Medicare does not cover most dental care, including dental procedures such as cleanings, fillings, and tooth extractions, or supplies such as dentures, dental plates, and other dental devices. Coverage under Medicare Part A (Hospital Insurance) is limited to certain dental

services during hospitalization (U.S. Centers for Medicare & Medicaid Services, 2013). The lack of public health policy to support access to regular dental care among the elderly seems to conflict with Native Hawaiian culture which values its kūpuna.[2]

- **To provide culturally competent oral health care to Native Hawaiians, there is a need for a dental workforce that represents the population.**

Ambrose et al. (2012) reported that having a Native Hawaiian physician caring for a Native Hawaiian patient improved patient-physician interactions and several patient-related outcomes such as satisfaction, provider preference, and quality of care. Several other studies have found similar effects of ethnic concordance between patient and physician (Saha, Arbelaez, & Cooper, 2003). There is a need to investigate whether cultivating a proportionate representation of Native Hawaiians in the dental workforce might promote better oral health among Native Hawaiians. Further discussion related to this issue may be found in Chapter 7: Workforce Development.

Data on Native Hawaiian representation within the dental workforce are not readily available. The Professional & Vocational Licensing Division of the State Department of Commerce and Consumer Affairs, which licenses dentists and dental hygienists, does not collect data on the ethnicity and race of applicants. Also, the Hawai'i Dental Association – a statewide professional association of approximately 1,000 members representing over 92% of all dentists practicing in Hawai'i in general dentistry and the eight dental specialties recognized by the American Dental Association – does not collect nor provide race or ethnicity information regarding their membership (Hawai'i Dental Association, 2017).

- **Fluoride occurs naturally in groundwater, and community water fluoridation can be one of the most cost-effective ways to deliver fluoride to the people of Hawai'i.**

Most common oral diseases, such as tooth decay and periodontitis (gum disease), can be prevented through a combination of community, professional, and individual strategies. Such strategies include disease prevention and health promotion interventions to create a healthy environment, reduce risk factors, inform target groups, and improve knowledge and behaviors. These can be implemented community-wide through the efforts of health professionals and policy-makers, or through the exercise of individual responsibility (National Institute of Dental and Craniofacial Research, 2014).

More than 70 years of scientific research has consistently shown that an optimal level of fluoride in community water is safe and effective in preventing tooth decay, reducing the incidence of cavities by at least 25% in both children and adults (American Dental Association, 2017). A systematic review published in 2000 cautioned that the evidence of a beneficial reduction in caries should be considered together with the increased prevalence of dental fluorosis. There has been no clear evidence of other potential adverse effects (McDonagh et al., 2000). A 2015 systematic review published found that water fluoridation is effective at reducing levels of tooth decay among children (Iheozor-Ejiofor et al., 2015). Legislative bills regarding water fluoridation have been heard in the past, meeting with much opposition. However, it is unclear to what extent the opponents represented Native Hawaiian communities or values.

Tooth decay (dental caries) is damage to a tooth that can occur when decay-causing bacteria in the mouth come into contact with sugars and starches from foods and drinks, forming an acid which destroys the tooth's enamel by causing it to lose minerals. This can lead to a small hole in the tooth, called a cavity. If tooth decay is not treated, it can cause pain, infection, and even tooth loss (National Institute of Dental and Craniofacial Research, 2018). Making dietary choices that limit foods high in sugars and starches, eating nutritious and balanced meals, helps lessens the chance of developing tooth decay. A study found that child/adolescent exposure to food-related ads, particularly for sugar-sweetened beverages and fast-food restaurants, was significantly higher in areas with higher proportions of black children/adolescents and lower-income households (Powell, Wada, & Kumanyika, 2014). Further, a study found that despite overwhelming consensus on the causal role of sugars in tooth decay and recommendations by expert committees, quantitative targets restricting the intake of sugars to control dental caries have not been widely implemented (Kearns, Glantz, & Schmidt, 2015).

Along with water fluoridation, a greater diffusion of other preventive interventions could reduce the incidence of caries at an affordable cost. Topical application of fluoride (through fluoride gel, toothpaste, and mouth rinses) and fluoride supplements would be convenient and inexpensive tools to reduce dental caries. In addition, pit and fissure sealants and fluoride varnishes appear likely to effectively reduce the risk of caries. To prevent the progression of tooth decay, 38% silver diamine

[2] elders

fluoride (SDF) arrests active caries at 81% success rate (Gao et al., 2016). Apart from staining the arrested lesion black, no significant complication of SDF use among children is reported. SDF treatment is noninvasive and easily implemented. It can be a promising strategy to manage dental caries in young children or those who have special needs (Gao et al., 2016).

Further, natural preventive care that can be integrated in clinical and home care is gaining interest. Though limited, some studies have suggested the effectiveness of natural products, such as baking soda to reduce plaque. Plaque is a sticky, colorless film of bacteria that continually forms on our teeth and along the gum line. Plaque contains bacteria that cause cavities and gum disease (Ghassemi, Vorwerk, Hooper, Putt, & Milleman, 2008; Putt et al., 2008). A study compared the effectiveness of coconut oil vs. chlorhexidine (a prescription mouthwash with antibacterial properties) and found no statistically significant difference between them in the reduction of S. mutants, a bacterium commonly found in the human oral cavity and a significant contributor to tooth decay (Peedikayil et al., 2016).

According to the Pew Charitable Trust's report on children's dental health, Hawai'i meets only one of the eight policy benchmarks aimed at improving children's dental health, making it the worst overall performer among the 50 states and the District of Columbia. Hawai'i does not fully use proven preventive strategies. It lacks a school sealant program and has the lowest rate of fluoridation of any state. Residents living on military bases are the only ones who receive fluoridated water (The Pew Charitable Trust, 2011).

There are growing interest in and need for mobile dentistry and place-based care and referral (based in schools, community centers, churches, Head Start programs, WIC programs, senior centers, home care services, etc.) (Branson, 2014; Rural Health Information Hub, 2017; Sugimoto-Matsuda & Stridiron, 2017). Place-based care is defined as providing direct access where people live, work, go to school, worship, or receive social services. A systematic review of preventive dental visits indicated that a focus on making care a positive experience is likely to be particularly beneficial (Harris, Pennington, & Whitehead, 2017). Interviews conducted for this report revealed interest in and need for place- and community-based care. Native Hawaiians appeared to prefer care close to their community, delivered through outreach programs. However, the interview results indicated that funding and billing policies do not seem to support outreach programs such as school-based and other place-based care. Increased interest in teledentistry may help overcome this barrier in the future.

*Sometimes organizations and individuals step up beyond their comfort zones and take on new responsibilities to address health issues. When we expand our roles, and take action to ease the suffering of others, we immediately improve our lives and others'. Our community needs more people stepping up and taking action to prevent individual disease and improve community health.*

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Family Health Services Division
Hawai'i State Department of Health

**Effective and Promising Approaches**

Since 1988, great strides have been made in improving the oral health status of Native Hawaiians. Cooperative efforts of the Native Hawaiian Health Centers, Federally Qualified Health Centers, and various community entities have resulted in projects with the potential for far-reaching effects in enhancing the oral health of Native Hawaiians. These endeavors not only improve access to care, but more importantly, provide oral health education that can help break the cycle of poor oral health through the generations.

- **A full array of dental services is provided statewide by the Federally Qualified Health Centers and the Native Hawaiian Health Care Systems at two clinic locations, one on Kaua'i and the other on Maui.**

Federally Qualified Health Centers and Native Hawaiian Health Care Systems located near Native Hawaiian communities are currently providing dental care integrated within a larger comprehensive health center. Both patients and providers cite this centralized health care system as a successful way of reducing barriers to care. Health care is conveniently centered in one clinic, providing patients access to a wide range of resources, including medical, dental, vision, behavioral health, and traditional healing services. Some centers also include services to transport their clients to and from appointments.

Federally Qualified Health Centers and Native Hawaiian Health Care Systems also allow providers to focus on health care outcomes rather than the financial pressures with which many in the private sector may be burdened. Appointment times can be lengthened so providers can include oral health education tailored to a patient's cultural influences. In view of the holistic

Native Hawaiian conception of health, it is vitally important to form a strong patient-provider relationship and address oral health in the context of overall health. The Native Hawaiian Health Care System was designed from a holistic perspective, and many interviewees expressed that they are more comfortable obtaining care in such an environment. The Federally Qualified Health Care System and Native Hawaiian Health Care Centers allow providers the time to design and implement programs that result in a broader, community-wide reduction in disease. These programs include oral health education in schools and other community organizations and events, and school-based sealant and fluoride programs.

- **Bringing preventive care to children instead of waiting for children to come to care is proven to be highly effective. School-based sealant and fluoride mouth rinse programs increase access to preventive care for children who otherwise do not access care.**

Some of the Federally Qualified Health Centers and Native Hawaiian Health Care Systems have implemented mobile dentistry and place-based dental services outside the traditional office setting, providing greater accessibility and convenience for patients and their families. Services include education, screenings, fluoride varnish, prophylaxis, and sealants. These services are currently being offered at Head Start, preschools, elementary schools, after-school programs, and community health fairs.

More comprehensive care has also been offered through establishing a virtual dental home for patients, with a pilot project currently underway on Hawai‘i island at Head Start and WIC locations, and a project pending on Maui in partnership with Head Start, WIC, and a long-term care facility. Virtual dental homes provide onsite education and preventive oral health services two to three days a week at the above locations. Their continual presence serves as a reminder for students and staff of the importance of regular oral hygiene care, providing reinforcement that serves to develop healthy lifelong habits.

- **Linkage to dental case management promotes oral health for children needing specialized care.**

Oral health programs through Federally Qualified Health Centers and Native Hawaiian Health Care Systems have helped parents and children establish a dental home. On Maui, student participants who have indicated they do not have a dentist, those who have not seen a dentist in over a year, or those who have rampant, active decay are provided with information about how to receive services at the Native Hawaiian Health Care System. Health care workers from the Native Hawaiian Health Care System also follow up with phone calls and letters to aid parents in obtaining an appointment. This approach has been marginally successful in helping to establish care for participants in need of a dental home.

- **Linking patients to prevention and treatment through school-based oral health education, screening and referral programs, dental case management, and pediatricians’ offices is effective.**

A key component in improving oral health is education. Oral health directors at Federally Qualified Health Centers and Native Hawaiian Health Care Systems, dental hygienists, and dentists in private practice all agree that education is the prevailing force that can ultimately lead to better long-term oral health outcomes. Improving oral health literacy in the dental office is a key component in this education. To this end, providers are focusing on effective communication with patients. Techniques including open-ended questions, the use of patient-friendly visual materials, and the teach-back method serve to empower patients to become their own health advocates.

Efforts are also being made to provide oral health education outside the dental office, such as at Head Start and Early Head Start programs, preschools, elementary schools, after-school programs, and long-term care facilities across the state. Students, teachers, school administrators, health aides, parents or guardians, and caregivers have been able to benefit from such outreach programs provided primarily by the Federally Qualified Health Centers and Native Hawaiian Health Centers.

Interdisciplinary education is also an important component in improving oral health outcomes, especially in children, pregnant mothers, and those with diabetes. Short informational briefings at monthly meetings have been successful in providing updates and recommendations to pediatricians, OB/GYNs, and nurses. The Native Hawaiian holistic approach to health may benefit both Native Hawaiians and non-Hawaiians, leading to positive correlations among oral health, overall health, and general well-being.

*As my kumu, my Aloha says, Hawaiians didn’t have the Western afflictions because we were an isolated island chain and we didn’t have visitors. For instance, dental caries, we didn’t have dental caries, we didn’t have the same kind that we have today. La‘au*

*lapa'au*[3] *evolved over hundreds of years to treat the afflictions that we had at the time. But now we get exposed to all of this stuff, so we have these diseases and symptoms and maladies that came from the Western world. So that is what Western medicine has evolved to treat. It's almost that the two of them are two different worlds, because they came out of two different worlds…but they are very complementary because of that. So, in the Western world, TMJ, temporal mandibular joint dysfunction syndrome, it's pain in your jaw joint that causes headaches. It's a stress-related thing…In the '80s and '90s it was a big thing in the dental world for very hands-on treatment with these very intricate ways of treatment and they had different schools of thought…But it boiled down to what research has told us is that it has nothing to do with the mechanics of the bite and that it is mostly a stress-related thing. And so, of course, Hawaiians, with the cultural baggage that we have, there's a lot of stress-related problems and it becomes a pattern, and now, you look at it now, in lapa'au you look at the whole person, you look at not only the whole person but their spirituality and their ancestors, okay, and it gives you a great understanding for…these stress-related afflictions. The voids in one are filled by the attributes of the other. That's why I think it's the most effective way to heal people. So…although there's times we are with certain patients I can't tell them, oh this, you don't tell them, people. It's how you present things…if you tell a Hawaiian person that you are bringing in lapa'au principles, it's immediately accepted, and they prefer that, especially the older ones.*

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Dental Director
Lana'i Community Health Center

Native Hawaiian health care was learned through the mo'olelo[4] passed down from generation to generation. The practice of la'au lapa'au by kahuna[5] includes gathering, preparing, and administering plant, animal, and mineral remedies from the land and sea with prayer to heal mind, body, and spirit (Hilgenkamp & Pescaia, 2003). The following story illustrates the importance of learning and teaching the protocols of health to the Native Hawaiian people, and the relevance of these to oral health.

*One by one the coals in the fire-pit died down as the cold-bite of predawn spread through the small grass house. But neither the shaggy-haired old man nor the beardless youth sitting by his side moved as they waited…to start the trip up the valley back of their home to gather medical herbs. Through the chants and riddles, prayers, allegories, and stories, the boy had learned about the plants and their uses. From the shoreline to the peaks of the mountains the gods gave the plants that could be used to repair mana-drained bodies. And it was the kahuna-trained la'au lapa'au who was the keeper of the secrets (huna) of the plants, who knew their compounding uses. The kahuna la'au lapa'au combined the knowledge of the agriculturalist with that of the medical scientist. Few plants escaped his attention, and most were used in some form of treatment.*

*Before beginning his formal apprenticeship the young la'au lapa'au trainee knew how to identify many of the basic plants, their growth patterns, and popular uses. As his training began, this basic knowledge was put in order. He learned the families of plants that assigned relationships on the basis of sex, leaf structure, appearance of flowers, and other growth characteristics. While learning the names of the plants, the trainee also learned all the variations that a plant name might have so that his choice of plants for medical use might utilize the power of the words used for the plant name.*

(Gutmanis, 1976, pg. 44)

With the knowledge of the 'āina[6] passed down for generations, Native Hawaiians were able to find cures for a multitude of illnesses. Some examples of la'au lapa'au to treat oral health issues include inserting a plug from the root of the puakala into the cavity; or rubbing the watery sap from a green kukui nut picked from a tree in the morning sun, or the sap from a banana flower, to cure bad breath or a coated tongue (Gutmanis, 1976).

Combining traditional Native Hawaiian approaches to health with Western methods may provide an optimal way to prevent and treat oral health problems. Indeed, "Western" studies are now finding what Native Hawaiians have known for generations: that oral health, overall health, and general well-being are inextricable from one another.

**Community Meetings**

Community meetings are an important way of gathering information about an area's perceived oral health needs and developing customized solutions to meet those needs. These meetings help build relationships with the community, provide an

[3] healing remedies
[4] stories
[5] priest, minister, shaman, expert in medicine
[6] land

opportunity to educate and promote oral health, and develop activities that will best assist the local population in receiving dental care. Bright Smiles Hawai‘i (2017) held a series of focus groups around the state to ask communities how oral health could be improved. Four community initiatives were implemented as a result of these meetings. Among these initiatives include Bright Smiles Ka‘u, in which organizers have offered oral health education and distributed oral health kits to various community groups and events; and Brightest Smiles Maui, in which organizers have held several talk-story sessions on Maui and Moloka‘i with various small groups affected by oral health disparities.

Ka ‘ike a ka mākua he hei na ke keiki.

*The knowledge of the parent is absorbed by the child.*

‘Ōlelo No‘eau #1397
(Pukui, 1983, p. 155)

**Private Grants**

Private foundation grants have been instrumental in supplementing federal dollars to support Native Hawaiian oral health initiatives. Although Federally Qualified Health Centers and Native Hawaiian Health Care Systems apply a sliding fee schedule based on patients’ ability to pay, some services, including dentures, crowns, and bridges, still accrue charges that are unaffordable to many. Private foundation grants have allowed these patients to obtain treatment that they otherwise could not afford. Private foundation grants have also allowed for the expansion of services to remote areas, and the implementation of outreach programs.

## Gaps

- **There is a lack of funding for capital expansion of Native Hawaiian Health Care Systems and Federally Qualified Health Centers to increase access to services (dental care, screening, referrals, education, etc.) for all, including children, adults, kūpuna, and low-income families.**

Gaps in access to oral health care are a universal issue in the United States but are particularly prevalent in minority and low-income populations that lack health equity. These groups receive fewer preventive services and lower quality health care in general. Language barriers and the lack of cross-cultural medical education negatively affect clinical decision-making in their care. Dental health has been largely disconnected from overall health, and, as a result, is even more susceptible to these inequities. Communities statewide need to be directly engaged as active partners with the oral health system to address these disparities and improve oral health outcomes for Native Hawaiians. Federal funding for capital expansion for Native Hawaiian Health Care Systems and Federally Qualified Health Centers would permit greater access to dental care, screening, referrals, education, and other related services to children, adults, and kūpuna, particularly those from low-income families.

**Outreach Programs**

The tele-dentistry model is spreading across the country, and a pilot project was initiated on the island of Hawai‘i; however, insurance plans, including Medicaid, are slow to change their reimbursement policies, making it difficult to sustain these programs. Mobile dentistry and place-based care, which eliminate barriers such as transportation and the challenges of navigating through a health care system, are grossly underutilized.

**Health Policy**

Water fluoridation is widely considered one of the most effective public health measures available to help prevent dental decay in a community. Despite repeated attempts to institute water fluoridation over several years at the state and county policy levels, Hawai‘i currently has fluoridated water only within federally-controlled military communities, which constitute about 11% of the statewide population. Other current mechanisms for delivering fluoride to children include treatment programs in selected DOE elementary schools.

- **School-based sealant and fluoride mouth rinse programs need to be expanded to all schools, especially schools with high needs.**
  - **Funding for school-based programs is lacking. Medicaid/MedQUEST needs policies and a billing system that are amenable to school-based programs.**

**Prevention**

School-based sealant and fluoride treatment programs are an effective primary prevention measure and need to be expanded into more Hawai‘i schools, especially schools with greater numbers of Native Hawaiians students and higher oral health needs. This would require more sustainable funding for school-based oral health programs. Preventive measures are

proven to be cost-effective and far-reaching in their impact.

Local diet in Hawai‘i is a key factor in poor oral health, often reflecting limited access to healthy foods that are affordable. It is cheaper to eat unhealthy foods from fast-food establishments, which are more accessible. High-sugar foods and beverages are a pervasive presence in society. Other unhealthy eating habits, from an oral health perspective, include chewing on food before feeding infants, which promotes exchange of bacteria that can cause tooth decay. Also, “bottle mouth” occurs when babies drink milk or juice while resting or sleeping.

Exposure to food-related television advertising is associated with children’s purchase requests, consumption patterns, and adiposity. Nutritional content studies show that despite industry pledges to promote only healthy products, relatively little progress has been made; the vast majority of television advertisements seen by or directed at children consist of unhealthy foods and beverages that are high in saturated fat, sugar, or sodium (Powell et al., 2014).

Interviewees for our task force report shared a motivation to address oral health in a holistic way with their ‘ohana and the community. Several interviewees spoke of links among oral health, diet, and stress. Revisiting and revitalizing traditional practices, and reducing the consumption of a high-sugar, high-carbohydrate Western diet, may be a strong interest and need for many Native Hawaiians. Inhibitors and enablers of the consumption of a traditional Native Hawaiian diet need to be investigated from a public health perspective, and policies implemented to increase access to traditional foods.

**Education Programs**

In the past, elementary schools often created interactive visual methods of teaching children good oral health, along with offering routine visits by dental hygienists from the State of Hawai‘i Department of Health to carry out primary dental hygiene activities. These services have largely been discontinued. It appears that educating the younger generations about oral health is not a priority in schools, although schools might be the best venue for disseminating information to Native Hawaiian children and youth.

More programs and educational resources are required statewide to address oral health in relation to Native Hawaiian health concepts and values. Lack of access to Native Hawaiian Home Lands and loss of land contributes to a loss of cultural traditional living practices that affect oral health.

**Disparities in Health Outcome**

- **Medicaid adult dental benefits, which include prevention and treatment, have been discontinued.**

Socioeconomic status is a major contributor to oral health disparities. Native Hawaiians on Medicaid are covered only through age 20 for complete preventive and restorative services. Beyond age 20, adults on Medicaid receive only emergency services, which are often defined as pulling badly decayed teeth. Many dental providers are unwilling to accept adult patients on Medicaid because the reimbursement for services is low in comparison to other coverage. There are widely-known differences in oral health access for children and adults in Hawai‘i due to broader Medicaid oral health coverage for children, encompassing a greater variety of preventive and treatment services.

Medicare does not offer a dental plan; thus, dental plan coverage must come out-of-pocket (Medicare.gov, n.d.). As persons on Medicare – aged 65 or over, blind, or disabled – are usually on fixed incomes, these out-of-pocket costs for dental coverage or co-payments are often prohibitive. Even for those Native Hawaiians with some form of medical and dental health coverage, co-payments are increasingly costly, particularly with advanced restorative oral health services such as dentures, partial dentures, and crowns. Many cite their need to make regular payments for rent, transportation, food, utilities, and other basic household needs as outweighing their oral health needs. Hence, the largest gaps are financial; many people feel that they cannot afford dental health services. More funding for programs that effectively reach Native Hawaiians communities to promote oral health are needed, as well as more funding for existing oral health programs that are proven to work well.

With Native Hawaiian Health Care Systems and Federally Qualified Health Centers at over-capacity, with shortages of dentists and hygienists, Native Hawaiians tend to go instead to the private dental care sector if they can afford it or avoid seeking care altogether until it becomes an urgent issue. The consequences of dental disease often make it challenging for Native Hawaiians to complete their schooling and maintain steady employment. Higher dropout rates, increased unemployment, and lost tax revenues diminish economic stability at the local, state, regional, and national levels. There are disproportionate and serious effects of provider shortages on low-income and rural community members as well as on people with disabilities. These groups struggle to find providers who accept public dental insurance, serve patients in rural areas, or serve persons with disabilities or other special needs.

**Disparities in Utilization of Care**

*We do have those who fall through the cracks and those are the ones we care about; those are the ones we want to help.*

Tasha Kama
Patient Advocate/Community Member
Maui's Brightest Smilers

Transportation to oral health services is an issue for many in rural locations. There is a need for enhanced access for residents of these locations through such innovative programs as mobile dental service vans. There are areas of the state where a single provider is currently the sole source of oral health care in the community. In many areas, there is a need for after-hour and weekend services for people who work Monday through Friday and cannot take time off work to be seen for oral health care. There have been 4,000 emergency room visits by Native Hawaiians for oral health-related problems in 2011-2014 statewide – i.e., 1,000 visits per year. Native Hawaiians have the highest rate of emergency room use for oral health problems in Hawai‘i – 8 times higher than all other populations combined (Hayes, 2018). More data and analyses are needed to determine why this is occurring since emergency rooms are not effective at serving as a dental home and are more expensive than other oral health service options. Moreover, dental services are generally not available there. Emergency room personnel are typically ill-equipped to address oral health problems. Frequent use of emergency rooms to address non-traumatic oral health needs is a clear indication that the existing oral health system is failing Native Hawaiians.

**Medical-Dental Integration**

Hawai‘i lacks an integrated oral health system of services, particularly for those with minimal if any oral health coverage. This problem is more severe in rural areas such as the neighbor islands, where the delivery system depends on a few dental businesses that may not have the capacity to provide access for all in the community who need it or who might not accept persons without more comprehensive oral health coverage.

Better collaboration between the medical and dental professions would also improve the oral health status of community members across entire socioeconomic lines. There are many who regularly seek care from a physician for specific conditions, such as pregnancy, diabetes, or heart conditions, but never set foot in a dental office. Obstetricians/gynecologists and pediatricians need to emphasize the importance of prenatal and infant dental care, reinforcing the recommendation set forth by the American Academy of Pediatric Dentistry that all children see a dentist by age one. Similarly, primary care physicians, endocrinologists, and cardiologists can counsel their patients on the importance of seeking regular dental care. Other screening and preventive procedures, such as fluoride varnish, can also be done in a physician’s office.

**Oral Health and Overall Health**

There is a wide gap between medical and dental knowledge and practice, and a great need for integrated services delivery. On many levels, health care providers and consumers alike do not consistently act upon the knowledge that the mouth is an important part of the body, and its health has significant effects on overall health and well-being. A multifaceted approach oriented toward public health is needed to improve oral health status and provide a range of services from prevention to repair, restoration, and stabilization. Widespread community education is needed to link oral health conditions to overall health, and to prioritize oral health promotion to prevent adverse effects to overall health. We need to make clear the connection of oral health to diabetes and cardiac status. We need to emphasize that poor oral health can increase stress, and thereby give rise to a host of other problems in the body. In addition, there is social and personal stigma attached to having visibly bad teeth, which can detract from self-esteem and thus affect success in life, including work and relationships.

**Culture**

The Western approach to oral health has tended to localize treatment to body parts (tooth, gums, jaw, etc.). By contrast, the traditional Hawaiian approach to health is to view and treat the patient holistically. Indeed, many interviewees expressed their interest in approaching oral health holistically. However, not all oral health care providers are trained in holistic approaches, nor do they possess the cultural competency to adapt their practice to meet the patient’s health culture.

*...Segments of sugar cane were peeled with the teeth and chewed, and chunks of dried squid were given the growing youngster to chew on to develop good jaw muscles and strong teeth. Wood ash or charcoal was rubbed on and between the teeth for cleansing, after which the mouth was rinsed with fresh or sea water.*

(Handy & Pukui, 1950, pp. 89-90)

This account shows that Native Hawaiians knew the importance of oral health and prevention. It indicates their recognition that good habits start early in life and are transmitted across generations. Revisiting traditional wisdom and practices and revitalizing them to fit the "modern" lifestyle may greatly benefit oral health among Native Hawaiians.

**Workforce Development**

- **There are inadequate funding and programs to increase the number of Native Hawaiian dental professionals, especially in Native Hawaiian communities.**

There is a need for increased representation of Native Hawaiians within the local workforce of oral health care providers at both professional and para-professional levels. Hawai'i lacks a dental school, and a report by the Hawai'i Dental Service indicates that only 11% of the survey participants' academic institutions have programs that are culturally based or culturally adapted (Sugimoto-Matsuda & Stridiron, 2017). Increased efforts to recruit, educate, and retain Native Hawaiians in Hawai'i will help build a culturally competent workforce from whom Native Hawaiians feel comfortable seeking care. Programs and educational resources to address oral health in relation to Native Hawaiian health concepts and values are also currently lacking. Finally, data collection and dissemination regarding Native Hawaiians' oral health status and related disparities are required to shape policies and strategies.

**Data Availability and Research**

- **There is a lack of data across the lifespan, especially clinical data and information specific to Native Hawaiians.**

There is a need for improved collection, analysis, and dissemination of data related to oral health disparities affecting Native Hawaiians, including access and barriers to oral health care, and other community-voiced oral health needs. There are approximately 68,000 Native Hawaiians on Medicaid in Hawai'i. Low reimbursement rates and lack of providers willing to treat Medicaid recipients are issues on which data and analysis are required to develop and implement improved care options for this population.

**Recommendations for Impact**

'A'ohe mea nana e ho'opuhili,
he moho no ka lā makani.

*There is no one to interfere,*
*for he is a messenger of a windy day.*

Said in admiration of a person
who lets nothing stop him from
carrying out the task entrusted to him.

'Ōlelo No'eau #189
(Pukui, 1983, p. 23)

Interview results yielded recommendations for policy, systems, and environmental (program) changes to improve oral health status among Native Hawaiians. Recommended policy changes include policies at the legislative and organizational levels. Systems change involves the rules within an organization. Systems change and policy change often work hand-in-hand. Often, systems change focuses on changing infrastructure within a school, park, worksite, or health setting, or instituting processes or procedures at the system level that ensure a healthier workplace. Environmental change may include physical (programs, structures, or services), social (attitudes or behaviors with respect to policies that promote health), and economic (financial incentives or disincentives) factors that influence people's practices (The Food Trust, 2012). We focus on describing program changes as an environmental component in the following section. Policy, system, and program changes need to work in synergy for greater impact and sustainability. Further, both state-wide systemic change and autonomy in community-level decision-making may be critical in leveraging resources to create impact.

- **Address oral health in connection with overall health.**
  - **Require continuing education on oral health for medical professionals, and on overall health (diabetes, coronary artery disease, HIV, pregnancy, stress) for dental professionals.**

The interconnections between physical and emotional health, which have been the subject of much contemporary research in Western medicine, have long been known to Native Hawaiians. As Native Hawaiians have traditionally addressed oral health from a holistic perspective, we recommend modifying current practices to understand patients' overall health and to address oral health within the context of overall health, including patients' lifestyles. We recommend establishing policies to promote inter-professional continuing education on oral health for medical professionals and on overall health conditions such as diabetes, coronary artery disease, HIV, pregnancy, and

stress for dental professionals; systems to deliver inter-professional health trainings; and programs that address holistic approaches to oral health.

- **Increase oral health literacy and awareness.**
  - **Create awareness through media about the importance of good dental hygiene.**
  - **Develop and implement oral health educational programs for health care providers, families, schools, and communities.**

We recommend developing and providing culturally tailored education programs for patients, families, schools, communities, and providers. Education programs for patients, families, schools, and communities need to create awareness about the importance of good hygiene, good food and drink choices, and utilization of check-ups, preventive care, and early treatment. Education programs for providers need to create understanding of Native Hawaiian health concepts and to enhance provider-patient communications. Education programs need to be delivered through various media to reach a wide audience. We recommend establishing policies to allocate adequate funding to develop and sustain a system that delivers culturally tailored oral health education programs systematically through the Native Hawaiian community.

- **Develop a diversified oral health workforce, including rural areas.**
  - **Create and implement workforce development programs and higher education programs to increase the number of Native Hawaiian dental professionals in Hawai‘i.**
  - **Provide funding for workforce development for Native Hawaiians.**
  - **Develop and establish policies at the state and organizational level to support Native Hawaiian dental professionals.**
  - **Foster the development of a collaborative system among families, schools, universities, and workplaces.**

Currently, Native Hawaiians are not proportionately represented in the oral health workforce. We recommend assessing the current dental workforce in the State and developing policies to increase Native Hawaiian representation in the dental workforce. The development of a collaborative committee among secondary education, post-secondary education, licensing agencies, professional associations, and residency programs is recommended to increase the numbers of Native Hawaiian students and professionals. Funding and programs to support the practice of Native Hawaiian dental professionals, especially in Native Hawaiian communities, are strongly recommended.

**Referral/Case Management/Medical-Dental Integration**

We recommend policies to build a collaborative system among families, early-childhood programs, schools, universities, workplaces, senior care programs, medical care providers, and dental health care providers in the Native Hawaiian community. We recommend developing a referral program among organizations and implementing it system-wide, with adequate funding to develop and sustain the system.

- **Invest in prevention.**
  - **Provide low income families with dental supplies (toothbrush, toothpaste, dental floss) through public and private means.**
  - **Develop policies and programs to promote prevention in the community.**
  - **Develop policies and practices that increase preventive care in dental clinics.**

There are multiple ways to prevent tooth decay: delivery of fluoride through fluoride varnish, fluoride gel, fluoride foam, fluoridated toothpaste, and fluoridated water; dental sealants; silver diamine fluoride; brushing and flossing; and avoiding acid-causing food and beverages. We recommend developing policies and systems that promote preventive care at home, in the community, and at the clinic. For example, providing economically challenged families and individuals with dental supplies (toothbrush, toothpaste, and dental floss) is one way to promote preventive care at home. Funding school-based preventive care programs is one way to promote prevention in the community. Providing patient-centered, evidence-based, and culturally adapted dental care is one way to promote prevention in clinics.

- **Increase access to care (decrease oral health care disparities).**
  - **Restore Medicaid adult comprehensive dental benefits including prevention and treatment.**
  - **Develop school health policies that address and improve children’s oral health status.**
  - **Develop sustainable school-based sealant and fluoride mouth rinse programs.**
  - **Develop and implement community-based programs that improve the oral health of**

**keiki, adults, and kūpuna, especially those who are from low-income families.**

- **Provide funding for capital expansion to start up school-based and community-based programs and establish Medicaid policy to make programs sustainable.**
- **Strengthen collaboration among State of Hawai'i Department of Human Services Medicaid program, Native Hawaiian Health Care Systems, Federally Qualified Health Centers, schools, and communities to enact a policy that supports school-based and community-based programs; secure funding for these programs.**

To decrease disparities in care utilization we recommend policies, systems, and programs that increase access to care for all. Policies that promote regular check-ups, preventive care, and early treatment are critical, as avoiding or not being able to utilize dental care at an early stage can lead to progression of tooth decay and gum diseases that require more painful and costly procedures. Painful experiences increase fear and anxiety, and these negative feelings lead patients to avoid regular and timely dental care utilization. Currently, MedQUEST does not offer comprehensive dental care coverage for adults. All, regardless of income or employment status, should have equal rights and opportunities to access care. Further, the current Medicaid policy that excludes comprehensive dental care for adults teaches communities and families that oral health is not an important aspect of overall health. This notion conflicts with the Hawaiian value to achieve health holistically within the 'ohana[7] and community. We strongly recommend restoring adult comprehensive dental services to Medicaid participants, including prevention and treatment.

We also recommend establishing health policies that promote and sustain outreach programs (care provided on portable units and on vans/buses); systems that connect care with keiki,[8] adults, and kūpuna,[9] especially the economically challenged (Title I schools, homeless shelters, etc.); and programs that are affordable, evidence-based, and culturally adapted. Medicaid policies need to increase the number of Medicaid participating providers; support community-based (school-based, WIC-based, etc.) services; and promote regular, preventive, and early treatment dental care utilization. This would include restoration of Medicaid adult dental benefits.

- **Implement culturally adapted programs and practices.**
  - **Foster collaboration between Native Hawaiian health experts and dental professionals to develop educational materials.**
  - **Develop educational programs for dental and medical health care professionals to increase understanding of oral health in the context of Native Hawaiian health concepts and values, and how to adapt practices accordingly.**
  - **Revisit traditional practices and revitalize them to fit contemporary lifestyles.**

We recommend developing policies aligned with and reflective of Native Hawaiian culture. Native Hawaiians are highly interconnected with family and community, value relationships, and view health holistically. As Native Hawaiians appear to have had good oral health during the pre-European contact period, we recommend establishing health policies and systems that support Native Hawaiians in revisiting and revitalizing traditional cultural health practices that can be incorporated into their current lifestyles.

We recommend collaboration among Native Hawaiian dental health care professionals to develop culturally tailored oral health education programs for patients, families, communities, and non-Native Hawaiian providers. We also recommend that Native Hawaiian dental health professionals, as a hui,[10] promote oral health in Native Hawaiian communities, and collaborate with Native Hawaiian physicians and other medical professionals.

The following prayer given by Mary Kawena Pukui was used when 'awa[11] was not obtainable and a pōpolo[12] plant was substituted, called 'awa pōpolo, which could be used to treat a toothache. It was chanted while gathering the plants.

[7] family
[8] children
[9] elders
[10] organization
[11] kava
[12] black nightshade

E ka ʻawa a Kane
I ulu i Kahiki
I aʻa i Kahiki
I kumu i Kahiki
I lala i Kahiki
I lau i Kahiki
I mole i Kahiki

I pua i Kahiki
I kiʻi mai nei au i ko kino
I laʻau no
E Kane e, ho mai i ola

*O ʻawa of Kane,*
*That grew in Kahiki*
*Rooted in Kahiki,*
*Bore rootlets in Kahiki,*
*Grew a stalk in Kahiki*
*Branched in Kahiki,*
*Leafed in Kahiki,*
*Bore leaf buds in Kahiki,*
*Blossomed in Kahiki,*
*I have come to take your body*
*To be used for medicine for [patient's name],*
*O Kane, grant him health.*

(Pukui, n.d.)

- **Systematically improve data collection relevant to Native Hawaiian oral health.**
  - **Establish policies and systems to collect data on Native Hawaiian representation in the dental work force.**
  - **Improve data collection across the lifespan, especially with respect to clinical data and information delineating Native Hawaiians.**
    - **Analyze data to improve oral health programs and to support increased representation of Native Hawaiians in the dental work force.**
    - **Establish policies to ensure open and responsible data sharing among agencies.**

We recommend establishing policies to collect data on oral health outcomes (clinical data) and dental workforce development outcome on a regular basis; develop integrated data collection systems among organizations (for example, a system linking community health centers and schools); and establish survey protocol that ensures that data collected are reliable, comparable, and available across the lifespan. Additionally, we recommend policies to enable responsible, open, convenient, and non-bureaucratic data sharing to analyze and improve program operations. (See Chapter 6: Data Governance.)

## Conclusion

In the past 30 years, Papa Ola Lōkahi has been at the forefront of advocating for Native Hawaiian health. The five Native Hawaiian Health Care Systems have been at the forefront of providing services in the Native Hawaiian community. To improve oral health among Native Hawaiians, systematic changes beyond the Native Hawaiian community are required. Restoration of Medicaid comprehensive dental coverage that includes prevention and treatment is one of the critical systematic changes that need to occur and that will benefit not only Native Hawaiians but all populations statewide. The revitalization of Native Hawaiian holistic approaches to oral health is another important change that will benefit all.

Today, oral health disparities persist among Native Hawaiians and other groups. Without change, many will continue to suffer from oral health diseases and overall health conditions that are associated with poor oral health. Over the next 30 years, we must remain in the forefront to advocate, serve, and collaborate for systematic change that will improve oral health for Native Hawaiians and all.

# References


Ambrose, A. J., Arakawa, R. Y., Greidanus, B. D., Macdonald, P. R., Racsa, C. P., Shibuya, K. T., …Yamada, S. (2012). Geographical maldistribution of Native Hawaiian and other Pacific Islander physicians in Hawai'i. *Hawai'i Journal of Medicine & Public Health: A Journal of Asia Pacific Medicine & Public Health, 71*(4 Suppl 1), 13-20. Retrieved from https://www.ncbi.nlm.nih.gov/

American Dental Association. (2017). *Fluoride in water*. Retrieved from http://www.ada.org/ en/public-programs/advocating-for-the-public/fluoride-and-fluoridation

Arcury, T. A., Preisser, J. S., Gesler, W. M., & Powers, J. M. (2005). Access to transportation and health care utilization in a rural region. *The Journal of Rural Health, 21*(1), 31-8. Retrieved from https://www.ncbi.nlm.nih.gov/

Armour, B. S., Swanson, M., Waldman, H. B., & Perlman, S. P. (2008). A profile of state-level differences in the oral health of people with and without disabilities, in the U.S., in 2004. *Public Health Reports, 123*(1), 67-75. doi: 10.1177/003335490812300110

Beach, M. C., Price, E. G., Gary, T. L., Robinson, K. A., Gozu, A., Palacio, A., …Cooper, L. A. (2005). Cultural competence: A systematic review of health care provider educational interventions. *Medical Care, 43*(4), 356-73. Retrieved from https://www.ncbi.nlm.nih.gov/

Berkman, N. D., Sheridan, S. L., Donahue, K. E., Halpern, D. J., & Crotty, K. (2011). Low health literacy and health outcome: An updated systematic review. *Annals of Internal Medicine, 155*(2), 97-107. doi: 10.7326/0003-4819-155-2-201107190-00005

Binkley, C. J., Johnson, K. W., Abadi, M., Thompson, K., Shamblen, S. R., Young, L., & Zaksek, B. (2014). Improving the oral health of residents with intellectual and developmental disabilities: An oral health strategy and pilot study. *Evaluation and Program Planning, 27*, 54-63. doi: 10.1016/j.evalprogplan.2014.07.003

Branson, B. G. (2014, November). Place-based model of care. *Perspectives on Dental Hygiene* (a supplement to *Dimensions of Dental Hygiene*), *12*(11), 38-39.

Bright Smiles Hawai'i. (2017). *Community initiatives*. Retrieved online on April 10, 218 from: http://brightsmileshawaii.org/community-initiatives/

The California Society of Pediatric Dentistry. (2017). *The consequences of untreated dental disease in children.* California Dental Association. Retrieved from https://www.cda.org/Portals/0/pdfs/untreated_disease.pdf

Center for Medicaid and CHIP Services. (n.d.). Dental care. *Medicaid.gov*. Retrieved from https://www.medicaid.gov/medicaid/benefits/dental/index.html

The Center for Native and Pacific Health Disparities Research. (2017). *Ulu training.* Retrieved from www2.jabsom.hawaii.edu/

Deguchi, M., Mau, M. M., Davis, J., & Niederman, R. (2017). Preventable tooth loss in Hawai'i: The role of socioeconomic status, diabetes, and dental visits. *Preventing Chronic Disease, 14*, 170214. DOI: http://dx.doi.org/10.5888/pcd14.170214

Doescher, M., & Keppel, G. (2015). *Dentist supply, dental care utilization, and oral health among rural and urban U.S. residents.* WWAMI Rural Health Research Center, University of Washington. Retrieved from http://depts.washington.edu/uwrhrc/uploads/RHRC_FR135_Doescher.pdf

Edelstein, B. L. (2002). Disparities in oral health and access to care: Findings of national surveys. *Ambulatory Pediatrics: The Official Journal of the Ambulatory Pediatric Association, 2*(2 Suppl), 141-147. Retrieved from https://www.ncbi.nlm.nih.gov/

Fink, K. S. (2009). *Changes to adult dental benefits effective August 10, 2009.* State of Hawai'i Department of Human Services. Retrieved from http://www.med-quest.us/PDFs/Provider%20Memos/ACSMEMO2009/DENTAL%20M09-03.pdf

The Food Trust (2012). *What Is Policy, Systems and Environmental (PSE) change?* Retrieved online on April 10, 2018 from: http://healthtrust.org/wp-content/uploads/2013/11/2012-12-28-Policy_Systems_and_Environmental_Change.pdf

Gao, S. S., Zhao, I. S., Hiraishi, N., Duangthip, D., Mei, M. L., Lo, E. C. M., & Chu, C. H. (2016). Clinical trials of silver diamine fluoride in arresting caries among children: A systematic review. *JDR Clinical & Translational Research, 1*(3), 201-210.

Ghassemi, A., Vorwerk, L. M., Hooper, W. J., Putt, M. S., & Milleman, K. R. (2008). A four-week clinical study to evaluate and compare the effectiveness of a baking soda dentifrice and an antimicrobial dentifrice in reducing plaque. *The Journal of Clinical Dentistry, 19*(4), 120-126.

Greer, M. H., Tengan, S. L., Hu, K. I., & Takata, J. T. (2003). Early childhood caries among Hawai'i public school children, 1989 vs. 1999. *Pacific Health Dialogue, 10*(1), 17-22. Retrieved from https://www.ncbi.nlm.nih.gov/

Gutmanis, J. (1976). *Kahuna la'au lapa'au.* Honolulu, HI: Island Heritage Books.

Handy, E. C., & Pukui, M. K. (1950). The Polynesian family system in Ka-'u, Hawai'i. *The Journal of the Polynesian Society, 59*(3), 232-240.

Harris, R. V., Pennington, A., & Whitehead, M. (2017). Preventive dental visiting: A critical interpretive synthesis of theory explaining how inequalities arise. *Community Dentistry and Oral Epidemiology, 45(*2), 120-134. doi: 10.1111/cdoe.12268

Hawai'i Dental Association. (2017). *About.* Retrieved from www.hawaiidentalassociation.net/about

Hayes, D. (2018). *Preventable oral health ER visits: Native Hawaiian*. Family Health Services Division, State of Hawai'i Department of Health. Retrieved from http://histategis.maps.arcgis.com/apps/MapSeries/index.html?appid=520acc5b615d4b60b8ea7e409a0a49de

Hilgenkamp, K., & Pescaia, C. (2003). Traditional Hawaiian healing and Western influence. *Californian Journal of Health Promotion, 1*, 34-39.

Huang, D. L., & Park, M. (2015). Socioeconomic and racial/ethnic oral health disparities among US older adults: Oral health quality of life and dentition. *Journal of Public Health Dentistry, 75*(2), 85-92. doi: 10.1111/jphd.12072

Hyde, S., Satariano, W. A., & Weintraub, J. A. (2006). Welfare dental intervention improves employment and quality of life. *Journal of Dental Research, 85*(1), 79-84. doi: 10.1177/154405910608500114

Iheozor-Ejiofor, Z., Worthington, H. V., Walsh, T., O'Malley, L., Clarkson, J. E., Macey, R., …Glenny, A. (2015). Water fluoridation to prevent tooth decay. *The Cochrane Database of Systematic Reviews, 6*, CD010856. doi: 10.1002/14651858

Kearns, C. E., Glantz, S. A., & Schmidt, L. A. (2015). Sugar industry influence on the scientific agenda of the National Institute of Dental Research's 1971 National Caries Program: A historical analysis of internal documents. *PLoS Medicine, 12*(3), e1001798.

Keene, H. J. (1986). Dental caries prevalence in early Polynesians from the Hawaiian Islands. *Journal of Dental Research, 65*(6), 935-938. doi: 10.1177/00220345860540051601

Kumar, S., Kroon, J., & Lalloo, R. (2014). A systematic review of the impact of parental socio-economic status and home environment characteristics on children's oral health related quality of life. *Health and Quality of Life Outcomes, 12*, 41. doi: 10.1186/1477-7525-12-41

Makhija, S. K., Gilbert G. H., Boykin, M. J., Litaker, M. S., Allman, R. M., Baker, P. S., …Ritchie, C. S. (2006). The relationship between sociodemographic factors and oral health-related quality of life in dentate and edentulous community-dwelling older adults. *Journal of the American Geriatrics Society, 54*(11), 1701-1712. doi: 10.1111/j.1532-5415.2006.00923.x

Mau, M. K., Sinclair, K., Saito, E. P., Bauhofer, K. N., & Kaholokula, J. K. (2009). Cardiometabolic health disparities in Native Hawaiians and other Pacific Islanders. *Epidemiologic Reviews, 31*, 113-129. doi: 10.1093/ajerev/mxp004

McDonagh, M. S., Whiting, P. F., Wilson, P. M., Sutton, A. J., Chestnutt, I., Cooper, J., …Kleijnen, J. (2000). Systematic review of water fluoridation. *BMJ, 321*, 855. doi: 10.1136/bmj.321.7265.855

Medicare.gov. (n.d.). Your Medicare coverage. *Medicare.gov*. Retrieved from https://www.medicare.gov/coverage/your-medicare-coverage.html

Morgan, J. P., Minihan, P. M., Stark, P. C., Finkelman, M. D., Yantsides, K. E., Park, A., …Must, A. (2015). The oral health status of 4,732 adults with intellectual and developmental disabilities. *Journal of the American Dental Association, 143*(8), 838-846. Retrieved from https://www.ncbi.nlm.nih.gov/

National Institute of Dental and Craniofacial Research. (2014). Chapter 7: Community and other approaches to promote oral health and prevent oral disease. *National Institute of Dental and Craniofacial Research.* Retrieved from https://www.nidcr.nih.gov/

National Institute of Dental and Craniofacial Research. (2018). *Tooth decay.* Retrieved online April 10, 2018 from: https://www.nidcr.nih.gov/health-info/tooth-decay

Native Hawaiian Center of Excellence. (2015). *Cultural competency development training.* Retrieved from http://www.hawaii.edu/nhcoe/information-dissemination/

Nazir, M. A. (2017). Prevalence of periodontal disease, its association with systemic diseases and prevention. *International Journal of Health Sciences, 11*(2), 72-80. Retrieved from https://www.ncbi.nilm.nih.gov/

Nelson, J. C., Rashid, H., Galvin, V. G., Essien, J. D., & Levine, L. M. (1999). Public/private partners: Key factors in creating a strategic alliance for community health. *American Journal of Preventive Medicine, 16*(3 Suppl), 94-102. Retrieved from https://www.ncbi.nlm.nih.gov/

Peedikayil, F. C., Remy, V., John, S., Chandru, T. P., Sreenivasan, P., & Bijapur, G. A. (2016). Comparison of antibacterial efficacy of coconut oil and chlorhexidine on Streptococcus mutans: An in vivo study. *Journal of International Society of Preventive & Community Dentistry, 6*(5), 447.

The Pew Charitable Trust. (2011). *The state of children's dental health: Making coverage matter.* Retrieved from http://www.pewtrusts.org/~/media/legacy/uploadedfiles/pcs_assets/2011/hawaii_052311_web.pdf

Pobutsky, A. M., Hirokawa, R., & Reyes-Salvail, F. (2003). Estimates of disability among ethnic groups in Hawai'i. *Californian Journal of Health Promotion, 1*[Special issue: Hawaii], 65-82. doi: 10.1.1.174.3878

Pourat, N., & Finocchio, L. (2010). Racial and ethnic disparities in dental care for publicly insured children. *Health Affairs (Project Hope), 29*(7), 1356-1363. doi: 10.1377/hlthaff.2009.0089

Powell, L. M., Wada, R., & Kumanyika, S. K. (2014). Racial/ethnic and income disparities in child and adolescent exposure to food and beverage television ads across the U.S. media markets. *Health & Place, 29*, 124-131.

Preshaw, P. M., Alba, A. L., Herrera, D., Jepsen, S., Konstantinidis, A., Makrilakis, K., & Taylor, R. (2012). Periodontitis and diabetes: A two-way relationship. *Diabetologia, 55*(1), 21-31. doi: 10.1007/s00125-011-2342-y

Pukui, M. K. (n.d.). *Offerings.* Unpublished manuscript in the Gutmanis family private archive.

Pukui, M. K. (1983). *'Ōlelo no'eau: Hawaiian proverbs & poetical sayings.* Honolulu, HI: Bishop Museum Press.

Putt, M. S., Milleman, K. R., Ghassemi, A., Vorwerk, L. M., Hooper, W. J., Soparkar, P. M., …Proskin, H. M. (2008). Enhancement of plaque removal efficacy by tooth brushing with baking soda dentifrices: Results of five clinical studies. *The Journal of Clinical Dentistry, 19*(4), 111-119.

The Queen's Medical Center. (2017). *Native Hawaiian health program.* Retrieved from http://queensmedicalcenter.org/native-hawaiian-health-program

Rural Health Information Hub. (2014). *Oral health in rural communities.* Retrieved from https://www.ruralhealthinfo.org/topics/oral-health

Rural Health Information Hub. (2017). *Mobile dental services model.* Retrieved from https://www.ruralhealthinfo.org/community-health/oral-health/2/mobile-dental-services-model

Saha, S., Arbelaez, J. J., & Cooper, L. A. (2003). Patient-physician relationships and racial disparities in the quality of health care. *American Journal of Public Health, 93*(10), 1713–1719. doi:10.2105/AJPH.93.10.1713

Salomon, D., Heidel, R. E., Kolokythas, A., Miloro, M., & Schlieve, T. (2017). Does restriction of public health care dental benefits affect the volume, severity, or cost of dental-related hospital visits? *Journal of Oral and Maxillofacial Surgery, 75*(3), 467-474. doi: 10.1016/j.joms.2016.10.019

Sheiham, A., Steele, J. G., Marcenes, W., Tsakos, G., Finch, S., & Walls, A. W. (2001). Prevalence of impacts of dental and oral disorders and their effects on eating among older people; a national survey in Great Britain. *Community Dentistry and Oral Epidemiology, 29*(3), 195-203. Retrieved from https://www.ncbi.nlm.nih.gov/

State of Hawai‘i. (2015). *The Hawai‘i Behavioral Factor Surveillance System 2014 results.* Department of Health, Honolulu. Retrieved from http://health.hawaii.gov/brfss/files/2015/08/salvail_ye_fall_prevent2011.pdf

State of Hawai‘i. (2016). *Hawai‘i Smiles 2015.* Retrieved from https://health.hawaii.gov/about/files/2013/06/Hawaii-Smiles-Report.pdf

Sugimoto-Matsuda, J., & Stridiron, A. K. (2017). *Needs and assets assessment of oral health services in Hawai‘i: Results and recommendations.* Honolulu, HI: Hawai‘i Dental Service. Retrieved online April 4, 2018 from https://www.hawaiidentalservice.com/ddpahi/HDS_Full_Report_Needs_And_Assets_Assessment_of_Oral_Health_Services_In_Hawaii.pdf

U.S. Centers for Medicare & Medicaid Services. (2013). *Medicare dental coverage.* Retrieved online April 10, 2018 from https://www.cms.gov/Medicare/Coverage/MedicareDentalCoverage/index.html

Vargas, C. M., Dye, B. A., & Hayes, K. (2003). Oral health care utilization by U.S. rural residents: National Health Interview Survey 1999. *Journal of Public Health Dentistry, 63*(3), 150-157. Retrieved from https://www.ncbi.nlm.nih.gov/

Vargas, C. M., Ronzio, C. R., & Hayes, K. L. (2003). Oral health status of children and adolescents by rural residence, United States. *Journal of Rural Health, 19*(3), 260-268. Retrieved from https://www.ncbi.nlm.nih.gov/

Warren, J. J., Cowen, H. J., Watkins, C. M., & Hand, J. S. (2000). Dental caries prevalence and dental care utilization among the very old. *Journal of the American Dental Association, 131*(11), 1571-1579. Retrieved from https://www.ncbi.nlm.nih.gov/



# Chapter Six:
# *Data Governance*

# Data Governance

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**Executive Summary**

***Increased Understanding***

- Data sovereignty is the right of the nation to govern the collection, ownership, and application of its own data.
- Data governance is a critically important component to improving Native Hawaiian health.
- Adverse societal-level factors complicate the issues regarding quality data and data sovereignty for Native Hawaiians.
- Qualitative data can be an integral part of Native Hawaiian health data.
- Availability and disaggregated use of quantitative data have increased for Native Hawaiian health data.

***Effective and Promising Approaches***

- Large existing health data sets allow for a relatively efficient way to gain information regarding Native Hawaiian health.
- Enhancing quantitative methodologies with more wholistic, qualitative, and mixed-method approaches increases the cultural meaningfulness and utility of Native Hawaiian health data.
- Collaborations and partnerships among Native Hawaiian-serving organizations and researchers increase the yield from Native Hawaiian health data.
- Advocacy on the part of organizations is beginning to change policies, practices, and laws regarding Native Hawaiian data practices.

***Gaps***

- The Office of Management and Budget Directive 15 (OMB 15), adopted in 1997, provides guidance on maintaining, collecting and presenting data on race and ethnicity across federal agencies. Specifically, OMB 15 distinguishes Asian American from Native Hawaiian or Other Pacific Islander, yet non-compliance is high among federal agencies. Many large data sets aggregate the two groups or present the data as one “API” rubric. Aggregated data misrepresents the needs of all groups.
- The Data Governance Task Force lacks resources, capacity, and continuity to sustain meaningful positive impact.
- There remains a lack of culturally meaningful, disaggregated data, both qualitative and quantitative, on Native Hawaiian health.
- There is insufficient organization and coordination of resources to optimize culturally meaningful data conceptualization, collection, storage, security, access, analysis, interpretation, dissemination, and use.
- There is insufficient workforce capacity to optimize the utility of Native Hawaiian health data.

***Recommendations for Impact***

- **Enforce use of OMB Statistical Directive 15 (1997) across all Federal agencies.**
- **Require State of Hawai‘i agencies to similarly separate Asian American and Pacific Islander data. Furthermore, require the State to collect data as to whether client or beneficiary is Native Hawaiian, i.e. “Are you Native Hawaiian? YES or NO.”**
- **Support, sustain, and expand the Native Hawaiian Data Governance Task Force.**
- **Strategically support and foster culturally meaningful, disaggregated data on Native Hawaiian health.**

- **Increase the coordination and governance of, and resources/funding related to, Native Hawaiian health data.**
- **Establish a sufficient workforce to optimize the utility of Native Hawaiian data.**

## Introduction

The Kumulipo:
A Hawaiian Creation Chant
(Queen Liliuokalani, 1978), Ka Wa Umi[1]

O mai la, o Laʻilaʻi ka paia
O Kane a Kapokinikini ka pou,
o Kiʻi ka mahu
Hanau Laʻiʻoloʻolo i noho ia Kapapa
Hanau Kamahaʻina he kane
Hanau Kamamule he kane
O Kamakalua he wahine
O Poʻele-i e-holo, kama
O Poʻele-a a-holo, kama
O Wehi-wela-wehi-loa
Hoʻi hou Laʻilaʻi noho ia Kane
Hanau o Haʻi he wahine
Hanau o Haliʻa he wahine
Hanau Hakea he kane
Hanau ka muki, muka, mukekeke

Mulea, kukuku, kunenewa
Moku, monu, mumule ana
Mumule wale ana Kane i ka mule
I mule, i keʻeo, i ka maua
I ka wahine weweli wale
Peʻe e kane ia e hoʻohanau kama
E hoʻohanau kama i kana keiki
Hoʻole ka lani iaia muli wale

Haʻawi i ka ʻape kapu ia Kiʻi
E Kiʻi no ke moe iaia
Haʻili Kane i ka mua, heleu wale
Haʻili o Kiʻi o Laʻilaʻi i ka muli lae
punia
Pehi i ka pohaku hailuku ia Kane
O kani ka pahu ke wawa nei ka leo
O kaʻu hoʻailona ia, kaka muli
Huhu lili Kane moe muli ia mai la
O ka ewe o kana muli i muli ai
Haku ai kama hanau mua
Imua ia Laʻiiaʻi, imua ia Kiʻi
Ka laua kama hanau lani la
Puka--

*Maila, with Lailai for protection,*
*And Kane of Kapokinikini was support,*
*Kii was helpless.*
*Laioloolo was born and lived at Kapapa.*
*Kamahaina was born a man,*
*Kamamale was born a man,*
*Kamakalua a woman,*
*Poeleieholo a child,*
*Poeleaaholo a child,*
*Then Wehiwelawehi loa.*
*Lailai went back to Kane,*
*Hai was a born a woman,*
*Halia was born a woman,*
*Hakea was born a man,*
*The Muki, Muka, and Mukekeke were born*
*(kisses, smacks, chirruping),*
*Smacks, boils, and other weaknesses,*
*Moku, Monu, mumuleana (strife, broils, and huffiness),*
*The men became speechless from sulkiness,*
*Became cross from envy of ours,*
*Of the woman who is brave and fearless,*
*Then hid and dared not claim kin,*
*To claim kin with her child.*
*The heavens deny the right of kin*
*(being of younger branch),*
*Yield the sacred right to Kii;*
*For to be with Kii, ʻtis his claim.*
*Kane then taunts her eldest for this,*
*Kii retaliates through Lailai for his being the younger branch;*
*He flings a stone and hits Kane;*
*Then is heard the sound of the drum,*
*The sign of life for the younger.*
*Kane, furious with jealous anger, struck her for faithlessness*
*For the younger child of the younger branch.*
*That is why first-born are always hakus (superiors, lords),*
*First through Lailai, next by Kii,*
*Their first-born with sacred birthright*
*Is born.*

[1] Chant Ten

## ❖ Kumulipo

The opening oli,[2] the Kumulipo, our beloved account of the beginning of life for our pae ʻāina[3], life sources, creatures, and kāne[4] and wahine,[5] illustrates that our data sovereignty journey is rooted in the traditions of our ʻike kūpuna[6] through moʻolelo[7] and oli. The retelling of the story of origin for Native Hawaiians is important in moving forward because it insists that any Western thoughts and methodologies around the idea of data governance must be set aside in order to breathe life into the stories that recall the customary Hawaiian ways of knowing and doing.

## ❖ Background

To contextualize the concept of Native Hawaiian data and data collection, one must look to the past to inform the present. Native Hawaiians are the indigenous people who settled the Hawaiian Islands and founded their sovereign nation. Authenticated documentation, archaeological inquiry, oral histories, chants, and genealogies validate this fact (Kamakau, 1961, 1992a, 1992b; Malo, 1951). Further confirmation is provided in more recent history by the Hawaiʻi Legislature, Act 195, which stated that the Native Hawaiian people are the "only indigenous, aboriginal, maoli[8] people of Hawaiʻi" (Native Hawaiian Roll Commission, 2011).

Hawaiian intellectual history is rich. Historical accounts show that through the Hawaiian traditional way of life, Native Hawaiians were scientists and innovators. For example, the ahupuaʻa[9] illustrated the sophisticated social system in which they carried out their everyday lives. Ruling chiefs had the kuleana[10] of creating an infrastructure that employed their makaʻāinana[11] efficiently—streamlining their talents and abilities to develop complex ʻauwai,[12] loko iʻa,[13] and loʻi kalo[14]—ensuring livelihood and food security for their increasing population. The way Native Hawaiians planted their crops and fished their seas was according to natural occurrences such as the phases of the moon and the changing of the tides.

To accommodate for sustainable daily living while trying to plan for rapid expansion, some forms of data collection and processing were utilized. During traditional times, there was no official written language; therefore, information and knowledge were typically passed down through genealogies, oli, or moʻolelo. Native Hawaiians consider their moʻokuauhau[15] as the connective tissue between them as a people, and as the moʻolelo of their people that provide guidance and knowledge.

It was not until the reign of Kamehameha III, also known as Kauikeaouli, that the Kingdom of Hawaiʻi began its careful balancing act of Western modernization through establishing a governance structure in written form, while keeping the nation intact. Hawaiian wisdom was preserved in the Hawaiian language newspapers, which became a pathway to understanding Hawaiian epistemology and ontology. Many other sources, such as geographical surveys, biographies, historical narratives, translations, political and economic analyses, and poetry were catalogued over the years by various scholars. These efforts demonstrated that Native Hawaiians had the forethought to record these pieces of data so that they could transmit their ancestral knowledge to future generations.

## ❖ Data Sovereignty

As a collective from various health professions, the Data Governance Task Force (DGTF) desires to achieve data sovereignty, by which we, as health professionals, providers, and patients, might regain control over the data methodologies for Native Hawaiian health practices and regain sovereignty over the stages of data collection to dissemination of the data and the results. How do we honor our traditions of past data practices to understand the richness of our ʻike kūpuna?[16] Moreover, how do we use these guiding principles of our moʻolelo,[17] like the Kumulipo, to inform our practice and transform data sovereignty into a functional practice we use today? The DGTF states that data sovereignty is an openly defined process to regain control of our indigenous story and acknowledge the significance of indigenous perspectives on research and data governance.

[2] oral communication
[3] archipelago
[4] men
[5] women
[6] traditional, elder knowledge
[7] story
[8] native, indigenous, aborigine
[9] land division(s)
[10] responsibility
[11] commoners
[12] irrigation
[13] fishponds
[14] taro terraces
[15] genealogy
[16] traditional, elder knowledge
[17] stories

Pūpūkahi i holomua

*Unite in order to progress*

ʻŌlelo Noʻeau #2758
(Pukui, 1983, p. 302)

*"[Community outreach] starts the conversation, but you need to have facts in order to get the information and plan your programs appropriately. We want to get the data so that we know that anything that we recommend is based in truth and reality, but that's not the only benefit; that's not the only goal of the project. When we go out into the community, what we're actually trying to do is stimulate conversation and activity and investment and teamwork among the people that are in each local community. What this does is not only helps facilitate future projects that are designed on a state-wide level, but it also facilitates projects that are designed and implemented locally by the people who have come together as part of this small team. So it's about building relationships, and the relationships are as important a goal and are going to be as important in any effort to improve health as [are] the hard data. One does not come at the expense of the other. They actually go hand in hand. The data and the relationships together are going to lead to a solution that improves public health."*

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**Increased Understanding**

- **Data governance is a critically important component to improving Native Hawaiian health.**

The 1985 *E Ola Mau: The Native Hawaiian Health Needs Study* (Native Hawaiian Health Research Consortium, 1985) reported on the quantitative results that existed at that time. Despite the importance of the findings reported in 1985, there remained a lack of data in many key areas. Without meaningful, valid, and timely information regarding Native Hawaiian health, we will not know how Native Hawaiians are progressing, and subsequently what needs to be done to improve Native Hawaiian health. Therefore, we have added the Data Governance Task Force (DGTF) to this *E Ola Mau a Mau* update not only to address Hawaiian data quality and scope, but also to speak to the issue of data sovereignty. In addition, the inclusion of the DGTF will begin to address the needs of the other *E Ola Mau a Mau* task forces around the disparity of Native Hawaiian data, and the analytic results that will be used to inform practice, research, and priorities for funding.

- **Adverse societal-level factors complicate the issues regarding quality data and data sovereignty for Native Hawaiians.**

Macro-level influences upon indigenous health have been identified. These include social determinants of health, colonialism, and historical trauma.

- Social determinants of health are the complex and interconnected structures, circumstances, environments, institutions, and systems that contribute to or harm the health of individuals and communities. Social determinants of health are shaped by cultural, political, environmental, social, and economic conditions. (Office of Hawaiian Affairs, 2015, p. 3).
- The structural and systemic contexts render colonialism a distal determinant of health. Distal determinants are generally beyond the individual or community's control and are the *causes of causes* of unjust life situations for certain groups or people over others. Exploring colonialism as a distal determinant of health is linked to examining how current ideologies and historic events influence the health of contemporary Indigenous peoples (Czyzewski, 2011, p. 4).

Historical trauma, a concept introduced by Maria Yellow Horse Braveheart, PhD, is the cumulative emotional and psychological wounding across generations, including the lifespan, which emanates from massive group trauma (Brave Heart, 2003).

Within the context of data sovereignty, these societal-level factors not only adversely impact the health of Native Hawaiians, but also influence data quality and governance. Native Hawaiians' rich epistemological history of knowledge has been largely suppressed and marginalized over the years. The result has been that Native Hawaiians, for generations and generations, have believed that their ways of knowing and living were not an adequate basis for reasoning and understanding by Western standards. Native Hawaiians currently ask, "Can our Native Hawaiian data be truly trusted?" There are historic barriers to Native Hawaiian use of Western mainstream health care services due to socioeconomic disadvantage, discrimination, cultural misunderstanding, and mistrust, making it challenging to capture accurate, timely, and longitudinal data. Further, has a lack of data resulted in lack of services,

and/or have inaccurate data resulted in inappropriate interventions offered to Native Hawaiian communities?

- **Qualitative data can be an integral part of Native Hawaiian health data.**

In addition to the previously identified sources of qualitative data (e.g., ancestry, genealogy, chants, Hawaiian newspapers, geographic surveys, biographies, historical narratives, poetry), Hawaiian values, beliefs, and healing practices have been increasingly incorporated throughout the development of practitioners and staff, in direct service provision, and in the evaluation and research process. This more integrative approach has increased confidence and reliance on cultural ways of data gathering to tell the story of our communities and has been a better reflection of the Native Hawaiian families and individuals whom we serve. Qualitative data from Native Hawaiian communities complement quantitative data and serve as a foundation for potential solutions to barriers to equitable health care.

- **Availability and disaggregated use of quantitative data have increased for Native Hawaiian health data.**

Along with the increased emphasis on quantitative data to inform health practices, there has been an increase in the collection, availability, use, and disaggregation of Native Hawaiian health data. Historically, even when available, data from Native Hawaiians and Pacific Peoples were aggregated together with data from Asian Americans in most health surveys and demographic data. The results from the analyses of these data obscured significant health disparities, with potential adverse impact on access to health care and other resources for Native Hawaiians.

Hoʻomoe wai kahi ke kaoʻo.

*Let's all travel together like*
*water flowing in one direction.*

ʻŌlelo Noʻeau #1102
(Pukui, 1983 p. 118)

**Effective and Promising Approaches**

- **Large existing health data sets allow for a relatively efficient way to gain information regarding Native Hawaiian health.**

There are numerous examples of large existing data sets being utilized to gain knowledge regarding Native Hawaiian health. Although in some cases there may be a fee involved in the use of the data, the overall cost is low when considering that it bypasses the need to conceptualize the survey, gain access to the sample, collect the data, and clean up the data. These data sets include the following (see http://hhdw.org/health-reports-data/data-source/):

- Vital Statistics
- Behavioral Risk Factor Surveillance System (BRFSS)
- Hawaiʻi Health Survey (HHS)
- Pregnancy Risk Assessment Monitoring System (PRAMS)
- Youth Risk Behavior Survey (YRBS)
- Hawaiʻi Youth Tobacco Survey (YTS)
- Hawaiʻi Health Information Corporation (HHIC) (emergency room & inpatient; https://hhic.org/)

- **Enhancing quantitative methodologies with more wholistic, qualitative, and mixed-method approaches increases the cultural meaningfulness and utility of Native Hawaiian health data.**

Native Hawaiian-serving organizations that utilize non-quantitative approaches to enhance quantitative methodologies obtain more culturally meaningful results and information on Native Hawaiian health, and thereby advance cultural wellness and wholistic health.

As just one example, the mission of the Center for Culturally Responsive Evaluation and Assessment – Hawaiʻi (CREA-Hawaiʻi) is to use a Native Hawaiian lens to offer empowering, values-based evaluation approaches that support insights and conclusions which promote equity and justice in the diversity that is Hawaiʻi. To do this, we will weave together and share cultural knowledge, tools, and practices that are grounded in and affirm a Native Hawaiian worldview. Our first work product will be a Native Hawaiian evaluation framework that can be used by evaluators, program managers, communities, and funders to guide evaluation practice from their various positions. The framework will lay the foundation for the next steps of training and advocacy. (http://creablog.weebly.com/blog/introducing-crea-hawaii)

- **Collaborations and partnerships among Native Hawaiian-serving organizations and researchers increase the yield from Native Hawaiian health data.**

Native Hawaiian health-serving organizations have created a network of strong partnerships with one another and with researchers, thus tearing down walls and silos. These partnerships improve the quality of data collected, analyzed, and reported.

- **Advocacy on the part of organizations is beginning to change policies, practices, and laws regarding Native Hawaiian data practices.**

Service providers, community leaders, community members, and researchers are taking action to submit testimony and advocate for efficient ways to report qualitative and wholistic indicators of health.

Kau i Kāpua ka poʻe polohuku ʻole.

*Those without resources will land at Kāpua.*

Without resources one gets nowhere.

ʻŌlelo Noʻeau #1608
(Pukui, 1983 p. 173)

**Gaps**

- **The Data Governance Task Force (DGTF) lacks resources, capacity, and continuity to sustain meaningful positive impact.**

Despite greater recognition of the importance of quality data and data governance to improve Native Hawaiian health, the DGTF was only recently formed as a key component of *E Ola Mau a Mau*.

- **There remains a lack of culturally meaningful, disaggregated data, both qualitative and quantitative, on Native Hawaiian health.**

Despite the progress that has been made in conceptualizing, collecting, accessing, disaggregating, analyzing, and disseminating Native Hawaiian health data and results, there remains a substantial gap in culturally meaningful Native Hawaiian health data for epidemiology purposes and evaluation of services. In particular, colonized data methods are neither current nor comprehensive in telling an indigenous story of Native Hawaiian well-being and health status. For example, quantitative methods tend to emphasize more easily measurable constructs.

- **There is insufficient organization and coordination of resources to optimize culturally meaningful data conceptualization, collection, storage, security, access, analysis, interpretation, dissemination, and use.**

There remain gaps in the organization and coordination of data-related tools, community engagement, partnerships, and a common repository of culturally meaningful data. Within the context of data sovereignty, there does not exist an entity or partnership that fosters and leads the processes of data-linking, repository, and sharing across disciplines. Technology is being under-utilized to streamline data collection, storage, and sharing. There may be an undercurrent of concern that resources devoted to data and research will detract from direct services and other opportunities for Native Hawaiian communities.

- **There is insufficient workforce capacity to optimize the utility of Native Hawaiian health data.**

There are not enough experts working in the area of Native Hawaiian health data and research to optimize Native Hawaiian health (e.g., mixed-method researchers, technology specialists).

E ala! E alu! E kuilima!

*Up! Together! Join hands!*

A call to come together and tackle a given task.

ʻŌlelo Noʻeau #258
(Pukui, 1983 p. 32)

**Recommendations for Impact**

The methodological and conceptual indigenous framework that will increase data availability, accountability, and governance will take a wholistic-health and cultural-wellness approach, providing reports for the Native Hawaiian population. As exemplified by the Kumulipo, order and methods to account for the creation and well-being of our communities have been a traditional part of our history. Therefore, data governance and research methodologies should be developed to ensure that research with indigenous peoples can be more respectful, ethical, and useful.

The approaches to extend this governance and address each gap will include the following recommendations:

- **Support, sustain, and expand the Native Hawaiian Data Governance Task Force (DGTF).**

- The DGTF should be continued beyond *E Ola Mau a Mau*. The mission of the DGTF would be to help fulfill the Native Hawaiian health data needs, including the culturally meaningful conceptualization, collection, storage, security, analysis, dissemination, sharing, and use of Native Hawaiian health data. The mission may include addressing the remaining recommendations of this *E Ola Mau a Mau.*
- The DGTF could be the lead entity to coalesce a network of dedicated individuals and groups to foster a wholistic health and cultural wellness approach within an indigenous methodological framework. Members would include individuals from Hawaiian communities and Hawaiian community organizations, and other experts in Native Hawaiian health data.

- **Strategically support and foster culturally meaningful, disaggregated data on Native Hawaiian health.**

  - A comprehensive community needs assessment should be carried out to examine current and future needs of Native Hawaiian health data (e.g., community-defined meaningful health outcomes). The results would drive the culturally meaningful use of available data and the pursuit of future data.
  - Depending on the purpose of particular Native Hawaiian health data, mixed-method approaches that consider both qualitative and quantitative data should be utilized to ensure cultural meaningfulness. The latter would include health data coded in such a way as to allow for analysis of health disparities among different ethnic groups in Hawai‘i.

- **Increase the coordination, governance, and resources/funding related to Native Hawaiian health data.**

  - Coalesce a group of dedicated individuals who will provide coordination and governance of Native Hawaiian health data.
    - If deemed appropriate, this group could be the Native Hawaiian Data Governance Task Force (DGTF). Define each position and its specific responsibilities.

- Determine the model of indigenous data governance that will be utilized.

  - Bruhn (2014) identified three data governance models used for indigenous research: “In concluding this review, we might place the three major models—along with the steps between them—on a spectrum. At the one end is the single hierarchical organization, governing its data with a close focus on its own institutional needs. At the other is the theoretically limitless data commons, which promotes accessibility of data in a given community, subject to limited constraints. In the middle is the data partnership, where governance by a single organization gives way to genuine co-governance—shared decision-making—of the data asset” (p. 7).
    - As with our traditional ownership of data, it may be possible to begin with indigenous peoples’ stories to understand which model would fit the needs of Native Hawaiians. The Hawaiian concept of the piko[18] connecting Native Hawaiians to past and future generations could serve as a model for an inter-agency data system that links health data across communities, practitioners, and researchers.

- Develop and implement guidelines regarding data governance and sovereignty.

  - Allow for flexibility and modifications given the unique circumstances of each community or project, and the continually changing methodology and environment of data governance and sovereignty.
  - Given the principles of data governance and sovereignty, a variety of issues must be treated with sensitivity: (1) culturally meaningful data; (2) community-based participatory research (CBPR); (3) methods of consent and data collection; (4) linked data sets; (5) storage, security, accessibility, and sharing; (6) individual and community confidentiality; (7) autonomy and ownership; (8) responsible analysis, interpretation, and dissemination; and (9) regulations (e.g.,

[18] navel

review boards weighing risks and benefits, Health Insurance Portability and Accountability Act [HIPAA]).

- ❖ Where beneficial, offer tools and training opportunities to data users on topics ranging from culturally meaningful data to the interpretation and dissemination of results.
- ❖ Given the important role of technology with respect to health data, ensure the efficient use of technology throughout the process (e.g., data collection, storage, security, access).
- ❖ Foster and engage in trusting interdisciplinary collaborations and partnerships that will support Native Hawaiian data governance, sovereignty, and resources/funding.

    - ❖ One essential benefit of data governance and sovereignty is to encourage the rebuilding of Indigenous nations and communities and recovery of our own stories of the past and present. A unified understanding of the barriers to data governance generates a comprehensive gathering of researchers to engage in partnerships. These partnerships may work on a community level to identify empirical ways to collect data, to understand data and research needs of the community members, and to serve as a caveat in utilizing and changing larger systems. Partnerships should be of mutual benefit to the producer and user of the data. A major factor that has been absent in colonized research of Native Hawaiian communities is hilina‘i.[19] In the various roles and positions within the partnership, there should be confidence in the method and ability of each partner to act in a way that fits with Hawaiian values and with the community, first and foremost.

- ❖ Advocate for policies and legislation that foster Native Hawaiian data governance, sovereignty, and resources/funding.

- ❖ **Establish a sufficient workforce to optimize the utility of Native Hawaiian data.**

    - ❖ Through outreach, training, and sustainable efforts, increase the diverse workforce capacity that will be needed to optimize the use of Native Hawaiian data. Experts will be needed in the pursuit of culturally meaningful health outcomes, indigenous methodologies of assessment and evaluation (e.g., qualitative and mixed methods), indigenous research ethics (e.g., regarding community harm, human biological specimens, etc.), culturally sound dissemination guidelines (e.g., regarding authorship, community autonomy, etc.), and so on.

‘A‘ohe hana nui i ke alu ‘ia.

*No task is too big when done together by all.*

‘Ōlelo No‘eau #142
(Pukui, 1983 p. 18)

## Conclusion

Culturally meaningful, high-quality data are at the heart of improving Native Hawaiian health. If we do not meaningfully define, collect, analyze, interpret, and use the results of these data, we cannot evaluate the status or trajectory of Native Hawaiian health. Despite the rich Hawaiian history of qualitative data, there remains a fundamental need for Native Hawaiian health data governance and sovereignty. Since the 1985 *E Ola Mau*, there has been increased understanding of the importance of Native Hawaiian data governance, adverse societal factors, the integral role of qualitative data, and the importance of disaggregating Native Hawaiian data. Effective and promising approaches to date have included the use of existing large data sets, the use of mixed-methods approaches, collaborations among Native Hawaiian-serving organizations, and advocacy that has begun to change data practices and policies. However, remaining gaps include (1) inadequate support for the Data Governance Task Force (DGTF); (2) a lack of culturally meaningful, disaggregated data; (3) a lack of organized, coordinated efforts; and (4) an insufficient data-related workforce. To address these gaps and attain meaningful impact, we recommend the following: (1) support and expand the DGTF; (2) foster more culturally meaningful, disaggregated Native Hawaiian health data; (3) organize a group that will enhance governance and sovereignty of Native Hawaiian health data; and (4) establish a sufficient workforce.

[19] trust, confidence

## References


Brave Heart, M. Y. (2003). The historical trauma response among natives and its relationship with substance abuse: A Lakota illustration. *Journal of Psychoactive Drugs, 35*(1), 7-13. doi:10.1080/02791072.2003.10399988

Bruhn, J. (2014). Identifying useful approaches to the governance of indigenous data. *The International Indigenous Policy Journal, 5*(2), 1-32. doi:10.18584/iipj.2014.5.2.5

Czyzewski, K. (2011). Colonialism as a broader social determinant of health. *The International Indigenous Policy Journal, 2*(1), 1-14. doi:10.18584/iipj.2011.2.1.5

Kamakau, S. M. (1961). *Ruling chiefs of Hawai‘i*. Honolulu, HI: Kamehameha Schools Press.

Kamakau, S. M. (1992a). *Ka Po‘e Kahiko: The people of old*. Honolulu, HI: Bernice Pauahi Bishop Museum Press.

Kamakau, S. M. (1992b). *Na Hana a ka Po’e Kahiko: The works of the people of old*. Honolulu, HI: Bernice Pauahi Bishop Museum Press.

Malo, D. (1951; Dr. Nathaniel B. Emerson trans., 1898). *Hawaiian antiquities.* Honolulu, HI: Bernice Pauahi Bishop Museum Press.

Native Hawaiian Health Research Consortium. (1985). *E Ola Mau: The Native Hawaiian health needs study.* Honolulu, HI: ALU LIKE, Inc.

Native Hawaiian Roll Commission. (2011, July 6). *Kana‘iolowalu Act 195* (codified at Hawai‘i Revised Statutes, Chap. 10H). Retrieved from: http://www.kanaiolowalu.org/about/act195/

Office of Hawaiian Affairs. (2015). *Native Hawaiian health fact sheet 2015.* Honolulu, HI: Office of Hawaiian Affairs.

Queen Liliuokalani. (1978). *The Kumulipo: An Hawaiian creation myth*. Kentfield, CA: Pueo Press.



# Chapter Seven:
# *Workforce Development*

# Workforce Development

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**Executive Summary**

***Increased Understanding***

- There has been an increase in empirically based knowledge on workforce shortages, resulting in better data-driven decisions regarding a workforce for Native Hawaiian health.
- There has been greater acceptance of the broadening of the concept of the health care workforce for Native Hawaiians.
- Many socio-ecological factors impact the health care workforce in Hawai‘i.
- Interventions that improve career quality and economic security can enhance the health care workforce in Hawai‘i.

***Effective and Promising Approaches***

- Many different types of programs and organizations, including those with an emphasis on Native Hawaiian culture and identity, have helped to increase the Native Hawaiian health care workforce.
- Interventions that consider community and individual quality of life and economic realities will more likely increase workforce development for Native Hawaiian health.
- Community-academic collaborations increase the potential to improve workforce development for Native Hawaiian health.
- Student support programs are vital to increasing college graduation rates for Native Hawaiian students. Scholarship, STEM and pipeline programs abound and are increasing.

***Gaps***

- The workforce is insufficient to address Native Hawaiian health care needs.
- There is an insufficient tracking system for systematically collecting health care workforce data specific to Native Hawaiians.
- There is a lack of education and training programs and interventions to increase the workforce for Native Hawaiian health.
- There is a lack of culturally relevant efforts to increase the workforce for Native Hawaiian health.
- Current procedures, regulations, and policies do not fully support the workforce for Native Hawaiian health.
- There is concern over quality-of-life issues, especially in light of inadequate resources, to support the necessary workforce for Native Hawaiian health.
- An overall strategy and an organization to advocate for and advance the necessary workforce for Native Hawaiian health remain lacking.

***Recommendations for Impact***

- **Broaden and maintain a thriving workforce to address Native Hawaiian health care needs.**
- **Develop and maintain a comprehensive, centralized data-collection and tracking system of health care workforce data specific to Native Hawaiians.**
- **Support existing, effective education and training programs and develop and sustain new ones that will create a thriving workforce for Native Hawaiian health.**
- **Increase the quality and quantity of culturally relevant efforts to expand and improve the workforce for Native Hawaiian health.**
- **Advocate for existing and new procedures, regulations, and policies that support a thriving workforce for Native Hawaiian health.**

- **Improve the quality of life, financial security, and resources necessary for a thriving workforce for Native Hawaiian health.**
- **Assemble a group of dedicated stakeholders who will develop and implement an overall strategic plan to fulfill the recommendations of the Workforce Development Task Force, and subsequently modify the strategic plan as needed with the goal of a thriving workforce for Native Hawaiian health.**

## Introduction

ʻAʻohe ʻulu e loaʻa i ka pōkole o ka lou.

*No breadfruit can be reached when the picking stick is too short.*

There is no success without preparation.

ʻŌlelo Noʻeau #213
(Pukui, 1983, p. 25)

### E Ola Mau Revisited

The original *E Ola Mau* (1985) stated, "For effective community health, it is essential to have health care services delivered by members of that community. Native Hawaiians are under-represented in the health care professions. Development of Native Hawaiian health professionals and workers at all levels is an essential factor in improving the health status of Native Hawaiians" (p. 42). This continues to be true. Table 1 lists recommendations that remain applicable today.

Table 1
E Ola Mau (1985) *Workforce Recommendations Yet to Be Fulfilled*

| Number | Description |
|---|---|
| 1.2 | That there be a systematic and continuous collection, tabulation and analysis of critical health data by Native Hawaiians. |
| 1.4 | That there be culturally-based health education programs developed and maintained by Native Hawaiians and targeted to Native Hawaiian families and communities. |
| 1.5 | That there be encouragement for learned Native Hawaiians to teach and instruct other Native Hawaiians in health-related areas. |
| 1.6 | That there be cultural awareness training for Native Hawaiian and non-Native Hawaiian health professionals. |
| 1.8 | That there be developed an integrated approach to health programs in the Native Hawaiian community…in conjunction with concerns relating to…self-determination, economic self-sufficiency, …[and] education. |
| 2.3 | That educational training programs to facilitate the entrance of Native Hawaiians into mental health professions…be developed. |
| 2.4 | That…health professionals rendering services to Native Hawaiians be certified in cultural knowledge, history and lifestyle. |
| 2.5 | That third-party payments for treatment services based on traditional Hawaiian orientation and practice be legitimized. |
| 3.4 | That Native Hawaiian parity in the health professions be targeted through scholarship programs and academic monitoring and support. |
| 3.5 | That a system of Native Hawaiian Community Health Workers be developed. |
| 3.12 | That cooperation be fostered between traditional Hawaiian healers and physicians. |
| 3.19 | That health care organizations serving Native Hawaiian communities develop programs which integrate Western and traditional Hawaiian approaches to health care. |

| Number | Description |
|---|---|
| 3.28 | That utilization data be systematically collected by all health programs and organizations in order to be able to determine the extent to which Native Hawaiians are receiving health services. |

❖ **E Ola Mau a Mau**

Since *E Ola Mau* (1985) was released, there has been increased pressure on the health care industry to expand workforce recruitment, education, training and availability. An expanded workforce is required to meet the persistent health care needs of Native Hawaiians and the underrepresentation of Native Hawaiians among health care practitioners and professionals.

The topic of workforce development was embedded within each task force report in *E Ola Mau* (1985). Due to the evolution and urgency of the issues affecting workforce development today, *E Ola Mau a Mau* includes a separate chapter on workforce development. The goal of the Workforce Development Task Force is to support creating a Native Hawaiian health care system that is based on culture, kanaka maoli ola,[1] integrated, and self-sustaining. Health and well-being are founded on an ability to care for one's family, to have access to educational opportunities, and to be gainfully employed. As such, the goal is not only to increase the number of Native Hawaiian health and allied health professionals, but also to view education, gainful employment, and the ability to care for one's family as core components of Native Hawaiian health and kanaka maoli ola.

**Increased Understanding**

ʻAʻohe pau ka ʻike i ka hālau hoʻokahi.

*All knowledge is not taught in just one school. One can learn from many sources.*

ʻŌlelo Noʻeau #203
(Pukui, 1983, p. 24)

❖ **There has been an increase in empirically based knowledge on workforce shortages, resulting in better data-driven decisions regarding a workforce for Native Hawaiian health.**

Improvements have been noted in some systematic data collection and analysis of workforce issues (e.g., employment rates, number of job openings, average salaries) that impact Native Hawaiian health. For example, a review of the Health Resources and Services Administration (HRSA) Data Warehouse demonstrated that the majority of facilities across Hawaiʻi have shortages of primary, dental, and behavioral health professionals (HRSA, 2018). The Appendix presents information that is currently available regarding labor-force and related employment, labor market, training data, including the sources of this information, and the limitations and advantages of these sources.

❖ **There has been greater acceptance of the broadening of the concept of health care workforce for Native Hawaiians.**

*E Ola Mau* (1985) intended to more fully address the workforce demanded by the health care needs of Native Hawaiians by providing a more comprehensive, long-term vision of workforce development that focused on recruitment, educational opportunities, retention, economic realities, and long-term sustainability. In addition to the more traditional Western concept of health care workforce (e.g., nurses, physicians), there has been increased recognition and access to more culturally traditional approaches (e.g., kūpuna[2]-based laʻau lapaʻau,[3] lomilomi,[4] hoʻoponopono[5]). There has also been a broadening of recognized stakeholders (e.g., family members, community members, high school students, college students, post-bachelor graduates) who can contribute to the health care workforce to improve Native Hawaiian health.

❖ **Many socio-ecological factors impact the health care workforce in Hawaiʻi.**

These factors include: (1) complementary disciplines, including physicians, nurses, social workers, psychologists and other allied health professionals (e.g., community health workers, navigators, health administrators,

[1] Native Hawaiian "breath of life" or "power of healing"
[2] elder
[3] traditional Native Hawaiian medicine, utilizing natural remedies
[4] traditional Native Hawaiian massage
[5] Native Hawaiian practice of forgiveness and reconciliation

nutritionists/dietitians, nurse aides, medical assistants, laboratory technicians, dental hygienists, sonographers, medical technologists, physical therapists, radiographers, etc.), and other non-clinical health-related fields (e.g., electronic medical records [EMR], coding, cybersecurity); (2) development and nurturance of early interest (e.g., kindergarten-12th grade); (3) recruitment and retention (e.g., compensation, other opportunities); (4) education and training; (5) preference for different contractual models (e.g., private practice, salaried, locum tenens); (6) career development; (7) mentorship; (8) succession planning; and (9) balance between personal and professional life.

- **Interventions that improve career quality and economic security can enhance the health care workforce in Hawai‘i.**

Interventions can include quality of life (e.g., rewarding career, balance of career and personal life) and financial incentives (e.g., competitive income, stipend for practicing in under-served areas, loan repayment, pension, other employment benefits).

### Effective and Promising Approaches

- **Many different types of programs and organizations, including those with an emphasis on Native Hawaiian culture and identity, have helped to increase the Native Hawaiian health care workforce.**

Over the past decades, there has been a clear emerging sense of self among Native Hawaiians. This sense of self has been an essential guide that has been needed to evolve the Native Hawaiian health care system in a direction that ensures cultural relevance, improves health outcomes for Native Hawaiians, and is sustainable. Culturally- based competence of the workforce is essential to improving the health and well-being of Native Hawaiians.

The following are just some of the current endeavors that have been successful in increasing the Native Hawaiian health workforce across the spectrum (e.g., scholarship, education, training, job placement, higher learning institution, community-based program):

- Traditional healing-practice opportunities – for example, la‘au lapa‘au,[6] lomilomi,[7] and ho‘oponopono[8] – have been created.
- The Native Hawaiian Health Scholarship Program at Papa Ola Lōkahi promotes Native Hawaiians in varying health care professions.
- The Native Hawaiian Scholarship Program at The Queen’s Medical Center has provided more than 160 scholarships for students in health care professions since 2007.
- The University of Hawai‘i has taken a system-wide approach to increasing the number of Native Hawaiian health care professionals.
- The Imi Ho‘ola Post-Baccalaureate Program at the Center on Native Hawaiian Excellence, Department of Native Hawaiian Health, John A. Burns School of Medicine, University of Hawai‘i at Mānoa, accepts 12 diverse students per year; graduates of the program enter into the John A. Burns School of Medicine (DeCambra & Lee, 2011; Judd, Sakamoto, Hishinuma, DeCambra, & Malate, 2007).
- Chaminade University – A designated Native Hawaiian-serving institution.
- Ho‘oulu STEM Scholarship, Chaminade University – Scholarship program for science, technology, engineering, and math (STEM) for Native Hawaiian practitioners and scientists.
- School of Osteopathic Medicine, A. T. Stills University – Based at the Waianae Coast Comprehensive Health Center.
- Wai‘anae Health Academy and the Youth Health Corp – Existing indigenous educational models of health care education and workforce development.
- Kama‘aina Come Home Program – Connects Maui residents who attend schools on the continental U.S. to job opportunities on their home island.
- I Ola Lāhui – Training and job placement model for behavioral health in rural Hawai‘i.
- Kula no na Po‘e Hawai‘i (Papakōlea) and Roosevelt High School – Partnership between a public high school and Native Hawaiian homestead community to provide greater exposure of the health professions to Native Hawaiian adolescents through:
  (1) College and Career Fair
  (2) Kulia Health Professions Program (with the long-term goal of promoting professional health care careers)

[6] traditional Native Hawaiian medicine, utilizing natural remedies

[7] traditional Native Hawaiian massage

[8] Native Hawaiian practice of forgiveness and reconciliation

*I'm a very strong believer in education. I believe that education opens up doors, opens up opportunities, and I've seen that happen within families. Our Imi Hoʻola provides opportunities for students who come from disadvantaged backgrounds…It has offered so many opportunities. Many of [our graduates] are leaders in the community.*

Nanette Judd, PhD
Former Director, Imi Hoʻola
University of Hawaiʻi
John A. Burns School of Medicine

There are also other indigenous models of workforce development:

- Māori Health Workforce Development Plan (Ministry of Health, 2005) – Indigenous workforce development initiative which aims to (1) provide practitioners and health workers who can effectively meet the needs of current and future Māori generations; (2) establish training and career pathways for traditional healers as well as community health workers; and (3) promote Māori models of training and education.
- South Australian Aboriginal and Torres Strait Islander Workforce Development (Australian Indigenous HealthInfoNet, 2018; South Australian Aboriginal Health Partnership, 2010) – Collaboration among Indigenous communities who (1) assert their right to control their health and well-being, and thus the services available to their region; (2) acknowledge physical, spiritual, behavioral, cultural, emotional, and social facets of wellness; (3) recognize social and environmental determinants of health; (4) enable indigenous health workers to work in public sector positions; and (5) establish competencies and qualifications (i.e., national education and training certifications and degrees specifically for indigenous health issues).

- **Interventions that consider community and individual quality of life and economic realities will more likely increase workforce development for Native Hawaiian health.**

Education and training interventions, such as the Native Hawaiian Health Scholarship Program and the Hoʻoulu STEM Scholarship Program, recognize the need to financially support the future pipeline of Native Hawaiian health professionals. The Imi Hoʻola Post-Baccalaureate Program (DeCambra & Lee, 2011; Judd et al., 2007) also provides a stipend so that each student can focus all of his or her efforts on successful completion of the program and matriculation into the John A. Burns School of Medicine. There are also economic realities in recruitment and retention of the health care workforce (e.g., the need for financial incentives to provide health care in underserved areas).

- **Community-academic collaborations increase the potential to improve workforce development for Native Hawaiian health.**

The health care workforce has increased to the benefit of Native Hawaiian health through partnerships between community organizations (e.g., The Queen's Medical Center, Kamehameha Schools, the Office of Hawaiian Affairs) and institutions that recruit, educate, and train health professionals (e.g., University of Hawaiʻi, Chaminade University). Partnerships among health care organizations can also increase the quantity and quality of services for Native Hawaiians by more efficiently and effectively utilizing the workforce (e.g., through Papa Ola Lōkahi).

- **Student support programs are vital to increasing college graduation rates for Native Hawaiian students.**

The past year has shown record-setting Native Hawaiian, Filipino, and overall 4-year graduation rates for first-time freshmen at UH Manoa ("Record-setting Native Hawaiian," 2018). University programs designed to serve Native Hawaiian students have contributed significantly to this improved graduation rate.

**Gaps**

- **The workforce is insufficient to address Native Hawaiian health care needs.**

The health care workforce is insufficient not only for Native Hawaiians, but for Hawaiʻi overall, especially in federally designated underserved areas including all neighbor islands and part of Oʻahu (Healthcare Association of Hawaiʻi, 2013). Table 2 presents Hawaii's most difficult occupations to fill by county based on the *Hawaii's Healthcare Workforce 20/20 Plan and Report* (Workforce Development Council, 2011).

Table 2
*Hawaii's Most Difficult Occupations to Fill by County*

| County | Occupations |
|---|---|
| Honolulu | Primary Care Physicians, Registered Nurses (especially Critical Care), Health Information Technology Experts, Physician Assistants, Cardiovascular Technicians, Nurse Aides, Health Educators, Physical Therapists |
| Hawai‘i | Physicians, Medical Assistants, Certified Nurse Aides, Coders, Health Information Technology Experts (entry level, scanning medical records into electronic health records), Echo Techs, Speech Pathologists |
| Maui | Speech-Language Pathologists, Registered Nurses, Primary Care Physicians, Pharmacists, Occupational Therapists, Mental Health Counselors, Dietitians and Nutritionists |
| Kaua‘i | Radiology Technicians, Ultrasound Technicians, Mental Health and Substance Abuse Social Workers, Physical Therapists, Occupational Therapists |

Based on a more recent analysis, Hawai‘i had shortages of primary care, dental, and behavioral health professionals (HRSA, 2018). Although O‘ahu had the majority of the health professionals, there continued to be a shortage of health professionals across the island (i.e., in community health clinics). On Hawai‘i Island, many of the community health clinics lacked all three types of professional providers. Moloka‘i, and Maui County in general, had shortages of primary care and mental health providers, while Kaua‘i had a shortage of mental health providers. Regarding physicians specifically, the *Report to the 2016 Legislature* (Withy, 2015) indicated that by 2020, the best-case scenario would be a shortage of 800 physicians, and the worst-case scenario would be a shortage of 1,500 physicians, with the greatest shortage in primary care. Table 3 presents the greatest physician specialty shortages by county.

Table 3
*Greatest Physician Specialty Shortages by County*

| County | Occupations |
|---|---|
| Honolulu | Primary Care, General Surgery, Cardiology, Orthopedics |
| Hawai‘i | Primary Care, Orthopedics, Psychiatry, Obstetrics-Gynecology |
| Maui | Primary Care, Psychiatry, General Surgery, Emergency |
| Kauai | Primary Care, Orthopedics, Cardiology, Pathology |

Table 4 presents the greatest physician shortages by percentage and numbers of providers for each county based on the *Hawai‘i Physician Workforce Assessment 2016* (Withy, Mapelli, Perez, Finberg, & Green, 2017).

Table 4
*Greatest Physician Shortages by Percentages and Numbers of Providers by County*

| County | By Percentage or Number of Providers | Occupations |
|---|---|---|
| Honolulu | Specialties with greatest percentage shortages | Infectious Disease, Pathology, General Surgery |
| | Specialties with greatest shortage by full-time equivalents | Primary Care, General Surgery, Pathology |
| Hawai‘i | Specialties with greatest percentage shortages | Infectious Disease, Neonatology, Colorectal Surgery |
| | Specialties with greatest shortage by full-time equivalents | Primary Care, Anesthesiology, Cardiology, Orthopedic, Pathology |
| Maui | Specialties with greatest percentage shortages | Allergy, Colorectal, Neurosurgery |
| | Specialties with greatest shortage by full-time equivalents | Primary Care, Emergency Medicine, Psychiatry |
| Kaua‘i | Specialties with greatest percentage shortages | Endocrinology, Rheumatology, Infectious Disease, Critical Care, Neonatology, Neurology |
| | Specialties with greatest shortage by full-time equivalents | Primary Care, Obstetrics, Cardiology, Neurology |

The current concept of workforce development for health care primarily entails the recruitment and training of, and service provision by, physicians and nurses. This restrictive framework of Western medicine lacks a broader, more inclusive definition of the health care workforce. Untapped individuals are excluded from contributing to the improvement of the health care workforce for Native Hawaiians.

❖ **There is an insufficient tracking system for systematically collecting health care workforce data specific to Native Hawaiians.**

In ancient times, Native Hawaiians were exceptionally skilled in the powers of observation, data-gathering and decision-making—often involving life-or-death decisions. Any chief with stewardship over an ahupua‘a[9] needed to know about the people and the resources within the ahupua‘a to make sound decisions and plan appropriately for the future.

Workforce development efforts in a Native Hawaiian health care system need to engage those same skills of observation and data-gathering to make informed decisions. A fair amount of data exists on Hawaii’s overall health care workforce. However, there remains a lack of health care professional workforce data on those who serve Native Hawaiians and on health care professionals who are Native Hawaiian by community, island and state. Further, there are no comprehensive and centralized means of collecting and tracking the necessary data for both Western and traditional cultural practitioners.

The data dimensions that are lacking regarding Native Hawaiian health workforce include entities that already serve to increase workforce, employment opportunities and characteristics (e.g., health care positions, salaries, certification requirements), recruitment approaches, number of trainees, job placement, retention and career development.

❖ **There is a lack of education and training programs and interventions to increase the workforce for Native Hawaiian health.**

*We would need to double, double to triple everything, to actually train enough [physicians for Hawai‘i]. And you know that’s not going to happen…We actually don’t have the capacity to do that right now; we don’t have enough training sites.*

Kelley Withy, MD, PhD
Executive Director
Hawaii/Pacific Basin AHEC Program Office
University of Hawai‘i
John A. Burns School of Medicine

In ancient times, a Native Hawaiian youth who might have a curiosity about fishing, farming, or healing and medicine knew exactly whom to seek out to gain expertise. The physical proximity of those

[9] land division

living in the ahupua‘a[10] made this kind of information readily available. In our contemporary Western society, Native Hawaiian youth and their support systems (whether ‘ohana,[11] educators, or social service agents) have neither understanding of, nor intimate access to, the pathways to education and training in health care.

There are several exemplary programs that directly increase the health care workforce to improve Native Hawaiian health. Yet, there remain significant gaps in those aspects of education and training programs that will grow and maintain the health care workforce to a level where all Native Hawaiians can be appropriately served. This can be said for nearly all health and health-related professions in Hawai‘i.

The following gaps are noted in education and training programs to increase the workforce for Native Hawaiian health: (1) comprehensive needs assessment, including necessary resources; (2) centralized hub of information on existing programs; (3) marketing, outreach and recruitment; (4) effective education and training programs for health care, allied health care and other non-clinical health-related support professions; (5) retention and graduation from education and training programs; (6) job opportunities, placement and retention; and (7) career development and mentorship.

- **There is a lack of culturally relevant efforts to increase the workforce for Native Hawaiian health.**

Despite the promising culturally-based approaches indicated above, there remain insufficient awareness, knowledge, and appropriate utilization of Native Hawaiian healing traditions (e.g., lomilomi,[12] la‘au lapa‘au,[13] ho‘oponopono[14]), as well as inadequate integration of Native Hawaiian healing traditions, Native Hawaiian culture (e.g., ‘ohana,[15] ahupua‘a[16]) and Western medicine. In the recent past, Native Hawaiians were trained as health professionals in the ways of Western medicine. If they desired to practice integrated healing, they sought out traditional Native Hawaiian healers to learn the Native Hawaiian way of Ola. Then, they individually integrated these practices. This individualistic method of integration is not an efficient way to utilize the best of different types of practices. Unfortunately, there are no systematic and structured opportunities for training and service provision that integrate traditional Native Hawaiian healing and culture with contemporary Western medicine.

- **Current procedures, regulations and policies do not fully support the workforce for Native Hawaiian health.**

There are procedures, regulations and policies (e.g., credentialing, service-reimbursement) that hinder a viable workforce for Native Hawaiian health. While this could be said of Hawaii’s health care workforce in general, this applies even more so for a Native Hawaiian health care workforce.

- **There is concern over quality-of-life issues, especially in light of inadequate resources to support the necessary workforce for Native Hawaiian health.**

In ancient times, Native Hawaiians’ motivations and incentives for work were a blend of day-to-day survival and sustainable practices that ensured long-term health and wellness for all. The social structures supporting ‘ohana[17] in the ahupua‘a[18] were holistic and not limited to economic or capitalistic incentives. There was a clear path based on stewardship or responsibility to the ‘aina[19] and ‘ohana[20] that provided motivation and purpose for engaging in work and living.

Currently, a more Western supply-and-demand society exists, in which the norm for “survival” is to have an occupation that provides a steady income; with this income, necessities are purchased (e.g., food, services) within a certain economic environment (i.e., cost of living and housing). Given that, at least to some degree, people have choices in what professions and jobs they will pursue and where they will reside, there are insufficient resources to provide a balanced quality of life (between one’s personal and professional lives) while expanding the workforce for Native Hawaiian health to the necessary level on multiple fronts: (1) health and health-related occupations; (2) data collection and tracking; (3) education and training programs (addressing program costs, tuition, stipends for trainees, etc.); and (4) cultural relevance.

[10] land division
[11] family, extended family
[12] traditional Hawaiian massage
[13] traditional Native Hawaiian medicine, utilizing natural remedies
[14] Native Hawaiian practice of forgiveness and reconciliation
[15] family, extended family
[16] land division
[17] family, extended family
[18] land division
[19] land, earth
[20] family, extended family

One prominent quality-of-life issue involves balancing the compensation a health care worker receives and the high cost of living in Hawai‘i. While the ideal workforce would be altruistically passionate about caring for others, to rely solely on this as the “incentive” for health care workers may lead to burnout and disillusionment. Ultimately, it may lead our best and brightest to look elsewhere to pursue their career goals and aspirations, either in other fields and/or other locations. It is essential that health care and allied health care professionals have a reasonable opportunity to enjoy a good quality of life and achieve some degree of financial security in Hawai‘i.

Unfortunately, there is inadequate direct and indirect compensation for the workforce for Native Hawaiian health. First, health care employees are typically required to have certain types of post-secondary credentials and/or degrees and practicums from professional schools and universities. While they pursue these qualifications, their income levels are low, and in some cases, student loans must be secured to pay for the training (e.g., medical students can end up with well over $100,000 in student loans). Second, even when entering the health care workforce, there are several complex issues related to compensation: (1) employment income (either fee-for-service or salaried); (2) stipends or other types of income for serving patients in underserved populations or locations; (3) loan-repayment incentives; and (4) other kinds of incentives, especially to serve Native Hawaiian communities.

In addition to compensation, the high cost of living in Hawai‘i must be factored into the equation of quality of life and some degree of economic security. Regardless of career or industry interest, today’s learners face the daunting reality of the high cost of living in Hawai‘i. The best and brightest, even in health care, regardless of origin or the location of their education and training, are being paid generally the same or sometimes less than their continental U.S. counterparts, while bearing the burden of one of the highest costs of living in the nation (Thompson, 2008). At present, there are few economic incentives either to keep high-performing Native Hawaiian talent in Hawai‘i or to attract home Native Hawaiian talent currently living away from Hawai‘i. Typically, among the higher-wage health care career pathways, it is difficult to place Native Hawaiians in Hawai‘i because of the discrepancy between generally below-average salary or wages and the high cost of living. Additionally, providers also have years of minimal, if any, income during training, and possible accumulation of student loans.

A specific example in the health care industry is the projected need for more physicians to serve in rural areas of Hawai‘i. Most graduates of medical schools and residency training programs will be able to begin their medical practices with a high level of certainty about their income being competitive and allowing for growth opportunities. However, Native Hawaiian medical doctors wanting to practice in Hawai‘i must face the daunting reality of (1) fewer career possibilities in Hawai‘i (e.g., there may be more opportunities in rural Hawai‘i; however, many physicians may not feel that this will provide an optimal environment in terms of community resources and career-building opportunities); (2) typically lower income as compared to opportunities elsewhere in the U.S.; (3) higher cost of living in Hawai‘i; and (4) for many, substantial student loan debt.

The application of technology in health care is also relevant to quality of life and financial security. Those who choose to practice in Hawai‘i are challenged not only economically, but by sometimes outdated systems for managing patient care and patient data, making the work more difficult. Being trained on more advanced and efficient systems, and then being asked to essentially go backwards technologically while in practice creates psychological challenges. Limited resources are available to maintain the support systems inherent in world-class health care systems. This may lead to lower levels of employee engagement and satisfaction, which, in turn, may lead to (1) lower levels of performance, and thus lower quality of service; and/or (2) health care professionals looking elsewhere for better opportunities, seeking not only financial security, but also an infrastructure that can equip them with high-quality tools and systems.

Finally, quality of life involves a balance between one’s personal and professional lives. If personal goals are impeded by inordinate professional obstacles, the Native Hawaiian health care workforce will be in jeopardy. Personal and social resources are less concrete than, for example, salary or wages, but are nonetheless significant. An example of a professional accommodation supporting personal choice may be a health care work environment that allows for a more flexible work schedule for a health care worker who would like to start a family. An example of a personal or social accommodation would be a significant other who accommodates the professional lifestyle of a health care worker (e.g., physicians being on call) or the location of the job opportunity (e.g., a couple or family moving to a neighbor island to serve a rural Native Hawaiian community).

*You’re in for a rude awakening especially if you don’t have an existing support system to lean on to help you with those transitions, to talk with about rural health ethics, or better still take your partner with you, like a*

*spouse; that kind of isolation is one of the reasons we have health provider attrition in rural communities… [We need] those resources and supports in place for early health career professionals.*

Aukahi Austin Seabury, PhD
Executive Director
I Ola Lāhui

- **An overall strategy and an organization to advocate for and advance the necessary workforce for Native Hawaiian health remain lacking.**

While there exist pockets of remarkable efforts to increase the Native Hawaiian health care workforce, and there is a greater awareness of the shortages in Hawaii's health care workforce (e.g., Withy, 2015; Withy et al., 2017; Workforce Development Council, 2011), there remains a gap in the overall strategic plan to address the needs of the workforce for Native Hawaiian health, as well as a designated organization that will advocate for and carry out such a strategic plan.

**Recommendations for Impact**

He mau makana nāu kēia
na kō mākou kupuna.

*These are gifts for you from our elders.*

Aha Kane Introduction
June 2012

The Workforce Development Task Force's recommendations presented herein are based on the cumulative knowledge and expertise, a Kanaka Maoli[21] mindset, and wisdom from kūpuna[22] on the principles of self-determination, self-sufficiency and sustainability. These recommendations are set forth with the purpose of establishing policies and actions that will achieve optimal Native Hawaiian health as kuleana[23] going forward, with an enduring positive influence in addressing the long-term effects of trauma experienced by Native Hawaiians.

- **Broaden and maintain a thriving workforce to address Native Hawaiian health care needs.**

Utilizing a multi-level approach, broaden and maintain a thriving workforce for Native Hawaiian health that targets the current and projected workforce shortage of professionals, particularly at specified locations. The latter may also include the continental U.S. where nearly half of the Native Hawaiians in the U.S. reside (Essoyan, 2012). There will need to be some extrapolation given the lack of empirical data on Native Hawaiian workforce shortages there (e.g., target communities with a high proportion of Native Hawaiians).

- **Develop and maintain a comprehensive, centralized data-collection and tracking system of health care workforce data specific to Native Hawaiians.**
  - Include aspects of both Western medicine and indigenous health care pathways, such as lomilomi,[24] laʻau lapaʻau,[25] and hoʻoponopono.[26]
    - Include elements such as (1) entities that already serve to increase workforce, (2) employment opportunities and characteristics (e.g., health care positions, salaries, certification requirements), (3) recruitment approaches, (4) number of trainees, (5) job placement, (6) retention, and (7) career development.
    - Index kumu,[27] kūpuna,[28] and kahuna lapaʻau[29] involved in education and training in Native Hawaiian health care practices.
  - Utilize, through identification and collaboration, existing data and organizations that will contribute to the comprehensive system.
  - Develop new data collection methods to fill the gaps of information in existing databases.
    - Based on the Department of Labor Research and Statistics' experiences in conducting surveys, a separate survey of health care employers is deemed the best option to capture information on Native Hawaiians employed in health care

[21] full-blooded Hawaiian person
[22] grandparent, ancestor
[23] right, privilege, concern, responsibility
[24] traditional Native Hawaiian massage
[25] traditional Native Hawaiian medicine, utilizing natural remedies
[26] Native Hawaiian practice of forgiveness and reconciliation
[27] teacher(s)
[28] grandparent(s), ancestor(s)
[29] healer

occupations. The Department of Labor Research and Statistics is not allowed to make modifications to the Bureau of Labor Statistics employer surveys that it conducts. Therefore, adding questions to existing surveys is not an option.

- The survey approach will allow targeting of specific employers with the largest number of health care jobs and will require extensive follow-ups with employers if the survey is not mandatory. Increasing awareness of the survey and its importance among organizations that are part of the industry would increase the response rate. Coordination among all stakeholders involved would produce better data by making everyone more aware of efforts and initiatives whose ultimate goal is to serve the Native Hawaiian population, the industry itself, and the development of Hawaii's health care workforce. This survey could be conducted either once or twice per year. Over time, this approach will also allow the examination of trends and projections into the future.

- Analyze the data to determine current and future shortages (e.g., early-warning system; Workforce Development Council, 2011) and, based on these results, develop and implement strategies to prevent such shortages.

- **Support existing effective education and training programs and develop and sustain new ones that will create a thriving workforce for Native Hawaiian health.**

E lawe i ke aʻo a mālama,
a e ʻoi mau ka naʻauao.

*He who takes his teachings*
*and applies them increases his knowledge*

ʻŌlelo Noʻeau #328
(Pukui, 1983, p. 40)

- Conduct periodic, comprehensive needs assessments of the Native Hawaiian health care workforce that will help to inform decisions on education and training programs.
- Address critical factors, such as (1) marketing, outreach, and recruitment (e.g., as early as kindergarten to high school); (2) effective education and training programs for health care, allied health care and other non-clinical health-related support professions; (3) retention and graduation from education and training programs; (4) job opportunities, placement, and retention (Workforce Development Council, 2011); and (5) career development and mentorship.

- Improvement must be made in identifying and supporting promising young Native Hawaiians who are interested in the health care professions, training them well, and then allowing them to return home by creating opportunities to live, work, and thrive here. There is a need to be creative in preparing Native Hawaiians for success from the beginning of the health care-career pipeline to the end, in which they are not just practicing health care but are thriving leaders in the community.

*The ideal health professional would be someone who isn't in it to get rich...has lots of energy and has a passion for helping individuals and families and community and who is able to listen and empathize. Someone who can learn quickly and is flexible…They also have to like learning…They have to be curious. And have perseverance. You need a good sense of humor and the ability to kind of go with the flow.*

Rachelle Enos, MPH
Research Coordinator
Waiʻanae Coast
Comprehensive Health Center

- Plan and coordinate the dissemination of information regarding available training and development programs to the next generation of Native Hawaiian health care workers in Hawaiʻi.
- Adapt the evolving system of care to reflect emerging perceptions of careers and means of employment that may impact career development and decisions (e.g., the "gig economy" of entrepreneurship and independent contracting).
- Better identify those of the rising Native Hawaiian generation who are interested in or have natural inclinations toward careers in health care, and effectively attract those who have not yet decided on a career pathway and/or who are not aware of possible health care career options. Direct and inspire them to explore the many resources listing

available education and training programs as well as the types of scholarships and other incentives available for the health care career pathways.

- ❖ Design and implement a "Messaging and Marketing" Health Professions Recruitment Program that includes exposure to both Native Hawaiian healing practices and Western approaches to health care.
- ❖ Design and implement a means to assist Native Hawaiians in accessing job training and job placement programs in Hawai'i and on the continental U.S.
- ❖ Develop and implement a retention program that encourages Native Hawaiians to stay in Hawai'i after graduation.
- ❖ Assist Native Hawaiians in Hawai'i, on the continental U.S., and elsewhere, to utilize programs that work collaboratively to expand educational access and excellence (e.g., Western Interstate Commission for Higher Education [WICHE]; Western Undergraduate Exchange [WUE]; Professional Student Exchange Program [PSEP]; Western Regional Graduate Program [WGRP]).
- ❖ Create a fellowship and work-exchange program partnership among the Association of Hawaiian Civic Clubs and other Native Hawaiian organizations in Hawai'i, and on the U.S. continent and other locations worldwide where significant numbers of Native Hawaiians reside.

*The ideal candidate[s]…are local kids who are smart and altruistic. Who will stay in Hawai'i and serve the people with the most need?*

Kelley Withy, MD, PhD
Executive Director
Hawai'i/Pacific Basin
AHEC Program Office
University of Hawai'i
John A. Burns School of Medicine

- ❖ **Increase the quality and quantity of culturally relevant efforts to expand and improve the workforce for Native Hawaiian health.**

*Hawaiian health [providers] should be dually trained. In Western, yes; but there should be a whole new curriculum dual track on Hawaiian healing and concept – both – [for] ho'oponopono,[30] la'au lapa'au,[31] la'au kahea,[32] and lomilomi.[33] It should be done by Hawaiian faculty teaching one Hawaiian concept.*

Kamana'opono Crabbe, PhD
Former Chief Executive Officer
(Ka Pouhana)
Office of Hawaiian Affairs

- ❖ In a more systematic manner, maintain and develop more culturally relevant efforts with a dedicated focus on Native Hawaiian traditional healing (e.g., la'au lapa'au,[34] ho'oponopono,[35] lomilomi[36]), and on an effective integration of Western medicine and Native Hawaiian culture (e.g., kūpuna as navigators to bridge the gaps in the health care system identified by Native Hawaiians).
- ❖ Recognize culturally-based competence as essential to improving the health and well-being of Native Hawaiians. As the Native Hawaiian health care system evolves for future generations, maintain its cultural context of Kanaka Maoli Ola.[37]
- ❖ Revisit, reorganize, integrate, and expand the Native Hawaiian Health systems to include existing Native Hawaiian-serving health care entities based in communities (i.e., Federally Qualified Health Centers and other Native Hawaiian-serving health care institutions) to offer cradle-to-grave services that are based in both traditional Native Hawaiian healing and Western methods, and are delivered in one's own community to the greatest extent possible.
- ❖ Maintain and build upon components of the community health center model which are consistent with more indigenous approaches to health care (e.g., incorporation of traditional health constructs and values, elimination of financial obstacles to service, provision of culturally competent and qualified health care providers, translation for effective communication, increased

[30] Native Hawaiian practice of forgiveness and reconciliation
[31] traditional Native Hawaiian medicine, utilizing natural remedies
[32] Native Hawaiian spiritual healing practice using "the Call"
[33] traditional Native Hawaiian massage
[34] traditional Native Hawaiian medicine, utilizing natural remedies
[35] Native Hawaiian practice of forgiveness and reconciliation
[36] traditional Native Hawaiian massage
[37] Native Hawaiian "breath of life" or "power of healing"

ownership on the part of patients and community members).

- ❖ Develop a credentialing system for the Native Hawaiian healing arts that ensures quality grounded in Native Hawaiian tradition and the context of ʻike Hawaiʻi.[38]
- ❖ Collaborate with existing efforts to build an independent Native Hawaiian Indigenous University to include schools of health care based on the Kauhale[39] system of education, in which the core approach is cultural learning to provide grounding and identity, establishing a sense of **pono**,[40] **ola**,[41] and **kuleana**.[42]

- ❖ **Advocate for existing and new procedures, regulations and policies that support a thriving workforce for Native Hawaiian health.**

  - ❖ Establish and implement policies that (1) support Native Hawaiian health professionals at all levels in remaining in Hawaiʻi; (2) mandate a comprehensive tracking system of training and employment in health, allied health professions, and non-clinical health-related fields; (3) support effective education and training programs; (4) foster culturally-relevant efforts related to the health care workforce; (5) provide resources to ensure a good quality of life and some degree of financial security for individuals in the workforce; and (6) foster the development and implementation of an overall strategic plan and organization to assure that there will be a thriving workforce for Native Hawaiian health.

- ❖ **Improve the quality of life, financial security and access to resources necessary for a thriving workforce for Native Hawaiian health.**

  - ❖ Provide the necessary resources (1) to continue current promising and effective approaches including the Native Hawaiian Health Scholars Program and other efforts that foster Native Hawaiian cultural relevance, and to expand the current programs to include non-clinical health degrees; (2) for a comprehensive data-collection and tracking system (e.g., once- or twice-a-year survey); (3) for technological advances that improve patient care, work efficiency, workforce morale and professional income; and (4) for the development of an overall strategic plan and organization to implement the plan.
  - ❖ Develop and implement a job and salary strategy that not only provides educational opportunities but supports successful completion and leads to job opportunities upon graduation.
  - ❖ Design and implement a system that incentivizes Native Hawaiian health care professionals to work in Hawaiʻi, including traditional Native Hawaiian healers.

    - ❖ This effort should include ways not only to increase direct and indirect compensation, but also to mitigate the high cost of living in Hawaiʻi (e.g., a housing plan for health care workers).

  - ❖ Create a hui[43] of health care practitioners and microenterprises to support those who would like to establish their own clinics, offices or small health care businesses.

    - ❖ This endeavor would leverage collective strengths and resources to allow for economies of scale for business management, networking, marketing, accountant services and other business operations assistance.

  - ❖ Develop a Native Hawaiian Loan Repayment program in partnership with the Department of Labor and Industrial Relations Health Care Workforce Advisory Board.

*Loan repayment is a big one that we're doing…if they [professionals] come back [to the islands] and they work in an area that's designated as a health profession shortage area, …they can get loan repayment…that starts at $30,000 [and] goes up to 40,000 a year, paid to the lender…And it's not just for the doctors…It's not limitless, but it's existing.*

Kelley Withy, MD, PhD
Executive Director
Hawaiʻi/Pacific Basin AHEC
Program Office
University of Hawaiʻi
John A. Burns School of Medicine

[38] Native Hawaiian knowledge, experience
[39] group of houses comprising a Hawaiian home
[40] wellness, prosperity
[41] health, well-being
[42] right, responsibility
[43] association

- Achieve sustainability by establishing a competitive Native Hawaiian health insurance company.
    - In addition to Western medical coverage, a health insurance company that offers coverage for both Western and traditional Native Hawaiian healing practices (i.e., laʻau lapaʻau,[44] hoʻoponopono,[45] lomilomi[46]) could have a competitive advantage in Hawaiʻi.
- Educate health care employers on the importance of personal quality-of-life issues (e.g., wellness) and assist health care workers to advocate for occupational accommodations that will enhance their personal quality of life and wellness.

- **Assemble a group of dedicated stakeholders who will develop and implement an overall strategy plan to fulfill the recommendations of the Workforce Development Task Force, and subsequently modify the strategic plan as needed with the goal of a thriving workforce for Native Hawaiian health.**

This dedicated group of individuals should be assembled from representatives who are stakeholders in the Native Hawaiian health care workforce. This may entail a partnership with existing Native Hawaiian entities, including organizations such as Papa Ola Lōkahi. The present recommendations may serve as a starting point with the ultimate goal of a thriving, culturally relevant Native Hawaiian health care system that meets the health needs of all Native Hawaiians and that serves as a model for all of Hawaii's people.

## Conclusion

Central to improving Native Hawaiian health is the health care workforce that needs to thrive and serve Native Hawaiians. Since the 1985 *E Ola Mau Study*, there has been increased understanding of (1) empirical findings regarding workforce shortage, (2) a broader concept of health care workforce, and (3) interventions that improve career quality and economic security. Effective and promising approaches have included (1) the creation of Native Hawaiian-focused programs, (2) interventions that address quality of life and economic realities and (3) collaborations that increase the potential to improve workforce development. However, many gaps remain in the following areas: (1) the health care workforce to address Native Hawaiian needs; (2) data-collection and tracking systems; (3) education and training programs; (4) culturally relevant efforts; (5) procedures, regulations and policies regarding the Native Hawaiian health care workforce; (6) resources to support quality of life; and (7) an overall strategic plan and lead organization. To address each of these gaps, we offer the following recommendations: (1) broaden and maintain a thriving workforce; (2) develop and maintain a comprehensive data-collection and tracking system; (3) support existing education and training programs, and develop new ones; (4) increase the quality and quantity of culturally relevant efforts; (5) advocate for existing and new policies that support the Native Hawaiian health care workforce; (6) augment resources to support high quality of life; and (7) assemble an organization of stakeholders that will develop and implement an overall strategic plan.

[44] traditional Native Hawaiian medicine, utilizing natural remedies

[45] Native Hawaiian practice of forgiveness and reconciliation

[46] traditional Native Hawaiian massage

# References


Australian Indigenous HealthInfoNet. (2018). *Workforce Development.* Retrieved from https://healthinfonet.ecu.edu.au/key-resources/health-professionals/health-workers/workforce-development/

DeCambra, C. C., & Lee, W. K. L. (2011). Imi Hoʻola Program: Producing primary care physicians for Hawaiʻi and the Pacific. *Hawaiʻi Medical Journal, 70*(11), Supplement 2, 25-26. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3254222/pdf/hmj7011_suppl2_0025.pdf

Essoyan, S. (2012, May 9). Native Hawaiian, Pacific Islander population swells: Census numbers show 1.2 million in the nation, a climb of 40 percent in 10 years. *Honolulu Star Advertiser*, pp. A1-A8.

Healthcare Association of Hawaiʻi. (2013). State of Hawaiʻi community health needs assessment. Retrieved from http://hah.org/wp-content/uploads/2013/12/2013_state_chna.pdf

Health Resources and Services Administration (HRSA). (2018). *Data warehouse.* Retrieved from https://datawarehouse.hrsa.gov/tools/analyzers/HpsaFindResults.aspx

Judd, N. L. K., Sakamoto, K. K., Hishinuma, E. S., DeCambra, C., & Malate, A. R. (2007). Imi Hoʻola: An educational model for disadvantaged students at the University of Hawaiʻi School of Medicine. *Pacific Health Dialog, 14*(1), 199-204.

Ministry of Health. (2005). *Raranga Tupuake: Māori Health Workforce Development Plan: Discussion document.* Wellington: Ministry of Health. Retrieved from http://www.moh.govt.nz/notebook/nbbooks.nsf/0/9a4cc7c464a46639cc2570130078b880/$FILE/rarangatupuake.pdf

Record-setting Native Hawaiian, Filipino and overall 4-year UH Mānoa graduation rates. (2018, December 3). *Hawaiʻi Free Press.* Retrieved from http://www.hawaiifreepress.com/ArticlesMain/tabid/56/ID/22704/UH-Record-setting-Native-Hawaiian-Filipino-and-overall-4-year-UH-Manoa-graduation-rates.aspx

South Australian Aboriginal Health Partnership. (2010). Aboriginal health – Everybody's business: Health workforce development. A South Australian strategy for aboriginal and Torres Strait Islander People, 2005-2010. South Australia: Department of Health. Retrieved from https://www.sahealth.sa.gov.au/wps/wcm/connect/5551fc80434bc22e9889deba9c78a5ba/health_workforce_devel.pdf?MOD=AJPERES&CACHEID=5551fc80434bc22e9889deba9c78a5ba

Thompson, R. (2008, December 17). Honolulu's cost of living ranks third in the U.S., report says. *Honolulu Star Bulletin*.

Withy, K. (2015). University of Hawaiʻi System Annual Report: Report to the 2016 Legislature, annual report on findings from the Hawaiʻi Physician Workforce Assessment Project. Retrieved from https://www.hawaii.edu/offices/eaur/govrel/reports/2016/act18-sslh2009_2016_physician-workforce_annual-report.pdf

Withy, K., Mapelli, P., Perez, J., Finberg, A., & Green, J. (2017). Hawaiʻi Physician Workforce Assessment 2016: Improvement in physician numbers but physician suicides of concern. *Hawaiʻi Journal of Medicine and Public Health, 76*(3), 3-9. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3347731/pdf/hjmph7104_suppl1_0006.pdf

Workforce Development Council. (2011). *Hawaiʻi's healthcare workforce 20/20 plan and report: Addendum to the Comprehensive State Plan for Workforce Development 2009-2014.* Retrieved from http://lrbhawaii.info/reports/legrpts/dlir/wdc/healthcare2020.pdf

**Appendix**
Resources on Labor Force and Related Employment

| Resource & Description | Source | Limitations & Advantages |
|---|---|---|
| **Career Kokua:** A computerized system of localized, current career and related educational information for career decision-making. Information covers all occupations and all licensed and accredited training programs and training providers in the State. | https://careerkokua.hawaii.gov<br><br>Career Kokua, the State's career information delivery system, is administered by Department of Labor and Industrial Relations' (DLIRs') Research & Statistics (R&S) Office. | • This is a comprehensive system of local occupations and training.<br>• Neither data on individuals nor demographics collected.<br>• Career Kokua has a small database of employers and organizations willing to provide work-based learning opportunities that should be expanded for health care occupations. |
| **Current Employment Statistics (CES) Survey:** A monthly survey of non-farm business establishments that collect data on wage and salary employment, worker hours, and payroll by industry and area. These data are used to compute current monthly employment, hours, and earnings estimates. | www.hiwi.org<br>Click on Job Count under Quick Data Links.<br><br>The Research & Statistics (R&S) Office of the Department of Labor and Industrial Relations (DLIR) collects these data through a Cooperative Agreement with the Bureau of Labor Statistics (BLS). | • No demographic data collected; no data on Native Hawaiians specifically.<br>• Job counts are highlighted in the monthly Press Release from DLIR, along with the unemployment rates for Hawai'i and the counties. |
| **Current Population Survey (CPS):** A monthly household survey of the civilian non-institutional population of the United States. This survey provides the national unemployment rate and a variety of statistics on employment, unemployment, and earnings detailed by demographic characteristics, occupation, and industry. | https://www.bls.gov/cps/home.htm<br><br>CPS is sponsored by Bureau of Labor Statistics (BLS). The Census Bureau conducts the survey and BLS analyzes and publishes the results. | • Demographic data are available; however, the CPS is based on a sample, and Hawaii's sample size is very small (around 800 households).<br>• No breakout for Native Hawaiians; race characteristics are limited to Asian, Black/African American, Hispanic/Latino, and White. |
| **Data eXchange Partnership (DXP):** A Hawai'i-wide cross-agency longitudinal data system that links information from infancy through early learning, kindergarten-12$^{th}$ grade and postsecondary education, and into the workforce. Information from Hawai'i DXP can help guide decisions and policies to improve learner and workforce outcomes. | http://hawaiidxp.org/<br><br>DXP is administered by Hawai'i P-20 Partnerships for Education. Current partners are the Department of Education, Department of Labor and Industrial Relations (DLIR), and University of Hawai'i. Partnerships are pending with Early Childhood and the Department of Health and Human Services. | • Can provide cross-sector data for ad hoc data requests, data analysis and reports, interactive dashboards, and data for research projects.<br>• Limited to University of Hawai'i system students.<br>• DXP participates in a Western Interstate Commission for Higher Education (WICHE) Multi-State Longitudinal Data Exchange Project; therefore, it is possible to get some data from selected states.<br>• Requests for data must be approved by all partners. |

| Resource & Description | Source | Limitations & Advantages |
|---|---|---|
| **Employment Projections:** A program that develops and maintains industry and occupational employment projections for Hawai‘i and counties. Projections are used to identify in-demand industries and occupations for career guidance; to plan employment, education and training, and economic development programs; and as supporting documentation to apply for federal grants and other purposes. | www.hiwi.org<br>Click on Employment Projections under Quick Data Links to find tables and reports for Long-Term Projections (10-year) for Hawai‘i and the counties and the Short-Term Forecast (2-year) for Hawai‘i.<br><br>The Research & Statistics (R&S) Office of the Department of Labor and Industrial Relations (DLIR) develops the Projections under a Workforce Information Grant funded by the Employment and Training Administration (ETA) of the U.S. Department of Labor. | • Does not include any demographic data; no data on Native Hawaiians specifically. |
| **Eligible Training Providers List (ETPL):** A database of training programs and training providers that can be funded by the Federal Workforce Innovation and Opportunity Act (WIOA). | http://dlir.state.hi.us/labor/etp/<br><br>The ETPL is a requirement of WIOA and the Employment and Training Administration (ETA). | • Training providers are required to provide performance information on all individuals participating in their programs for federal reporting purposes.<br>• Performance measures include job placement rates, earnings, and credentials earned. |
| **Employers:** A database of employers in Hawai‘i. | www.hiwi.org<br>Click on Services for Job Seekers, then click on Employers under Job Seeker Services.<br><br>Provided to all states by the Employment and Training Administration (ETA). | • Able to search for employers by keyword, industry, or employer size (number of employees). |
| **Hawai‘i State Data Center (HSDC):** A local source that distributes census data; assists the public in the use of census data by providing technical advice; educates the public by providing guides and sponsoring training on census data, products, and tools; and maintains a network of affiliate organizations throughout Hawai‘i.<br><br>http://census.hawaii.gov/ | HSDC is a part of the Research and Economic Analysis Division (READ) of the Hawai‘i State Department of Business, Economic Development and Tourism (DBEDT). | • Demographic and census geography data are available. |
| **Hawai‘i Workforce Development Programs Funding Summary 2016:** Provides a summary of workforce and education funds, program types, and target populations. | Workforce Development Council (WDC). | • Not available online. |

| Resource & Description | Source | Limitations & Advantages |
|---|---|---|
| **HireNetHawaii (HNH):** Hawai'i's job matching system. Employers are able to post their job openings and individuals can register for job searches and job alerts. | www.hirenethawaii.com<br><br>HNH is administered by the Workforce Development Council for Hawaii's and counties' workforce development and employment service programs. | • HNH also serves as a participant management information system and demographic data on workforce program participants are collected for federal reporting purposes.<br>• Performance measures include job placement rates, earnings, employment retention, skill gains, and credentials earned.<br>• There are numerous online job boards available; however, HNH "spiders" the web nightly for all Hawai'i job postings, and therefore, provides one centralized database with all Hawai'i online jobs. |
| **Local Area Unemployment Statistics (LAUS):** A program that produces employment, labor force, and unemployment estimates for states and local areas. | www.hiwi.org<br>Click on Unemployment Rates under Quick Data Links.<br><br>The Research & Statistics (R&S) Office of the Department of Labor and Industrial Relations (DLIR) collects these data through a Cooperative Agreement with the Bureau of Labor Statistics (BLS). | • No demographic data collected; no data on Native Hawaiians specifically.<br>• Labor force and unemployment data are available by census tract. |
| **Labor Market Analyzer:** Analysis of online listings and job applicants. | Provided upon request by the Labor Market Research Team within the Research & Statistics (R&S) Office of the Department of Labor and Industrial Relations (DLIR). | • It may be possible to obtain aggregate demographic data on job applicants for specific occupations. |
| **Local Employment Dynamics:** Data analysis tools using data from the Bureau of Labor Statistics (BLS) and U.S. Census Bureau: (1) QWI (Quarterly Workforce Indicators) creates charts, maps, and interactive tables to compare, rank, and aggregate QWIs across time, geography, and/or firm and worker characteristics; (2) OnTheMap is a powerful mapping tool that can show where workers are employed and where they live; (3) Local Employment Dynamics (LED) Extraction Tool provides queries and extraction of raw data; and (4) Job-to-Job Flows Explorer analyzes hires by state and industries. | www.hiwi.org<br>Click on Local Employment Dynamics under Quick Data Links.<br><br>The Research & Statistics (R&S) Office of the Department of Labor and Industrial Relations (DLIR) provides these LED tools through a partnership with the U.S. Census Bureau. | • Depending on the tool, may be able to obtain breakdown of worker characteristics and may be able to filter data by age, earnings, industry, race, ethnicity, educational attainment, and gender. |
| **Occupational Employment Statistics (OES):** A program that collects and publishes detailed occupational and wage data by industry. | www.hiwi.org<br>Click on Wages by Occupation under Quick Data Links.<br><br>Department of Labor and Industrial Relations' (DLIR)'s Research & Statistics (R&S) Office collects these data through a Cooperative Agreement with the Bureau of Labor Statistics (BLS). | • No demographic data collected; no data on Native Hawaiians specifically. |

| Resource & Description | Source | Limitations & Advantages |
|---|---|---|
| **Professional and Vocational Licensing (PVL) Division:** Responsible for 25 professional boards and commissions and 24 licensing programs. In total, the Division licenses 49 different professions and vocations. | http://cca.hawaii.gov/pvl/<br>Click on the specific licensing area.<br><br>A division of the Hawai‘i Department of Commerce and Consumer Affairs. | • PVL allows one to build and download customized lists of licensees. By law, only public information may be disclosed, including license number, name, status, and initial date licensed. No address information is provided with the exception of business address information for entity licenses only.<br>• Fees depend on the number of records, or the entire database can be purchased. |
| **Quarterly Census of Employment and Wages (QCEW):** A program that collects and compiles employment and wage data for workers covered by Hawai‘i unemployment insurance (UI) laws and federal civilian workers covered by Unemployment Compensation for Federal Employees (UCFE). | www.hiwi.org<br>Click on Industry Employment and Pay under Quick Data Links.<br><br>The Research & Statistics (R&S) Office of the Department of Labor and Industrial Relations (DLIR) collects these data through a Cooperative Agreement with the Bureau of Labor Statistics (BLS). | • No demographic data collected; no data on Native Hawaiians specifically.<br>• No occupational data collected. |



# Acknowledgments

ʻAʻohe hana nui ke alu ʻia.
*No task is too big when done together by all.*

Isabella Ahrens, BillyAkutagawa, C. Kimo, Alameda, Emmett Aluli, Joy K. Andrade, Naleen N. Andrade, Laura Arcibal, ʻAukahi Austin Seabury, Nicole Kauilani Baumhofer, Stephanie Bell, ʻAlohi Bikle, Brian Bikle, Kim Kuʻulei Birnie, Helen Kaleleonālani Blaisdell-Brennan, Gayle Bonham, Marvin Buenafe, Robert Bullen, Jessi Cadorna, Jessica Nāpua Casson-Fisher, Kalei Chandler-Ahsing, Thomas Chock, Shaylin Chock, Ian Chun, Suzanne Chun-Oakland, Anaeliz Colon, Kamanaʻopono Crabbe, Sheri-Ann Daniels, Phyllis Dayao, Mikako Deguchi, Kanoe Enos, Rachelle Enos, Tamara Faʻagau Hailama Farden, Kamahanahōkūlani Farrar, Kealoha Fox, Dan Fujii, Babette Galang, Blane Garcia, Jessica Garlock, Pearl Ulunuikamamalu Kanakaʻole Garmon, Kapuaola Gellert, Deborah Goebert, Joseph Gonsalves, Jr., Mark Greer, M. Nina Guerrero, Melissa Hamada, Heather Haynes, Andrea Hermosura, Earl Hishinuma, Komela Horner, Claire K. Hughes, Loretta Hussey, Sylvia Hussey, Betty Jenkins, Nanette Kapulani Mossman Judd, Hoʻoleia Kaeo, Kate Leilani Kahoano, Joseph Keaweʻaimoku Kaholokula, Randal Kam, Tasha Kama, Martina L. Kamaka, Kauanoe Kamanā, Aletha Kaʻohi, Earl Kawaʻa, Jaclyn Kanilehua Kim, Lorrin Kim, Noella Kong, Tercia L. Kū, Crystal Kua, Vicki Lau, Wayde Lee, Palama Lee, Selene LeGare, Jodi Leslie Matsuo, Momi Lovell, Mark Alapaki Luke, Stanley Lum, Sasha Madan, Emily Makahi, George Makini, Marjorie K. Leimomi Mala Mau, Alika Maunakea, Christina Minami, Nālani Minton, Sandra Morimoto-Ching, Analika Nahulu, Eli Nahulu, Jan N. Nakamoto, Jackie Ng-Osorio, Sharon Kaʻiulani Odom, May Okihiro, Asia Olivieri, Emi Malia Eno Orikasa, Deja Ostrowski, Lynette Paglinawan, Ciera Pagud, Donna-Marie Palakiko, Jane Kaʻala Pang, Nancy S. Partika, Mark Patterson, Kim Puente, Marie Kainoa Revilla Fialkowski, William Rezentes, Chelsey Ruth, Adriano (Puna) Sabagalo, Charlie Schlather, William Sheehan, Dexter Soares, Pohaokalani Sonoda-Burgess, Donna Haunani Spix, R. Nāpualani Spock, Hardy Spoehr, Jeanelle Sugimoto-Matsuda, Elizabeth Kealiʻikuaʻaina Tam, Malia Tector-Agustin, Matt Turnure, Gavin Uchida, Erika Vincent, K. Kaʻanoʻi Walk, Lisa Watkins-Victorino, Kamuela Werner, Marisa Wilson, Kelley Withy, Māhealani Yamaguchi, Benjamin Young, DeDe Young, Jared Yurow

Mahalo piha to these individuals for their contributions to
*E Ola Mau a Mau – The Next Generation of Native Hawaiian Health*





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