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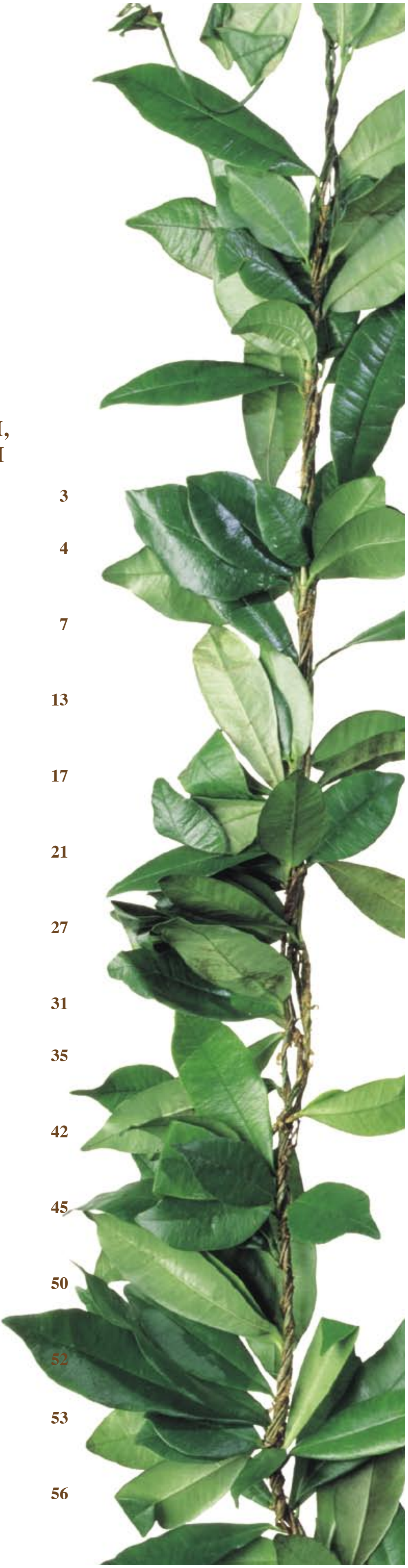

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GUEST EDITOR'S MESSAGE

NEAL A. PALAFOX MD, MPH; CHAIR, DEPARTMENT OF FAMILY MEDICINE AND COMMUNITY HEALTH, JOHN A. BURNS SCHOOL OF MEDICINE, UNIVERSITY OF HAWAI‘I

The June 2010, Volume 69 issue of the Hawai‘i Medical Journal celebrates health care in the Pacific Islands - Hawai‘i and the US Associated Pacific Island Jurisdictions (USAPIJ). We celebrate because the disparity of poor health outcomes in our island neighbors, and the challenges to improve these outcomes, are now being given critical thought and a higher priority. Hawai‘i's health and welfare systems are experiencing the reality of poor health outcomes in the USAPIJ; therefore, the health care in Hawai‘i and the USAPIJ are inextricably linked.

Why are the people of the USAPIJ here in Hawai‘i? The Kānaka Maoli, indigenous Hawaiian people, first journeyed in their sailing canoes from South Asia. Their great navigational science guided them to Hawai‘i in 300 AD. The Western contact and "discovery" in the 1700's brought diseases which decimated the Kānaka Maoli population from over 400,000 to 40,000. As the Kānaka Maoli population stabilized, the cultural complement of Hawai‘i rapidly evolved as the Chinese, Japanese, Filipinos, Puerto Ricans, and Portuguese were brought in large numbers to work in a Western economy based on sugar and pineapple.

The world's geo-political borders changed in the wake of World War I, World War II, the Vietnam and Korean Wars. As the wars began and ended, people were linked in different ways by new US and world politics. US militarization and colonization in the Asia-Pacific region affected the coming of the Vietnamese, Lao, Cambodian, and Hmong people. The same colonization process fused our relationship with Pacific Islanders from American Samoa, the Northern Marianas, the Republics of Belau and the Marshall Islands, and the Federated States of Micronesia. In short, US colonization throughout the Pacific has tied Hawai‘i to the USAPIJ.

This HMJ issue brings to light the relationship between the health of the USAPIJ peoples in Hawai‘i and in their home nations. Hawai‘i's health care and educational systems have been challenged to provide culturally competent services to the new Pacific migrants and to assist with the development of a greatly needed health professional workforce for the USAPIJ.

The articles in this volume begin with the members of the UH John A. Burns School of Medicine's (JABSOM) Social Justice Interest Group citing the current issue with Micronesian health care in Hawai‘i and arguing that "health care is a right." Four physicians, two of whom are indigenous Marshallese, then provide a detailed historical account of how the unintended financial, health care, and social consequences of the Compact of Free Association evolved. Current actions of the State, US Federal Government and local Micronesian communities are delineated and potential solutions are outlined. Continuing at the community level, attitudes and barriers to cervical and breast cancer screening in Chuukese and American Samoan women are highlighted. Diabetes control group interventions in the Marshallese population in Hawai‘i and the H1N1 epidemic in Guam are then reviewed.

Providing more medical care through distance learning in Micronesia and developing culturally competent curricula are provided in several solution-based articles. Research partnerships between the UH Cancer Research Center of Hawai‘i and University of Guam highlights the need to work as partners with Pacific health and educational institutions. There are several articles that speak to understanding and building new centers of learning in transprofessional learning paradigms with the UH Hilo College of Pharmacy and the UH JABSOM Department of Family Medicine and Community Health. Articles follow which describe the role of complementary medicine in American Samoa and health disparities found in Native Hawaiian homeless people.

Finally – and perhaps the most important point – these articles are authored by indigenous peoples, residents of the USAPIJ, medical students, resident physicians, and health professionals from the UH Health institutions. The blend of authors demonstrates that relevant partners, at various stages of career development and from many disciplines, are fully engaged in the necessary research and discussion to address the poor health care outcomes of the USAPIJ.

My hope is that reading this edition will stimulate new ideas and new collaborations as we all work together to address health disparities and to improve global health.

Health as a Human Right: Who is Eligible?

Aaron Saunders; Teresa Schiff; Katherine Rieth MA; Seiji Yamada MD, MPH;
Gregory G. Maskarinec PhD; and Sheldon Riklon MD

Abstract

In Hawai'i, health care is a commodity, not a human right: those who can afford it receive care, those who cannot often don't. As health workers and health professional students, we witness the consequences that public policies and budget considerations have on people, on patients, on the health of those that we are dedicated to assisting. Beginning with a case study, we examine the historical antecedents leading to the increasing migration of Micronesians to Hawai'i, examine the special relation that "Compact of Free Association" citizens have with the United States, and seek to reframe the political discussion regarding their health care status in this state as a debate in which medical considerations, not political or economic ones, should be the primary voice.

Introduction

> *Felisa Bernard was 43-years-old when she presented to a community health center in Hawai'i with advanced cervical cancer. Her doctors in her home islands, Chuuk State in Micronesia, had told her that they were unable to care for her. Hospitalized for acute stabilization and blood transfusions, she was enrolled in QUEST, Hawai'i's managed care Medicaid program. With radiation and chemotherapy, her cancer underwent remission. Within a year, however, it recurred and rapidly progressed. At the same time, she found that she had been disenrolled from QUEST. In mid-2009, the state had announced that as of September 1, 2009, people from the Compact nations would be moved from QUEST onto a program to be called Basic Health Hawaii, with no apparent provisions (at the time) for ongoing care for patients receiving cancer care or hemodialysis. Barely able to scrape together enough money to afford narcotic analgesics for her pain, despairing of receiving definitive care again for her cancer, Felisa returned to Chuuk to die. ("Felisa Bernard" is a pseudonym, but this is an actual case.)*

This case illustrates several points. First, no woman should die of cervical cancer today. Through Pap screening, pre-cancerous cervical lesions can be easily detected and treated to prevent progression to cancer. That Felisa did not have access to basic primary care reflects the inadequacy of health services in Chuuk State, Federated States of Micronesia.[1,2] While the medical providers in Chuuk would certainly like to offer the needed services, there are too few providers and they lack the resources (infrastructure, equipment, supplies, medication) to deliver the care necessary.

A second point: Felisa was unable to obtain the medical care that she needed (1) because of where she was from and (2) because she was poor. That is to say, in our society, health is not a human right. It is a commodity, something to be bought and sold. Health care remains unobtainable for those who lack the means to purchase health services. Over 45 million people in the United States do not have health insurance,[3] most of them US citizens, many of whom are working. In Hawai'i, for the past few years, we have been fortunate to have had a smaller percentage of uninsured than the United States as a whole. Nevertheless, in Hawai'i, we have a divide, a line ambiguously drawn between those regarded as somehow deserving coverage, as "local" and therefore belonging here, and those we don't recognize as having a right to be here. Micronesians find themselves excluded from our common humanity, do not possess the same rights as "us," and therefore can be allowed to die if they cannot pay for medical care. Many of us recognize that this is wrong, but when people realize that their situation here is hopeless and leave the state to die elsewhere, we can pretend that this isn't our problem: out of sight, out of mind.

A final conclusion from our example: public policy has human consequences. While this may sound like a truism, it points to where we need to exert our efforts. As health workers and health professional students, we witness the consequences that public policies and budget considerations have on people, on patients, on the health of those that we are dedicated to assisting, and therefore, we must improve our efforts to change public policy, to be able to deliver health care to all who need it.

Historical Antecedents

Why do we not give the same rights and privileges to everyone? Basically, many Americans do not want people from other countries to flock to the United States to take advantage of "our" social safety net. However, in what sense is someone like Felisa not the equivalent of a US citizen? After wresting the islands of Micronesia from Japan during the Second World War, the United States was awarded the islands by the United Nations as a "Strategic Trust" while promising to develop the infrastructure, health, and education of Micronesia with the goal of creating self-reliant nations. One of the first acts of the United States, however, even before the United Nations mandate was granted, was to begin testing nuclear weapons in the Marshall Islands, a program lasting from 1946 through 1958, with continuation through the present day of US missile testing in Kwajalein atoll.

In 1960, the United Nations issued a report that criticized the United States for not preparing Micronesians for self-government, beginning a process that culminated in political self-determination being offered to the Northern Marianas, Marshalls, Chuuk, Yap, Kosrae, Pohnpei, and Palau in 1977, resulting in three "Compacts of Free Association," (COFA countries, also known as the Freely Associated States): the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau (The Northern Marianas chose to join the USA as a commonwealth).[4] The Compacts give the US military US strategic denial over water, land, airspace of the Micronesian islands, strategic rights over an area of ocean about the size of the continental US. In the Marshalls, the United States continues to maintain, with an agreement through 2066, its military base at Kwajalein. In return, COFA citizens were granted broad migration rights, including the rights to reside and work without requiring a visa or labor certification, with no limitations of stay.[5]

It was the federal government that vowed to take care of the Trust Territories, and it was the federal government that tested weapons in the Marshall Islands. It is clearly unfair that the federal government does not compensate the State of Hawai'i for its QUEST expenditures on Micronesians, while at the same time impressing on Micronesians that the United States is the center of economic, political, and scientific power. The State of Hawai'i must work with the Federal Government to correct this situation.

There was hope for relief in the proposed health care reforms.[6] The health care bill originally passed by the House of Representatives included a provision to restore Medicaid coverage to all citizens of the Marshall Islands, Federated States of Micronesia and Palau living in the United States that was dropped by the United States in 1996. However, efforts to include the provision in the Senate version of the health care bill were unsuccessful, and the final reconciliation act passed by Congress and signed by President Obama in March 2010 deleted this provision.[7]

Nevertheless, in the coming years, more people from the Compact nations will be coming to the United States and in particular to Hawai'i. While not US citizens, the United States has controlled their fate for decades, and they are legally entitled to live here if they choose. Poor health status of COFA migrants parallel poor health indicators in COFA nations. Serious health disparities facing COFA citizens include a high incidence of cervical cancer, suicide, and an increasing burden of chronic illness on top of high prevalence of infectious diseases, including tuberculosis, filariasis, and Hansen's Disease.[8] "Medical migration" to Hawai'i is a direct result of the United States disinvestment in Micronesia beginning in the 1980s and continuing to this day. In a survey utilizing respondent-driven sampling that gathered information on 2,522 Micronesians in Hawai'i, the most frequently cited reason for migrating to Hawai'i was health care (35%). Education(33%) and employment opportunities (22%) were also commonly cited.[9] The Micronesian island states, even though they are militarily strategic to United States global interests, are unlikely to ever become economically self-sufficient, due to the limited eco-systems and population pressures, and the health of the populations on many of the islands continues to deteriorate. How should medical providers in Hawai'i respond to this challenge?

The Current Political Climate

Clearly, the current political climate is one of resource constraints. State budgets are being cut. The federal deficit grows. However, resources are not constrained for Wall Street bankers that plunge the world economy into tailspin through their speculation. Resources are not constrained for the military to wage wars on the other side of the world. Meanwhile, resources are constrained for the poor to receive medical care.[10] As Naomi Klein notes in *The Shock Doctrine*, disasters are used to justify the transfer of resources to the elites.[11] The state administration is using the state budget crisis to cut the state workforce, cut education for public school students, and cut health care for the poor.

Over the past decades, people from the COFA nations have been treated as part of humanity in Hawai'i – at least as far as QUEST is concerned. The previously cited survey of 2,522 Micronesians in Hawai'i found 60% to be enrolled in QUEST. Now that we are in a fiscal crisis, Micronesians are being told that they are no longer part of the family, that they can take their broken bodies and go home to die. That may be the budgetary mandate, the apparently "cost-effective" calculation. We understand the limitations imposed by our budget and that some rationing of limited resources must occur, and reiterate the federal government's ultimate responsibility in creating the Micronesian states as dependencies. The federal government should be implementing programs to address both chronic and infectious diseases in the Micronesia island states instead of ignoring its responsibilities. But let us make rational decisions based on medical criteria. When someone is ill, in danger of dying, they should receive the care that they need, without arguments over whose responsibility to pay is involved.

Reframing the Discussion

We believe that health is a human right. We believe in a system that emphasizes preventative medicine as opposed to one that is more reactive and costly. Therefore we conclude that Basic Health Hawaii will have a negative impact on the health and well-being of thousands of people in our community (one out of every four Micronesians is now living in the United States or its territories[12]) and will place a significant strain on other healthcare resources. Patients needing care for conditions such as renal failure and cancer will suffer, because chemotherapy and hemodialysis are life-sustaining treatments for many patients. Taking away these crucial treatments will result in death. While medical considerations should be our foremost concern in assessing the health status of COFA citizens residing in Hawai'i, economic considerations, perhaps surprisingly, support our position as well: the cost of one admission for acute renal failure can easily exceed the cost of many regular dialysis sessions. We realize that Basic Health Hawaii Plan was intended to save the state money at a time when federal contributions are scarce. However, it is clear that such a plan would do more harm than good. It is neither humane nor "cost-effective" to deprive patients of life-sustaining treatment; it simply shifts the burden of payment onto already resource-strained hospitals and community health centers. Attempting to force such patients to pay more out-of-pocket costs ignores why they originally qualified for QUEST: they do not have the means to pay for high healthcare costs. This will divert these patients to seek care from emergency rooms, resulting in more hospital admissions and higher cost-critical and palliative care at the end of life as these patients die prematurely. All of this will cost much more than it does to subsidize their QUEST enrollment.

We have a unique responsibility to continue to support our Micronesian population in Hawai'i. Having the highest population of Micronesians in the United States, we need to make sure that our promises are not abandoned, because we are dealing with lives. We must continue to do everything that we can to ensure that others have a chance at health.

Disclosure Statement

All authors participated in the conception and writing of this paper. None have any financial or other conflicts of interest.

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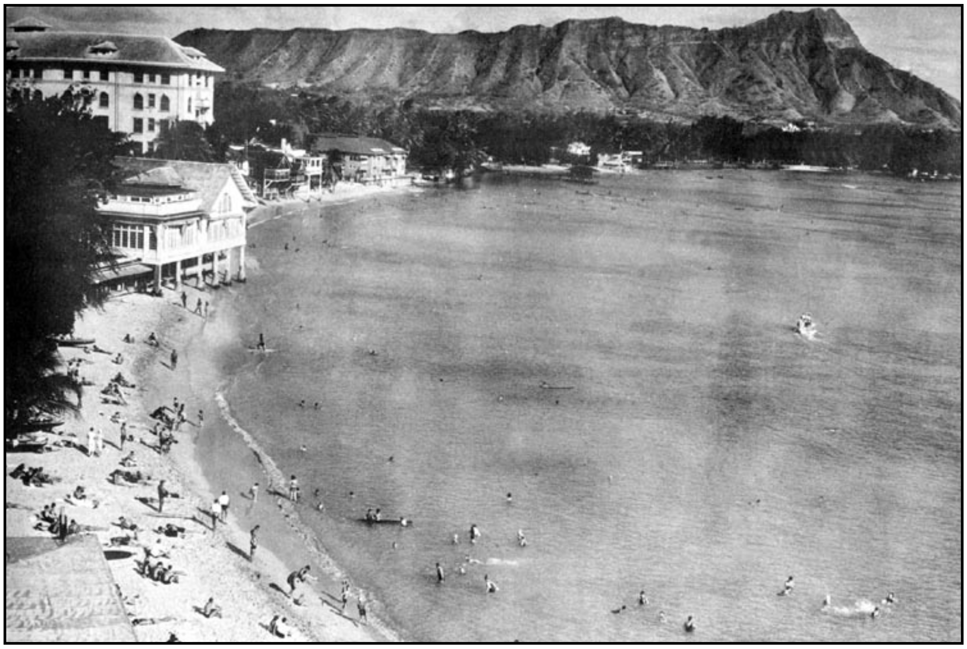


The “Compact Impact” in Hawai‘i: Focus on Health Care

Sheldon Riklon MD; Wilfred Alik MD; Allen Hixon MD; and Neal A. Palafox MD, MPH

Abstract

The political, economic, and military relationship between the former Pacific Trust Territories of the United States is defined by the Compact of Free Association (COFA) treaty. The respective COFA treaties allow the United States military and strategic oversight for these countries, while COFA citizens can work, reside, and travel with unlimited lengths of stay in the United States. The unforeseen consequences of the diaspora of the people of the COFA nations to the United States and its territories is called the “Compact Impact.” In 2007 the social, health, and welfare system costs attributed to the estimated 13,000 COFA migrants in Hawai‘i was $90 million dollars. The US federal government does not take full responsibility for the adverse economic consequences to Hawai‘i due to COFA implementation. The lack of health and education infrastructure in the COFA nations, as well as the unique language, culture, political, and economic development of the region have contributed to the adverse elements of the Compact Impact. The Department of Human Services of Hawai‘i, once supportive of the COFA peoples, now looks to withdraw state sponsored health care support. This paper reviews the historical, political, and economic development, which surrounds the Compact Impact and describes Hawai‘i’s government and community response. This paper attempts to understand, describe, and search for solutions that will mitigate the Compact Impact.

Background

Geography

Micronesia is comprised of a series of remote islands and atolls stretched for thousands of miles across the western Pacific Ocean. The total area of Micronesia is equal to twice the continental United States, however the total land mass of all the islands combined is approximately the size of the state of Rhode Island. Micronesia, from a geographical perspective, comprises the Marshall Islands, Pohnpei, Yap, Palau, Chuuk, Kosrae, Northern Marianas, Guam, Nauru, and Kiribati. From a Hawai‘i political and popular press perspective, the Federated States of Micronesia (FSM), which includes Pohnpei, Yap, Chuuk and Kosrae, the Republic of the Marshall (RMI), and Republic of Palau (ROP) are commonly referred to as “Micronesia”, and the peoples of these areas are “Micronesians”. Micronesia and Micronesian for the purposes of this paper will be limited to the ROP, the RMI and the FSM.

Population

The current population of the FSM is 107,000 (Chuuk: 54,000; Kosrae: 8,000; Pohnpei: 34,000; and Yap: 11,000). The RMI has 60,000 people and the Republic of Belau has 18,000 inhabitants. Since early 1990 there has been a significant migration of the people from the FSM and Marshall Islands to Hawai‘i, Guam, the Common Wealth of the Northern Marianas and the continental United States. It is estimated that more than 15% of the Marshall Islands population lives outside of the RMI.[1,2]

Health Indicators

Health Indicators vary across Micronesia but in general are quite poor with high rates of chronic and infectious disease. Infant mortality and life expectancy are poor when compared to US standards. Tuberculosis, Hepatitis B, and Syphilis are endemic in Micronesia.[3] Outbreaks of Cholera and Dengue fever are not uncommon. Hansen’s disease is still commonly diagnosed. Malnutrition and Vitamin A deficiency remain serious problems in many of the outlying areas.[4,5]

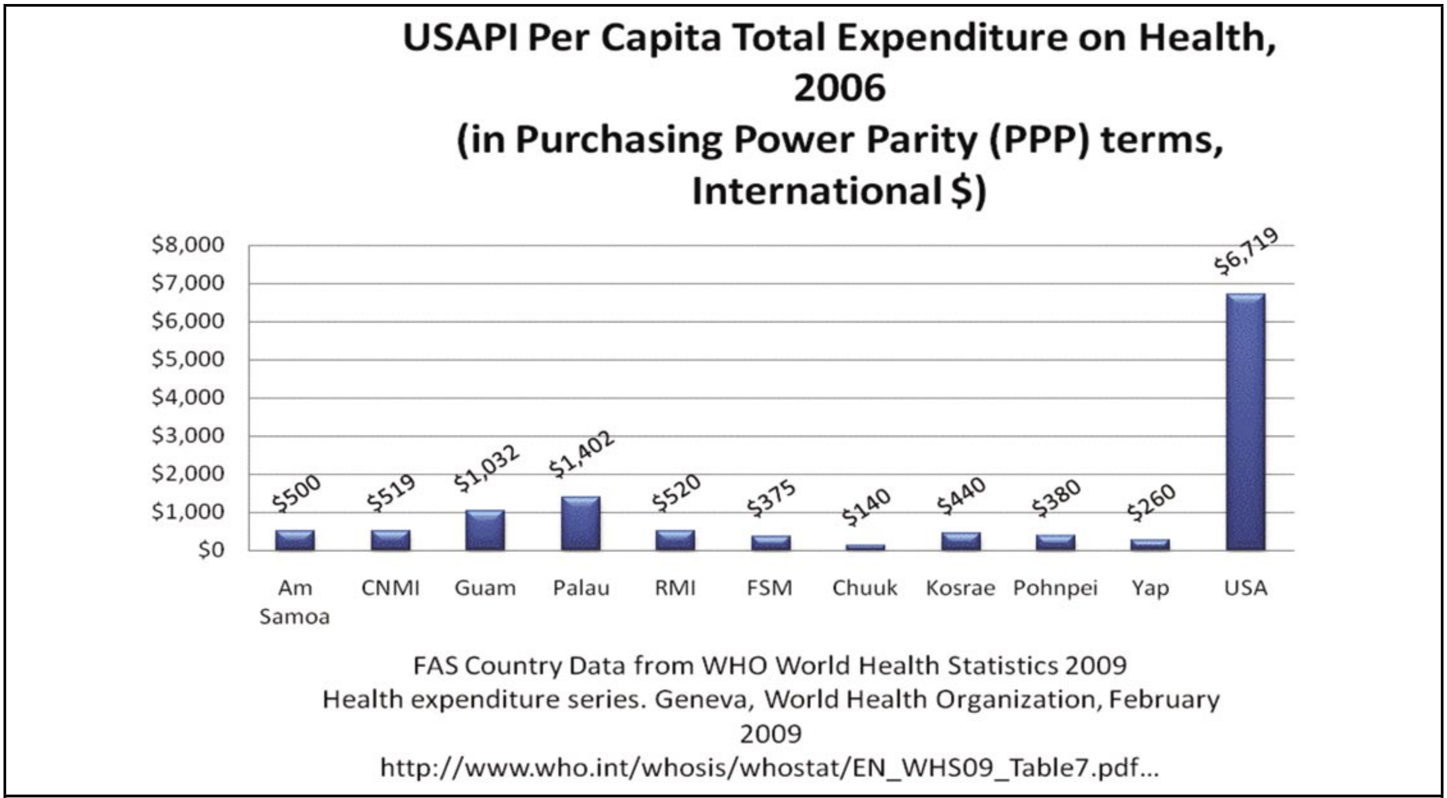
Infant mortality in the FSM is six times that of the United States. Life expectancy is 65 years in the FSM compared to 77 years in the United States. Rates of chronic disease contribute to life expectancy and are a serious and growing problem in Micronesia.[6] Many researchers have linked lifestyle illness to the transition from subsistence existence based on fishing and harvesting locally available foods to dependence on canned and preserved imported products.[7] Obesity is a significant problem affecting half of all men and women. Type 2 Diabetes rates are alarming affecting half of the people over 50 years of age. Smoking and alcohol consumption remain challenging problems and ischemic heart disease, stroke and cancer rates are all increasing. High rates of adolescent male suicide persist in the FSM and RMI. [8-12]

Youth lifestyle risk factors for non-communicable disease such as obesity, tobacco, alcohol, dietary intake and physical activity are extreme.[11] These factors suggest that the magnitude of diabetes, heart disease, cancers, hypertension, and stroke will be very high in years to come.[13]

Socio-Political History

The current poor health indicators of the COFA nations may be understood in context of the socio-political history of the US Associated Pacific. Much of the western Pacific was under colonial rule for the past four hundred years. Spain was present from the mid 1500s. Germany had a significant role beginning in the late 1800s to be replaced by Japan in 1914. The United States entered the Pacific in 1944 as part of WWII Pacific campaign. At the end of the war, the United States obtained administrative oversight of Northern Marianas, Palau, Chuuk, Yap, Kosrae, Pohnpei, and the Marshall Islands. Subsequently under the UN Security Council 1947 these areas became a “Strategic Trust of United States” called The Trust Territory of the Pacific Islands (U.S. –TTPI). As such the United States set up a military base in Marshall Islands (Kwajalein Missile Range) and began US Nuclear Weapons Testing Program (1946-58).[14,15] Beyond military and strategic opportunities for the United States, the main objectives of the Trusteeship Agreement were economic development and self–reliance of TTPI.

In 1977 the United States offered political self-determination to the Northern Marianas, Marshall Islands, Chuuk, Yap, Kosrae, Pohnpei, and Palau. The Northern Marianas chose to become a Commonwealth (Commonwealth of the Northern Marianas) in 1978. Federated States of Micronesia (FSM), Marshall Islands, Palau (1979-1986) chose to become Freely Associated States (FAS). The Freely Associated States formed a relationship with the United States governed by a Compact of Free Association (COFA). Each entity developed its own compact with United States. Typically economic development, grant support, and political relationships were negotiated. The Compact



Figure

with the FSM and RMI from 1986-2001 was extended to 2004 then amended for the period from 2004 to 2024.

Under the Compact of Free Association, COFA citizens received broad migration rights including the right to reside and work in the United States with no visa or labor certification and no limitations of stay (US citizens are also allowed the same privileges in the COFA nations). These special rights classify them as legal "migrants," not immigrants or refugees. Citizens of the FAS States were categorized by the Immigration and Naturalization Service initially as "Qualified Aliens." At the time of the COFA signing in 1986, citizens of the COFA nations were categorized by the Immigration and Naturalization Service initially as "Qualified Aliens", who have "Permanent Residence Under Color of Law" (PRUCOL), which means they are legal residents in the United States under administrative discretion. In 1996, through US administrative action, Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) changed PRUCOL to "Non Qualified Aliens" status rendering COFA migrants ineligible for federal public assistance — making them ineligible for federal Medicaid assistance. The Hawai'i state government's response to PRWORA was to continue the eligibility of health care for the COFA migrants under the state medical assistance (Quest) program.

The Motivation to Migrate

Poor health and educational outcomes persists in the COFA nations. Despite large amounts of investment economic development has not been uniform or sustained. A large out migration has occurred and continues. Although the actual numbers are difficult to quantify there are estimates of over 20,000 Micronesians in Hawai'i, Guam, and the CNMI.[16]

Approximately 7000 Marshallese reside in Arkansas and 4000 Marshallese in Costa Mesa, California. There are significant populations of COFA migrants in Oregon and Washington states. In Hawai'i there are now an estimated 15,000 -17,000 migrants, dispersed over O'ahu, Maui, Kaua'i, and the Big Island. One community of nearly 1000 Marshallese reside in a single geographic location, Ocean View, Big Island.[1,16]

Impact of Migration

As they migrate to Hawai'i, their health status mirrors the poor health indicators in their home nations. They bring significant burdens of infectious and chronic disease. For example, estimates are that migrants from the Freely Associated States in 2008 accounted for 17% of all new tuberculosis cases and 94% of all new Hansen's disease cases.

In 2007 a total of $918,458 was attributable to communicable disease services.[18-20] Data is incomplete for non-communicable diseases among FAS migrants in Hawai'i.

It is estimated by Hawai'i's Micronesians that 110 people are currently on dialysis and 130–160 are on chemotherapy. A 2004 National Cancer Institute study reported that nuclear related cancers have not yet all been expressed and predict that more nuclear related cancers diagnoses will occur after 2004.

In addition to direct clinical services, migrants may require health, housing, education, social services and in some cases legal services. Lack of appropriate language services by health care providers coupled with literacy and cultural issues may affect their ability to efficiently navigate the health care system.[19] Housing issues, overcrowding, and homelessness may worsen existing health status and complicate efforts to care for migrants from Micronesia.[16]

In 2007 Hawai'i Department of Human Services spent an estimated $37 million to cover housing and financial assistance. The Department of Health spent close to $7 million for direct health care and the department of education spent $53 million.[18,20]

The Economic Future of the COFA Nations

The July 2003 United States General Accountability Office (GAO) reported that a major goal of the first 15 years of the Compact (1986-2001) to assist the FSM and RMI to become economically self sufficient has failed. In fact, the FSM and RMI are currently economically dependent on the United States according to the report.[21]

The June 2006 United States GAO Report on the FSM and RMI Compact impact which includes a forecast on the second or amended Compact (2004-2024) is entitled: "Prospects Limited for the Marshall Islands and Micronesia." The 2006 GAO report states "the RMI and FSM economies show limited potential for achieving long term development objectives" and the report graphically depicts how the US Compact economic support is designed to decline for these Pacific nations by two-thirds between 1987 and 2023 (the beginning of the Compact period to the end of the amended Compact) Furthermore the 2006 GAO reports emphasizes that the design of the Compact trust fund, which is to replace the direct US economic assistance at the end of the 2023 Compact period for the RMI and FSM, will not be sustainable or support the present infrastructure.[22] These reports contextualize the economic, and therefore the health, education, and economic realities of US Policy in the Pacific.

The COFA migrants will likely continue to migrate to Hawai'i to benefit from the opportunities of basic health, welfare and education. There is a high likelihood that the out migration to Hawai'i and the Unted States may increase as the financial resources from the COFA decreases in the FSM and RMI. Currently these peoples have limited alternatives for adequate health care and education. The driving forces for out migrations include a lack of education and health infrastructure in the FSM and RMI, lack of job opportunities, displacement because of US Nuclear Weapons testing, and displacement because of rising waters from climate change. The pulling forces from the United States include military and private sector recruitment.

Federal Compact Impact Aid

It is estimated that Hawai'i spends over $90 million annually in uncompensated social, education, heathcare, and legal costs attributed to COFA migrants.[16] Under the federal Compact $30 million in aid annually is divided between Hawai'i, CNMI, and Guam. Hawai'i's share based on the 2000 US Census is 11.2 million.[16] However, as mentioned earlier, Hawai'i spends over $37 million annually on health care for COFA migrants in the public and government sectors. Due to the1996 PRWORA regulation, these expenditures are not reimbursed by the federal government. The actual cost to Hawai'i is difficult to evaluate because hospitals receive federal disproportionate share payments for uncompensated care.

Reports on the Compact Impact

The United States General Accounting Office published several reports in December 2001 regarding the Compact Impact. These reports recommend that the Federal Government take active measures to address significant Compact Impact issues in the upcoming negotiations of the amended Compacts of Free Association with the RMI and FSM which would extend to 2024. It is not apparent what actions were taken in the amended Compact negotiations to address issues of Compact Impact.[23,24]

The Compact Impact on health care in Hawai'i has been extensively described and studied in two existing Hawai'i state Reports. One is the July 2004 Hawai'i uninsured policy brief entitled "Impacts of the Compacts of Free Association on Hawai'i's Health Care System."[17] This report was developed by the Hawai'i Institute for Public Affairs. The second report is the Compact of Free Association Task Force Report whose committee was established by Hawai'i Legislature Senate Resolution Nos. 142 SD 1 in 2007.[18] This report was submitted to the 2009 State Legislature. One of the authors (NP) served on both these committees.

These two reports clearly articulate the history and situation with the Compact nations as it relates to health care in Hawai'i. Both reports note that the impact was initiated and is being sustained by US federal policies but more federal support is needed. Both reports above recommended that the State increase efforts to help the COFA migrant access and receive better health services in Hawai'i.

The 2009 Task Force Report recommends that the State should be proactive and increase all human services to the people of the COFA nations in a more organized, prevention-based and strategic way. The report recommends that the state of Hawai'i and US Congress should advocate and support measures to increase the availability and quality of health services in their home nations so that the necessity to come to Hawai'i for health services is decreased.

Basic Health Hawaii — A New Health Care program for COFA Migrants

The Compact Impact to health care has been substantial. In 2009, during a period of economic decline, Basic Health Hawaii (BHH) was developed by Hawai'i's Department of Human Services (DHS) as a means to save $15 million. BHH is a State medical assistance program, part of Hawai'i Quest, (Quest Expanded Access, Quest-Net, SHOTT) which is designed only for COFA migrants 19 years of age and older who are not eligible for federal medical assistance. The three part strategy DHS developed included: 1) Migrants who are not enrolled in QUEST by the start of BHH would be ineligible for membership 2) COFA migrants already enrolled in the Quest program would have a reduction in their health benefits package (including no dialysis coverage and no cancer treatment), and 3) the QUEST program would be capped at 7000 COFA members (there are currently about 7500 COFA members on Quest).[25] As a result of The Children's Health Insurance Program Reauthorization Act of 2009, implementation of BHH would not affect COFA children under 18 and women needing maternity services.[26]

DHS informed COFA migrants about BHH implementation less than two months before a proposed September 1, 2009 start date. A restraining order, filed by the Lawyers of Equal Justice on behalf of the COFA migrants, was enacted because due process for notification was not provided to the COFA migrants as delineated by Hawai'i state administrative regulations. DHS has subsequently been completing its due process regulations, and looks to implement BHH before July 1, 2010. Notably there has been no DHS or the State report assessing the short, medium and long term financial impact on the state healthcare system or the health consequences that would be expected for COFA migrants and the general population of Hawai‘i if BHH was implemented.

The Current Federal View

In September 2009 the US Department of State issued a letter to the FSM and RMI governments that the US Government is not responsible for the medical care of COFA Migrants in the United States. Each of the US states, territories and possessions will determine the availability of those services.[27]

Hawai‘i US Congressional Action 2007-2010

In 2007 Senators Daniel Akaka and Daniel Inouye introduced a bill into the US Senate, SB 1676, which would extend eligibility for Federal Medicaid benefits to COFA migrants. Representatives Neil Abercrombie and Mazie Hirono introduced a companion bill in the US House of Representatives in 2007, HR 4000 with the same intent. Neither of these bills were passed into law.

In early 2009, the Senate Finance Offices, with support and urging of Hawai‘i's Congressional Offices released the Children's Health Insurance Program Act of 2009; which made COFA children and pregnant women eligible for Federal Medicaid assistance.

In 2009 Representative Abercrombie, Senator Akaka and Senator Inouye put forward legislative language to be included in the Obama Health Care Reform Bill that would make COFA migrants eligible for federal Medicaid and to increase federal Compact Impact funding to Hawai‘i. The final versions of House and Senate versions of the Health Care Reform Bill did not contain the legislative language proposed by the Hawai‘i congressional offices.

Hawai‘i State Legislative Action 2007-2010

The State Legislature responded in a supportive fashion. There have been several hearings in late 2009 initiated by Senator Kalani English, Representative John Mizuno and Representative Suzanne Oakland-Chun to mitigate the actions of the BHH proposal as put forward by DHS.

In the current 2010 Hawai‘i legislative session there have been several health care related legislative actions introduced regarding COFA migrants. These include SB 2934, HB 2467, and HR 25. SB 2934 and HB 2467 sought to reinstitute or adjust the medical assistance health benefits for COFA migrants to the pre-BHH levels. HR 25 garnered Hawai‘i legislative support to request US Congress to reinstitute federal Medicaid assistance for COFA migrants.

COFA Community Action

In response to the BHH proposal, members of the COFA community in Hawai‘i organized to deal with the healthcare crisis facing their community. Existing community action groups including the Micronesian Community Network, Micronesians United, Nations of Micronesia, Micronesians United-Big Island, and Micronesian Culture Awareness Program activated. They developed public education and public awareness materials. Two newly-formed organizations, Micronesian Health Advisory Coalition and Pa Emman Kabjere (organization of Marshallese dialysis patients), recruited members from within their respective COFA communities as well as from interested Hawai‘i residents. Rallies were carried out at the Hawai‘i State Capitol, sit-ins at the Hawai‘i Governor's office, and public information presentations were held. Testimonies in opposition to the BHH were presented at legislative and DHS hearings.

Members of Pa Emman Kabjere and their attorney flew to the Marshall Islands to plead with the RMI legislature to address the BHH Members of the Micronesian Health Advisory, through the unrelenting support of the RMI-Honolulu Consul General Noda Lojkar, met with RMI President Jurelang Zedkaia to gain RMI government support. As a result of the meeting, President Zedkaia promised to discuss the issue with FSM President Emanuel Mori and ROP President Johnson Toribiong. A letter of support was to be drafted and submitted to the governor's office and respective Hawai‘i State government offices and the US Congress.

Discussion

The current situation for Micronesians attempting to access health care services in Hawai‘i has a long and challenging history. US strategic interventions in the region over fifty years ago began an historic relationship between nations and socioeconomic disparities that persist to this day. Regardless of the intertwining history and the binding compact between nations, current leadership at the state and national level have failed to find a credible method to defray the cost of healthcare for Micronesian people.

The diaspora will likely continue. The driving and pulling forces include the lack of health infrastructure in their home nations, opportunities in the United States, US military and private sector recruitment, displacement because of US nuclear weapons testing, and displacement because of rising waters from climate change. Failing to respond to the past and prepare for the future is not an option.

While solutions may not be simple, they should be guided by a moral compass that honors our previous commitments. United States presence in Micronesia has caused a steep slope of change to the cultural, economic and social fabric of Micronesia. The Micronesian infrastructure and people are challenged to meet this rate and quantity of change. While the focus has shifted to paying for health care for Micronesians in Hawai‘i, the primary goal should be to build health services in their home countries. For any dollar spent on health care in the United States, several dollars should be invested in health improvement and capacity building throughout the western Pacific.

Efforts to save money by reducing health coverage to Micronesians will likely result in increasing utilization of the emergency department for late stage disease which tends to be a very costly and non-cost effective strategy to provide care. Leaving vulnerable populations without access to adequate healthcare increases the burden and cost to everyone.

While the federal government is technically not responsible for health care in Hawai‘i as they interpret the Compact, there must be a recognition of the unique burden placed on Hawai‘i due to the geographic and cultural relationship to Micronesia. Also, it is clear that the federal government did not do any Compact Impact migration planning or projections before the Compact was implemented in 1986, or during its mid-course in the 1990's. Therefore the federal government was left reacting to unanticipated consequences of migration in 2001—at the end of the first 15 years of the COFA. Furthermore the Compact Impact was exacerbated by removal of COFA migrants from federal Medicaid in 1996. The onus of health care provision was then made the responsibility of the states and territories. Lack of planning and anticipation by the federal government has played a devastating role to migrant health care in Hawai‘i.

Federal responsibility may take the form of federal matching funds for state expenditures on Micronesian health care. This is not novel, as many state programs operate with federal matching funds.

Solutions to the current state health care crisis will require a comprehensive multi-faceted, multi-partnership approach to ensure success. Lasting solutions will need to draw from the community utilizing financial, cultural, health, education, social work, and urban planning expertise.

The Compact Impact intersects in the international, national, state, and community arena. The policy level must involve solution based strategies from the RMI government, FSM Government, ROP government, and US federal government (Administration, Department of Interior, Department of State, Department of Defense, Department of Veterans Affairs, Department of Health and Human Services, and Department of Energy). In the Hawai'i state level the administration, legislature and congressional representatives play a crucial role in supporting and advocating for strategic solutions. Most importantly the policies must work synergistically.

The bilateral relationship between the United States and the COFA nations over many years has set a precedent for working together. There has been a 2009 summit of the Secretary of Interior, Secretary of VA, and Secretary of Defense to discuss issues of the Insular Pacific. At the federal level there is a Pacific Insular affairs workgroup. There are functioning Compact implementation teams for the FSM and RMI.

Solutions include 1) reversing the 1996 PWORA law for COFA migrants, i.e., allow COFA migrants eligibility for federal assistance, 2) use an evidence-based, data driven methodology to determine the level of Compact Impact funding that is necessary to mitigate the impact to the state of Hawai'i and elsewhere, 3) increase COFA nations funding and technical assistance to ensure sustainable healthcare and education systems with high quality and standards, 4) invest in the prevention-type services for COFA migrants to increase future cost-saving, 5) utilize COFA community organizations in Hawai'i as resources and primary partners in planning and determining the appropriate interventions and strategies of their community, 6) follow the recommendations made by the Hawai'i legislative Compact 2008 committee, 7) hold the implementation of BHH until a complete financial and impact study can be completed

The COFA migrants/nations can be instrumental in the process by 1) preparing its citizens prior to their relocation to the United States through various community education and health literacy programs, 2) collaborating with appropriate state and federal agencies such as health, education, social affairs, and immigration for better navigation through the various agencies and programs, 3) continuing to educate its community on expectations and services required, 4) working with the federal government to understand their health and educational infrastructure requirements, and 5) to continue to be productive members of the respective US states of relocation.

Conclusions

The relationship between the United States and Micronesia that brings us to the current issue of health care payment for Micronesian migrants is complex. We are bound together by a common and sometimes unfortunate web of thermonuclear weapons testing, treaties, and promises of economic development that have not come to fruition. Micronesia today remains a series of countries with very poor health indicators. Micronesian migrants in Hawai'i have many unmet medical needs. A great state and nation is one that has the ability and know how to protect and assist the vulnerable and those in greatest need. Creative health policies that share the responsibility between the state and federal level for this historic relationship must be crafted soon. While short and long term solutions will need to include efforts both in Hawai'i and in Micronesia, Federal matching funds for directed state health expenditures may be an appropriate avenue forward.

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Understanding Cervical Cancer Prevention and Screening in Chuukese Women in Hawai'i

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Abstract

Background: Cervical cancer is the primary cause of death due to cancer in women in Chuuk State, Federated States of Micronesia. The Chuukese population is the fastest growing segment of the Micronesian community in Hawai'i. Little is known about the health beliefs or practices of this population in Hawai'i. The purpose of this project was to describe the knowledge, attitudes, and beliefs of Chuukese women in Hawai'i regarding cervical cancer prevention and screening.

Methods: Research assistants from the Chuukese community were recruited and trained as members of the research team. A culturally sensitive survey tool was developed and piloted by the research team and used to interview ten key informants from the Chuukese community in Honolulu, Hawai'i.

Results: There is limited knowledge about cervical cancer, especially the association with human papillomavirus (HPV). This may be indicative of a lack of health information in general. Fear, privacy concerns, lack of awareness and cultural beliefs represent the main barriers mentioned when discussing cervical cancer. Education, done in a group setting with other women, is the most recommended method of informing this community and improving preventive and screening services for cervical cancer in these women.

Introduction

Cancer ranks as the second leading cause of death in nearly all the United States Affiliated Pacific Islands (USAPI), which is comprised of the US territories of American Samoa and Guam, the Commonwealth of the Northern Mariana Islands (CNMI), the Republic of the Marshall Islands (RMI), the Republic of Palau (ROP), and the Federated States of Micronesia (FSM).[1] FSM is comprised of the four states of Chuuk, Kosrae, Pohnpei and Yap, with nearly half of the population residing in Chuuk.

The FSM, RMI and ROP have Compacts of Free Association (COFA) with the United States and are often referred to as the Freely Associated States (FAS). These compacts provide for financial assistance in health and education, military defense and uninhibited travel for COFA citizens to the United States in exchange for strategic access to lands and waterways.[2,3] Despite the compacts, the FAS struggle with inadequate resources and poor infrastructure in many of the basic systems to become self-sufficient, including health care and education, which has contributed to significant out-migration. Between 1990 and 1998, there was a 251% increase in the number of Micronesians in Hawai'i.[4] Most recent estimates put the number of migrants settling in Guam, CNMI and Hawai'i at 18,305, 2,100 and 12,215 respectively.[5] In Hawai'i, the fastest growing group of migrants is from Chuuk while the Marshallese remains the largest community.[6]

There is little in the literature regarding the issue of health disparities in the USAPI population. In 1998, the Institute of Medicine (IOM) published *Pacific Partnerships for Health* acknowledging that the peoples of the USAPI suffer tremendous disparities in nearly all health indicators compared to their counterparts on the continental US. These disparities are even more pronounced for the citizens of the FAS.[7] The IOM further reported in 1999 in *The Unequal Burden of Cancer*, that there are also significant disparities in cancer for ethnic minority groups and the poor.[8] The total USAPI population is small, approximately 460,000; consequently, the disparities may be hidden by the practice of aggregating Asian American and Pacific Islander data.[9,10]

In recent years, there has been effort to document and disseminate data on Micronesian health, particularly in the area of cancer.[6] With funding support from the Office of Minority Health and the National Cancer Institute, needs assessments were conducted and the growing cancer problem in the USAPI was finally documented. The findings, based primarily on mortality data, found cancer to be the second leading cause of death in nearly all the USAPI.[1] Additionally, cervical cancer was often the primary cause of cancer death for women in these islands.[11,12] Little is known about the health beliefs or practices of the Chuukese community in Hawai'i. The purpose of this pilot project was to describe the knowledge, attitudes, and beliefs related to cervical cancer prevention and screening of Chuukese women living in Hawai'i. Findings provide additional data to inform future research and interventions that will positively influence their cervical cancer prevention practices.[13,14]

Background

Worldwide, cervical cancer continues to be the leading cause of cancer death in women, especially in parts of Africa, Asia and the Pacific Region.[15] The majority of cervical cancers that are diagnosed in the United States are in women who have either never had a Pap smear or have not been screened within the last 5 years. Populations especially at risk include ethnic minorities and low-income women.[16] In the FSM, the utilization of cervical cancer screening is less than 15 percent.[11] There is very limited data addressing the cervical cancer screening practices of women from the USAPI residing in Hawai'i.

The project sought to 1) increase community capacity by training community research assistants and involving them in the research process; 2) develop and pilot test a culturally sensitive survey to collect information on cervical cancer prevention and screening; 3) conduct semi-structured interviews of key informants regarding cervical cancer prevention and screening among Chuukese women in Honolulu, Hawai'i, and 4) describe knowledge, attitudes, and beliefs of the women interviewed.

Methods

The protocol was submitted to the University of Hawai'i Committee on Human Studies and was granted exemption from the Institutional Review Board (CHS No. 16687).

Increase Community Capacity

Two women from the Chuukese community in Hawai'i were recruited as research assistants (RAs) for the project, and were involved in refinement of the survey tool and consent form, recruitment and interviews of the key informants and validation of the results.

Develop and Pilot a Survey Tool

A survey tool was developed using questions from existing reliable and valid tools considered appropriate for the purpose of this study and modified for cultural appropriateness.[17] The survey tool included open-ended and multiple choice questions about key informants' knowledge, attitudes, and beliefs about general health, health information and women's health. Additional questions focused on cervical cancer prevention and screening. Questions regarding personal screening practices were purposely omitted to allay fears about confidentiality and privacy.

Key Informant Interviews

Each research assistant (RA) recruited five women broadly representative of the Chuukese community in Hawai'i, for a total of ten key informants. Important in the selection of study participants was their leadership roles within their community thus qualifying them as key informants.[18]

Both verbal and written informed consent was obtained from the participants. Interviews were conducted primarily in Chuukese, as the RAs noted participants' responses in Chuukese, English or a combination of the two. Each interview lasted less than 60 minutes and participants were given a $20 gift card for their time and contribution to the project. The interview notes were compiled by the RAs and translated to English as needed. Clarification was provided by the RAs when necessary, particularly with regard to interpretations of cultural expressions.

Ten key informants were interviewed and answered all survey questions. The notes from the key informant interviews were evaluated using constant comparative content analysis. The data were grouped by survey questions and according to themes generated related to knowledge about cervical cancer, barriers and facilitators to screening. The results were compiled and a group meeting was held to validate and disseminate results.

Results

Ten Chuukese women currently living in Hawai'i consented to be interviewed for this study. Their ages ranged from 28 through 69, with a mean age of 49.5 years, (SD = 14.03). All participants had been born in Chuuk. The longest any of them had been in the United States was 15 years, with an average of 8.6 years (SD = 4.6), and one woman had immigrated as recently as 2008. All ten women spoke primarily Chuukese at home. About half of the women rated their comfort with the English language as good. All but one had health insurance and described their health as good to very good. They were all members of women's groups or church groups and all served in some leadership capacity, either in these groups or within their family structure.

General Health Issues and Health Information

Key informants were unanimous in naming diabetes as an important health concern for the Chuukese community in Hawai'i. All but three also mentioned cancer, especially women's cancer, as a major health concern. This was followed by hypertension, heart disease and tuberculosis.

Most informants (9 of 10) said that Chuukese women in Hawai'i were most likely to get general health information from health care facilities, naming specific locations, such as Kalihi-Palama Health Center and Kapiolani Medical Center for Women and Children, both of which employ English-Chuukese interpreters. Female family members were also cited as resources, particularly for women's health information.

All but one key informant said that the best way to disseminate women's health information was through a women's meeting or training. Radio programming was also mentioned though they cautioned this methodology because of the potential of hearing the message in the company of men as this would be inappropriate in their culture.

Knowledge, Attitudes and Beliefs

When the women were asked what most Chuukese women in Hawai'i think when they hear the term "cervical cancer," their responses generally focused on fear. *"Some are scared to have the Pap smear." "It makes some people scared to play around."* When asked what they themselves had heard about the disease and what caused it, key informants said it had something to do with sexual activity, including multiple partners, or poor hygiene. "*It is caused from lack of cleanliness, multiple sex partners, too much sex. Too much sex is not good*."

They sit too long in stream(s), go fishing during menstrual periods, sit on the ground, have sexual intercourse. The cervix opens during the menstrual period and when they do these things, infections enter the cervix and cause cancer.

I don't know the name in English, but in Chuukese they call [it] disease in women's wombs, "semwenin nenien nouch." I was told that when a woman has prolonged and profuse menstrual periods, it causes the cervix to become rotten.

When asked what they thought caused cervical cancer, factors associated with sexual activity including multiple partners and/or intercourse during menses were again cited. "*Having sexual intercourse during menstrual period, during postpartum period. Too frequent sexual intercourse with husbands/partners. Women got from husbands/partners."*

About half of the women stated that they weren't sure what caused cervical cancer and a few pointed at poor hygiene as the culprit. "*I do not know where it comes from or what causes. I want to know what cause. Does it affect the single or just the married ones? These are my problems." "Not being clean, never shower and clean the inside."*

Half of the women said they had learned about cervical cancer from their mothers or other female family members. Others said they or other Chuukese women had gained their knowledge from medical personnel or women who had the disease. *"I haven't learned about it and now that you ask, I am going to learn. I will attend if there is a training." "My mother taught me and told me that having babies too often can cause cervical cancer. This kind of mother-daughter sharing is usually done on a one on one basis."*

Only one of the key informants said she had heard of HPV; still, she had only *heard* of it and not *about* it. Half of the women confused HPV with human immunodeficiency virus (HIV) while the others said they had never heard of it. Most key informants believed that Chuukese women in Hawai'i would not know about HPV. *"They know what is HIV but not HPV,"* said one key informant. Similarly, none of the women had heard about the HPV vaccine. As such, they were unable to provide information as to whether women in their community had heard of the vaccine.

When asked what they had heard about Pap smears, those who had heard of the test (7 of 10) agreed that it was a female medical procedure, "*a test for women's private parts*."

Slightly more than half (6 of 10) disagreed with the statement that there isn't much people can do to lower their chances of getting cancer. Most women (9 of 10) agreed that cervical cancer can be prevented while 8 of 10 thought that it was caused by a virus/infection. All agreed that if found early, cervical cancer can be cured. Only 2 of the women didn't know that Pap smear was a test for cervical cancer.

Barriers

Key informants cited several reasons for Chuukese women in Hawai'i not getting Pap smears. The most frequent reason given (7 of 10) was that women do not want to show their "private parts" to anyone. "*Showing private area to others is disrespectful." "Embarrassment if someone sees their private area. This may be a cultural thing because we made it guarded so well." "Some husbands don't want doctor to see private parts of the wives. Some women don't want anybody, including doctor, to see their private parts."* The women also didn't want male doctors to examine them and stated that often times, the husbands would not allow them to go.

Other responses included fear of the diagnosis or of the unknown, not being interested in going for a checkup, and not wanting anyone to know that they are sick. *"They are scared. Some rather die than know that they have the disease."*

Facilitators

The most frequent response (7 of 10) provided as to how to get more Chuukese women in Hawai'i to get a Pap smear was to explain the procedure and its importance to the women themselves. Key informants stressed that this explanation must be provided by a woman, as only women should address other women concerning such sensitive issues. Women's meetings were cited as a venue through which many Chuukese women could be reached. *"Train or provide awareness to them about the disease and where to go for help. The training can be done in each organization or train the leaders…and they will train the others."* Some key informants also mentioned that Chuukese men should also be educated, but again, this education must be provided by someone of the same sex. "*If the husband understands the importance, then they can let their wives go for Pap smear*," said one key informant. "*This kind of test, both wife and husband have to agree on whether she goes or not*."

Discussion

The results of key informant interviews indicate limited awareness regarding cervical cancer prevention and screening among Chuukese women living in Hawai'i. Much of the information is shared amongst female family members based on what the older women had heard or were taught themselves. Not having equivalent translations for commonly used terms or phrases in Chuukese may contribute to misconceptions.[19] There is no translation for "cancer." The Chuukese term for "cervix" is *awen enu* which translates to *mouth of the ghost*, which is thought to be an old term and likely used to disguise the topic. The phrase *semwenin nenien nouch*, which translates to *sickness of the womb*, can be misleading, as symptoms associated with general female reproductive tract disorders and infections such as bleeding and discharge are also commonly used to describe cervical cancer. This may explain the large number of informants who believe that cervical cancer is caused by *paiking* (infection), yet the relationship of HPV to cervical cancer was unknown. The apparent lack of association between HPV and cervical cancer may also be indicative of a more generalized lack of health information in Chuuk, emphasizing the need for increased health literacy efforts in this population. In general, these findings are quite similar to studies done with other minority populations or immigrant groups.[20,21]

Perceived barriers to screening include fear and shame. A previous study of Chuukese women conducted in 2006 found that the term "cancer" was equated with death.[19] Pap smears, recognized among most of the key informants as being a screening method for cervical cancer, are regarded as shameful because of the necessary exposure of the private areas. Additionally, the diagnosis of cancer itself may bring shame to oneself and her family as it might be a reflection of inappropriate sexual behaviors.[13,20,22] Despite this, key informants expressed optimism that if accurate information regarding cervical cancer and the importance of screening were presented to Chuukese women in a culturally sensitive manner *(i.e.,* by a female health professional, in a women-only setting), the women would be receptive and, perhaps, more likely to seek appropriate medical attention. The women from the current study unanimously agree that if detected early, cervical cancer can be cured. These ideas were also noted by a recent study conducted in Hawai'i with similar groups of women.[23] The importance of educating the husbands was also mentioned by several of the women, an approach not commonly mentioned in the literature.

Unlike other minorities including some Hispanic and Southeast Asian groups, fatalism or "God's will" was not brought up by the women as a barrier to screening, despite the church having a significant role in their lives.[13,20] Language access and lack of insurance, major barriers for other immigrant groups, were also not cited by any of the women interviewed.[13,14,24] Nine of 10 women in this group were insured and most felt comfortable with English. Furthermore, the facilities mentioned as preferred sources of information have Chuukese interpreters on staff.

The sample size for this pilot project was small and the key informants selected may not be truly representative of the population. The study methodology was successfully implemented however and can serve as the foundation for a more comprehensive assessment of the knowledge, attitudes and beliefs of the larger community, as well as of other Micronesian groups in Hawai'i and the USAPI. The research assistants who were trained in interviewing techniques may be trained in focus group facilitation, thus continuing to build the capacity of the community to participate in research.

Conclusions

The results of the study should be validated before practice implications are made. However, providers who care for Chuukese women in Hawai'i can be educated regarding the importance of privacy and sensitivity to gender issues. Correct information related to common misconceptions is needed to provide accurate information. This information can then be shared with the next generation of women, utilizing the oral traditions of their culture. This study highlights the cultural emphasis on gender specific approaches for delivery of education and screening services, something less common in the mainstream U.S. population.

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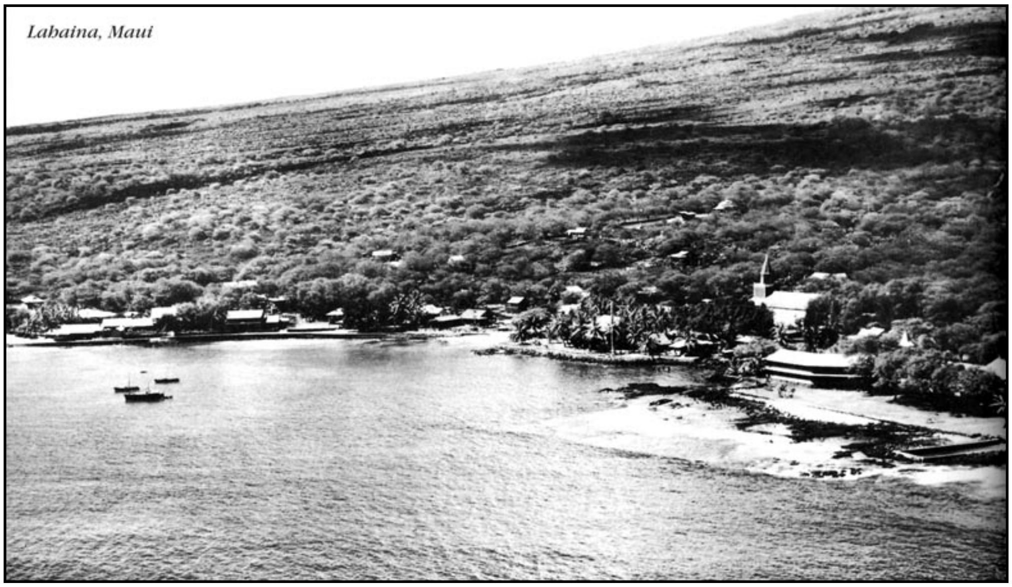

American Samoan Women's Health: Experiences and Attitudes toward Breast and Cervical Cancer Screening

Lisa Wu MD; Elaine Colby MD; Alisi Iongi-Filiaga; and Gregory G. Maskarinec PhD

Abstract

Background: *Cancer is the second leading cause of death among Samoan women and, compared to women of other ethnicities in the United States, Samoan women present at earlier ages with advanced stages of both breast and cervical cancers. Our goal was to gain a better understanding of issues that may prevent women in American Samoa from using available cancer screening resources.*

Methods: *Following approval from the Office of Samoan Affairs, we conducted four focus group sessions, in which a total of 55 women from urban and rural sites participated. Women were asked about their perceptions regarding barriers, knowledge, and past utilization of available cancer screening services.*

Results: *Among the participants, professional women were more aware and had higher utilization rates of age-specific screening services. Barriers to health care services included lack of awareness and fears regarding poor confidentiality.*

Discussion: *Our findings, which have been reviewed by participants, highlight the further need for outreach and education about female cancers. Screening rates could be increased and all services may benefit from increased collaboration between the American Samoa Department of Public Health and Lyndon B. Johnson (LBJ) Tropical Medical Center. Our findings underline a need for additional staff training in professionalism, particularly in the areas of confidentiality and respect for patients.*

Background

Cancer is the second leading cause of death among Samoans,[1] and breast and cervical cancer are among the most common types of cancers affecting Samoan women. Although data are not available from American Samoa, breast cancer accounts for about 22% of all cancers diagnosed among Samoan women in Hawai'i and about 27% of all cancers of those in Los Angeles.[2,3] Samoan women are more likely than are Caucasian women in the United States to receive a diagnosis of cancer at a younger age and to be diagnosed with cancer (all cancers) after metastasis has occurred.[4] Of those women diagnosed with invasive cervical cancer, over 50% have not received Papanicolau (Pap) smear screening within the previous five years.[5,6]

Mammograms and Pap smears are effective screening tools in the detection and prevention of invasive breast and cervical cancers. However, many barriers exist in providing these services to women in American Samoa. Previously identified barriers include differences in the level of awareness of the health benefits of screening, a shortage of adequately trained health care professionals (especially females), lack of supplies, and a lack of resources for the appropriate evaluation of specimens and radiological studies. Culturally based barriers including modesty and fear of the stigma associated with visiting an Obstetrics and Gynecology clinic, popularly associated with family planning and birth control, are significant.[7,8]

In this article, we provide background on the United States relationship with American Samoa and report on our effort to gain more information about the barriers to breast and cervical cancer screening in the territory.

Current Breast and Cervical Cancer Screening Services in American Samoa

American Samoa is located in the South Pacific 2,600 miles south of Hawai'i. It has a total land area of 76 square miles and a population of approximately 55,000, of which females number around 30,000. Female life expectancy is 78 years, compared with 80 for women in the United States.[9] About 50% of the population is under the age of 20 and nearly 60% of the population is below the poverty level. It has been governed by the United States since World War II and is currently a US territory, with representation but no vote in Congress. Residents of American Samoa hold US passports and are free to migrate to Hawai'i and other states. All residents are considered insured as all are eligible for Medicare and Medicaid services; there are no other insurance providers.

Until 1998, the Territorial health system was a unified, government-operated, centrally controlled system, which offered health promotion, disease prevention, environmental protection and acute care diagnostic and treatment services. All health services were delivered through the Health Department, which included the island's only hospital and the Division of Public Health. In 1998, the Executive Branch initiated a division between the Hospital and Public Health by creating the Hospital Authority as a separate entity from the government.

The American Samoa Department of Public Health, with support from the US Centers for Disease Control and Prevention (CDC), operates the Breast and Cervical Cancer Early Detection Program (BCCEDP). This program supports nursing and administrative staff offering free yearly screening mammograms to all women over age 50 and free Pap smears to all women. Pap smear specimens are sent to Hawai'i for interpretation, and mammograms are read by LBJ radiologists. Program staff provides initial screenings in clinics and travel to two rural villages on Tutuila, the main island of Samoa, to perform Pap smears and arrange for appointments and transportation for mammograms. Screenings are also performed at the public health clinic in the village of Tafuna. From January 2003 through December 2007, the BCCDEP program reports that 1837 women received Pap smears and 717 mammograms.[10] When abnormal Pap smears are detected patients are contacted and referred to the physician gynecologist, while patients with abnormal mammograms are referred for possible surgery, as mastectomy is the only treatment option for breast cancer in American Samoa.

In addition to the BCCDEP operated by the Department of Public Health, the gynecology department of LBJ Hospital also performs Pap smears and mammograms. Pap smears are offered at a cost of $25 and are interpreted by the hospital's pathologist. However, data from these patients are not readily communicated to the Department of Public Health. Pap smears are also provided as a part of routine prenatal health care by both Public Health and LBJ Hospital, but these are not communicated to one another.

Objectives

Our goal was to elicit attitudes, beliefs, practices, and experiences of American Samoan women regarding breast and cervical cancer and the associated screening tests in the context of the ongoing health strategies currently operating in the Territory. A better understanding of these issues could contribute to improved screening services in American Samoa.

Methods

Following approval from the University of Hawai‘i Institutional Review Board (CHS #15312) and the Office of Samoan Affairs, we conducted four focus groups. Village chiefs active in the Office of Samoan Affairs helped identify two villages, while women's organizations helped select two professional groups. A total of 55 women participated in these focus groups, held on the main island of Tutuila. In each session, the authors conducted open-ended ethnographic explorations of issues that may prevent women in American Samoa from using available cancer screening resources. A bilingual research assistant was present for note-taking and all group sessions were audio-taped. To maximize the number of women participating in our study, the only exclusion criteria was age less than 18 years old. The four groups of women represented various socioeconomic backgrounds. Most participants in the two village groups did not work outside the home. The two groups of "professional women" were a group of nursing students and a group of business professionals from a communications company. These participants have all had education beyond high school. We included our younger cohort of professional women to gauge whether their education and involvement in the medical field would affect their awareness of recommended screening practices. The facilitator was not present during these two professional groups as participants were fluent in English. The women in the village groups received a small honorarium for their participation, recommended as culturally appropriate by the local facilitator. Both rural meetings were initiated by village chiefs, who being male, were then asked by the participants to leave before the discussion began, as did the male researcher. The nursing students and women in the communications firm did not receive monetary compensation, but instead were provided with refreshments. All participants signed a consent form, available in both English and Samoan, which was explained to participants in the rural groups in both languages by the professional facilitator and in English to the professional groups. A summary of our findings was prepared in both English and Samoan and distributed to all participants.

Results

Only 16% of all 55 participants had undergone mammography (see Table 1 for results by individual group). Awareness of mammography was 100% in both professional groups compared to 57% and 75% in the village groups. Similarly, more women in the two professional groups than the village groups were aware of Pap smear screening and had undergone Pap smear screening. Utilization rates of clinical breast exam (CBE) and mammography in village groups were higher than that of our professional groups. Fifty percent of women from our village focus groups versus 15% from our professional group had utilized CBE and 25% vs. 7% had utilized mammography.

Breast Cancer: Overall 78% of the participants responded that they had some knowledge of mammographic screening for breast cancer. Only nine of those interviewed were over the age of 50, the age at which free mammograms are offered by the Department of Public Health and nine participants reported having had a mammogram themselves. Not all nine of the women who received mammograms were older than 50, possibly because it may have been a diagnostic rather than a screening mammogram, a distinction not explored. Twenty-five percent of the village group participants had utilized mammography compared to 7% of women in the professional groups. However, 100% of the professional group was aware of mammography compared to 57% of the village group women. Seventy-one percent of the women had heard of a CBE and 33% had undergone a CBE, though it may be noted that the US Preventive Services Task Force no longer recommends teaching CBE, rating it a "D" - "moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits."[11] As with mammography, more women in the professional group were aware of the clinical breast exam than the village group (70% vs. 64% respectively) but a greater number of village women reported having had a clinical breast exam (15% in the professional group vs. 56% in the village group).

Regarding screening for breast cancer, many participants reported feeling uncomfortable and embarrassed with male doctors performing CBE. When asked about attitudes regarding mastectomy and lumpectomy as treatment of breast cancer, many women agreed they would agree to undergo mastectomy if it would be a curative treatment, but several responded that they would decline surgery and rely on "God's will" for a cure. Almost all women responded that they would agree to undergo a lumpectomy and radiation — the recommended treatment for early breast cancer in the United States, but currently the only treatment modality available on island is mastectomy.

Table 1.— Awareness about and reported utilization of breast and cervical cancer screening. Utilization of services defined as used at least once.

Group	# of partcipants	Age range, (median)	Clinical Breast exam, aware (%)	CBE utilized, (%)	Mammogram aware, (%)	Mammo Utilized, (%)	Pap smear, aware	Pap smear, utilized
Village # 1	12	22-73 (41)	10 (83)	6 (50)	8 (67)	5 (42)	10 (83)	8 (67)
Village # 2	16	19-74 (41)	8 (50)	8 (50)	8 (50)	2 (13)	11 (69)	9 (56)
Professional # 1 (Students)	10	20-31 (22)	10 (100)	0	10 (100)	0	10 (100)	5 (50)
Professional Group # 2	17	26-57 (36)	11 (65)	4 (24)	17 (100)	2 (12)	17 (100)	17 (100)

Cervical Cancer: Eighty-seven percent of the women interviewed reported that they were aware of the Pap smear screening test for cervical cancer, and 71% responded that they had undergone a Pap smear test themselves. Participants reported that Pap smears are routinely obtained during prenatal care, which is fairly well attended.

Traditional practices: Prayer was cited as the most common non-medical method used to improve a serious medical condition. Most women were familiar with traditional Samoan medicine in the form of drinks and bandages made from medicinal plants, but none reported practicing these methods or knowing how to prepare them. Unlike participants in a previous study, no one suggested that cancer might result from departing from the traditional Samoan way of life (Fa'a Samoa).[12]

Health Care: Participants expressed frustration when asked to describe past experiences with the health care system in American Samoa. Many reported significant concerns regarding the confidentiality of personal health information in the medical clinics. Exam tables in the OB/GYN clinic are partitioned only by curtains; everyone in the room can overhear the patient's conversation with her doctor. Inappropriate, vulgar language was reportedly used by nurses and staff. Also cited were complaints of long waits for clinic appointments and poor communication between doctors and patients. Women felt that some doctors did not listen to their histories adequately, did not explain their medical problems to them or give them information on the medications they were being prescribed. In addition, many women reported a lack of confidence in the quality of the care offered. Participants felt that certain people received preferential treatment by the hospital staff depending on their status. Most women reported that if their families could afford the costs, they preferred to travel to Hawai'i, California, or New Zealand for medical care. Some participants were pleased with the care from certain physicians in the area, but had difficulties arranging appointments with specific doctors.

Limitations of This Study

Clearly, the results of our four focus groups cannot be generalized to the entire population of American Samoa nor are they necessarily applicable to Samoan women living elsewhere. However, our results are comparable to Mishra's (3) cross sectional analysis in regard to CBE utilization (50% vs. 55.6%). At the time of their study no mammography results were available for their American Samoan participants; our mammography results show 16% utilization overall. Published data from elsewhere in the Pacific are not available from the World Health Organization, whose most current compilation has no entries for Fiji, Kiribati, Marshall Islands, Federated States of Micronesia or Palau.[13] Most of our participants were not eligible for this screening, as most were under age 50. Our Pap utilization rates are higher than Mishra's (5) cross sectional data (71% vs. 64%).

Another limitation of our study is our inability to compare directly utilization of age-specific screening – mammography and CBE – between our village and professional groups, given the age differences of participants. Thus, only 16% of all 55 participants had undergone mammography, most from our village groups (50% vs.15% in village vs. professional groups respectively). However, most participants were younger than 50 years old and thus ineligible for the free screening mammograms provided by the Department of Health. The median age of both professional groups was significantly younger than the village groups and only one person in the two professional groups was over 50 years old. That only half of Professional Group #1 had undergone a Pap smear can be explained by the group's age range and median age being significantly younger than that of Professional Group #2, coupled with the fact that the majority of Pap smears in American Samoa are performed in conjunction with prenatal care rather than in routine screening visits.

Discussion

Our results highlight the need for further public health outreach and education in women's cancer screening efforts, especially in village populations. Within our two professional groups, all of the women were aware that mammograms are available for breast cancer screening and that the Papanicolau (Pap) smear is used to screen for cervical cancer. All of the women in professional group 2 had at least one Pap smear in their lifetime. This is compared with only 75% awareness in the village groups and even lower rates of utilization. Our findings suggest that professional women have better access to medical care and services, and that higher levels of education increases health literacy overall. In addition, it is also important to note that most of the professional women interviewed have lived abroad in New Zealand, Australia or USA, countries where screening practices are preformed widely and at frequent intervals, while only some of the village women have done so.

Future Directions

In 2002 the World Health Organization published a report detailing recommended goals and screening strategies for cervical cancer in developing and middle income countries. According to this report, key elements to a successful cervical cancer screening program include: a strong commitment and collaboration among the government and health care systems to the screening program, adequate training of health care professionals in obtaining and interpreting Pap smears (including cytopathologist technicians interpreting smears), targeting the correct age range within the population (ages 35-54), and arranging effective and adequate follow-up.[14] The results of our study reveal areas of potential improvement in the American Samoa cervical cancer screening program: 1) improved collaboration between the Department of Public Health and the Lyndon B. Johnson Tropical Medical Center in regards to sharing patient data; 2) centralizing and standardizing the collection and interpretation of Pap smears; 3) ensuring that the correct age group is targeted for screening; 4) expanding visits to more villages across the island in order to screen higher numbers of women; and 5) the need for additional staff training with regard to professionalism and confidentiality.

Improvement in knowledge regarding available cancer screening and access to them remains our goal for all women in American Samoa and American Samoans abroad. Our study highlights some of the barriers that need to be addressed to improve the health standards and decrease disparities amongst American Samoan women when it comes to early detection of breast or cervical cancer. Partnerships, such that of the American Samoa Community Cancer Network[15] with the Department of Health and LBJ hospital, must coordinate efforts to improve the perceptions of their community regarding importance of cancer screening and professionalism of health care workers. The results of this study have been provided to our participants and to the involved health entities with hopes that future studies will document positive changes in cooperation, awareness, and improvement in the health of Samoan women.

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Perceptions and Use of Complementary and Alternative Medicine in American Samoa: A Survey of Health Care Providers

Sara L. Krosch

Abstract

Purpose: *American Samoa health care providers' use and perceptions of common complementary and alternative treatments, with a focus on traditional Samoan healing for women diagnosed with breast cancer or cervical cancer, was investigated to inform the development of the first locally produced women's cancer prevention radio drama and the first cancer patient navigator program in the US Territory.*

Methods: *A 10-item self-administered survey was completed by a total of 47 health care providers employed at the Lyndon B. Johnson Tropical Medical Center and the American Samoa Department of Health Breast and Cervical Cancer Early Detection Program.*

Findings: *Comprehensive health care is limited in American Samoa, especially cancer treatment. Dissatisfaction or disconnection with Western medicine leads some patients to seek complementary or alternative health care from traditional Samoan healers who provide massage and herbal remedies. Health care providers in American Samoa use and recommend many complementary and alternative medicines (CAM) popular in the United States. The most common CAM recommended to patients is exercise (81%), diet modification (81%), prayer (36%), massage (36%), support group participation (26%), and relaxation techniques (19%). Traditional Samoan healing methods are unique CAM that 19% of mainstream health care providers have used, and 17% have recommended these techniques to patients. Most survey respondents believe traditional Samoan healing methods have a harmful effect on patient quality of life and 72% have advised a patient to discontinue using this type of CAM. While most providers feel that the majority of American Samoan patients use traditional healing methods to complement Western healthcare, 55% are aware of a breast cancer or cervical cancer patient utilizing these techniques as an alternative to hospital treatment. A provider's ethnicity, gender, age and years of professional experience appear to be indicators of different CAM method endorsement and patient consultations concerning CAM use.*

Conclusions: *CAM use is likely to continue in American Samoa as long as health care deficiencies exist. Most American Samoa health care professionals accept common CAM in the United States, but local providers are more likely to endorse traditional healing methods than their mainland counterparts. Little is known of the impact different CAM have on quality of life, especially amongst cancer patients. The majority of American Samoa health care providers request more information about traditional healing which would facilitate more comprehensive medical documentation and patient care.*

Introduction

Cancer treatment is limited to surgery in the United States Territory of American Samoa. Patients who can afford mainstream treatment are referred off-island to Hawai'i for chemotherapy or radiation. Those who cannot afford off-island care remain in American Samoa. In both cases, patients may visit a traditional Samoan healer, a *Fofo or Taulasea,* for complementary or alternative therapy. The use of Samoan healers is believed to be motivated by lack of affordable treatment or a distrust or dissatisfaction with hospital care. This results in a competition between the two medical systems with some cancer patients foregoing mainstream medical treatment and utilizing only traditional methods.

In 2009, the American Samoa Community Cancer Coalition investigated local health care providers' use and perceptions of common complementary and alternative treatments with a focus on traditional Samoan healing for women diagnosed with breast cancer or cervical cancer. In particular, the study aimed to determine which common complementary and alternative therapies health care providers endorse; their awareness of cancer patients utilizing traditional Samoan healing methods as complementary or alternative treatment; and their opinions of the safety of indigenous medicine. These and other research findings informed the development of the first locally produced cancer prevention radio drama, *Tasi le Ola* (One Life) and the first cancer patient navigator program in American Samoa.

Complementary and Alternative Medicines

Complementary or alternative medicine (CAM) for cancer is any practice or product that is not thought of as standard medical care based on scientific evidence such as surgery, chemotherapy or radiation therapy. Complementary medicines are used along with standard medical treatments whereas alternative therapies are scientifically unproven remedies and techniques used in place of standard medical treatments.[1-4] Most patients use complementary therapies along with standard medical therapy, while a minority utilizes only alternative treatments.[3,4] Complementary therapies have been found to improve patient quality of life,[1,3,4] patient satisfaction,[1,4] and the physician-patient relationship,[4,5] whereas alternative therapies may conflict with mainstream treatments[1,3] and be potentially harmful.[1,3-6]

The use of CAM and CAM practitioners is rising in the United States.[7] Robinson and McGrail[8] report that over half of all patients requiring health care use some type of complementary or alternative therapy. Cancer patients are more likely than the general population to use CAM,[9] especially those diagnosed with breast cancer.[10,11] The prevalence of CAM use amongst breast cancer patients in the US is as high 80%.[12] The most common reasons US cancer patients utilize CAM therapies are to reduce psychological distress;[1,3,4,9,11,13] improve quality of life;[3,4, 11-13] gain more control over personal health;[1,4,7,11,13] manage symptoms and side-effects of treatment;[1,4,9,11] prevent cancer recurrence;[3,9,11,13] and to boost the immune system.[11,13]

Traditional Samoan Healing as CAM

Samoan healers can be classified as CAM practitioners who practice traditional massage (*Fofo*) or who prescribe herbal remedies and have some training in diagnosis and treatment of illnesses of natural or supernatural origins (*Taulasea*). Many traditional Samoan healers are women who treat specific illnesses commonly afflicting women and children.[14,15] Traditional Samoan herbal remedies have been documented but the medicinal value of most catalogued plants has not been scientifically proven, and dosages are dependent on the illness and the particular healer.[14] Some herbal remedies have been found to cause harmful reactions in cancer patients receiving anesthesia for surgery or undergoing chemotherapy.[4] Conversely, the benefits of massage therapy are well documented[4] and include reduced anxiety,[4,16] pain, nausea, and fatigue,[4] and improved immune function, sleep patterns, and quality of life.[16]

Some researchers have found CAM use to be motivated by a distrust or dissatisfaction with mainstream, Western medical care and institutions.[1,7,9,17] According to a 2007 American Samoa health insurance feasibility study[18] commissioned by The Office of the Governor, a large percentage of the population is dissatisfied with current health care services offered at the Territory's only hospital, the Lyndon B. Johnson Tropical Medical Center (LBJ), citing numerous grievances including no medication or treatment available, long wait times, crowding, expensive fees, and poor quality of care. These criticisms, coupled with 61% of the population living below the US Federal Poverty Level,[18] may encourage use of CAM therapies provided by traditional Samoan healers.

CAM use may not always reflect negative attitudes towards conventional medical treatment, but rather an inclination towards self-care,[7,13,19] holistic treatment,[7,19] or a desire for therapy compatible with cultural beliefs.[6,19] In a study of 1,834 Samoans residing in American Samoa, Hawai'i or Los Angeles, 41% had previously sought care from a traditional healer for an illness and of these 67.7% report they would see an indigenous healer for a tumor.[6] Furthermore, most Samoan women age 40 and older with no personal history of cancer, despite having positive to neutral experiences with Western health care, report they would use traditional Samoan medicine as a complementary or alternative cancer treatment.[20]

Aitaoto, et al.[21] explain that Samoans differentiate between *palagi* (white person) illnesses, those that can be explained and cured by Western medicine, and *ma'i Samoa*, illnesses that require traditional Samoan healers. Samoans use traditional remedies and traditional healers for all but the most serious illnesses[22] often to treat symptoms. Culture-specific beliefs concerning the interpretation of medical conditions play a key part in determining the choice of appropriate treatment and type of health care provider needed, and they may also hinder cancer screening. Mishra, et al. found that women who said they would seek treatment from a traditional healer if diagnosed with breast cancer were less likely to have a mammogram.[23] Many biomedical conditions can be interpreted as *ma'i Samoa* and traditional healers are sometimes sought for conditions that require opportune evaluation by a trained medical professional such as undiagnosed cancers. Nearly a quarter of American Samoans believe that traditional healers can cure cancer [24] so they may be utilized prior to, concurrently, or in lieu of mainstream cancer treatment with potentially serious consequences for morbidity and mortality.[6]

Doctors and CAM

Most US physicians feel they lack knowledge of CAM safety or efficacy[25] so it is not surprising that less than one quarter of CAM users report receiving information about complementary treatments from a physician or nurse.[3] Lack of CAM knowledge leads the majority of doctors to discourage its use; however 81% of physicians want more education on CAM therapies.[25]

Personal experience is a predictor of CAM acceptance and more frequent patient referrals amongst US physicians. The Jump, et al. study found that although most physicians feel the majority of CAM therapies are not legitimate medical practice, two-thirds had referred patients for at least one complementary therapy. As CAM is becoming more mainstreamed into the medical school curriculum, physicians practicing less than 10 years are more likely to feel most complementary treatments are legitimate. The majority of physicians feel that massage can be an effective CAM whereas less than one-quarter regard herbal remedies and traditional medicine as effective.[5] Consequently, massage is one of the most common CAM referrals while a minority of doctors prescribes herbal remedies or traditional therapies.[5,26]

Most physicians are unaware of the CAM therapies their patients use.[1,5,8,27-29] Common reasons patients do not disclose their CAM use to a physician include not being asked,[8,30] perceived disinterest or negative response,[9,13,28,30] and the belief that CAM therapy is irrelevant to mainstream treatment.[8,28] In a study of women recently diagnosed with breast cancer in the United States, Adler and Fosket[28] found 54% disclosed their CAM use to their physicians; however 94% discussed their mainstream treatment with their CAM practitioner. With the growing acceptance and use of CAM, patients are becoming more willing to discuss their use especially when asked by a doctor,[4] and more patients are coming to expect their family physician to have knowledge of CAM;[11,31] refer them to CAM; or to offer CAM treatment.[31] Lack of communication between CAM practitioners and physicians and CAM users and physicians may present obstacles to patient care including patients delaying or avoiding mainstream medical care, incorrect diagnoses, medication interference, and harmful reactions to treatment.[6,27,31] Both physicians and CAM practitioners should be made aware of the potential benefits and limitations of each other's treatments.[4,32]

Methods

In February 2009, 43 health care professionals, 13 women and 30 men, employed at LBJ Hospital, and 4 female staff from the American Samoa Department of Health Breast and Cervical Cancer Early Detection Program (BCCEDP) completed a 10-item, self-administered survey at a weekly hospital in-service training. Survey items were adapted from an instrument developed by Jump and colleagues or based on focus group and interview findings and were approved by the American Samoa Institutional Review Board affiliated with the American Samoa Community College and Land Grant. Respondents were given a pen and a $2 hospital cafeteria coupon for their participation.

Data was analyzed in terms of respondents' gender, age, years of professional experience and ethnicity and reported in rounded up whole number percentages to uncover possible patterns that may influence provider-patient communication concerning CAM use.

Results

Most survey respondents were 40 years of age or older (66%). The majority were Samoan (47%) while 26% were Caucasian, 21% Asian, and 6% were other Pacific Islanders. Half had 11 years or less experience in the medical/health care field (76% women, 33% men) and half had more than 11 years experience (24% women, 66% men); one respondent did not provide this information. Forty-seven percent were doctors/specialists (29% women, 57% men) and 53% were other health care providers including nurses, physicians' assistants, medical officers, and health educators (71% women, 43% men). Most respondents saw 10-29 women age 40 or older, the main target population for breast and cervical cancer screening, weekly. However, male respondents were more likely to see 50 or more female patients a week.

The most commonly used CAM were also the most frequent methods providers recommended to patients. The top CAM used and recommended by health care providers in American Samoa were exercise, diet modification, prayer, massage, support group participation, and relaxation techniques. Nineteen percent had visited a Samoan healer for CAM and 17% had recommended this to a patient. Only 9% of respondents reported no personal CAM use and 4% had never recommended a patient use a CAM. Respondents used more forms of CAM than they had recommended to patients with one exception; support group participation was recommended more often than it was personally used.

Women were more likely to have used massage, participated in support groups and used relaxation techniques than men. Providers under age 40 or with 11 years or less experience were more likely to have used diet modification, exercise, relaxation techniques, and participated in support groups than their older, more experienced counterparts. Older respondents were nearly four times more likely to have used herbal remedies and were somewhat more likely to have used massage as CAM. Prayer use corresponded with more years of professional experience but not with increased age. Samoan health care providers were most likely to have used Samoan healers, herbal remedies and prayer as CAM. Samoan and Asian respondents were notably less likely to have used relaxation techniques and to have participated in support groups. Samoan and Caucasian respondents were twice as likely to have used massage as Asians respondents. Caucasian and Asian respondents were somewhat more likely to have used exercise and diet modification.

Men were twice as likely to recommend herbal remedies and more likely than women to encourage prayer. Older and more experienced providers were more likely to recommend prayer, Samoan healers and herbal remedies, whereas their younger, less experienced colleagues are more apt to encourage diet modification. Younger age correlated with more massage and relaxation technique referrals. Less professional experience, but not age, was linked to recommending exercise. Samoan providers were the least likely to recommend diet modification, exercise, relaxation techniques, and support group participation to patients as CAM. On the other hand, indigenous health care professionals were four times as likely as Caucasians to recommend a patient seek a traditional Samoan healer, and 18% have encouraged herbal remedy use. Caucasian providers were the most likely to recommend diet, exercise, and massage, while Asian respondents were the largest advocates of support groups.

The great majority of respondents have asked a patient if they are using traditional Samoan healing as CAM for any illness or symptoms and most have had a patient disclose their use of Samoan healing as CAM. Nearly three-quarters of respondents have advised a patient to stop using traditional Samoan healing methods. Female providers, Samoans, and those with more professional experience are more likely to have asked a patient about traditional CAM use and to discourage it. Caucasians providers were the mostly likely to have had a patient disclose traditional Samoan healing use as CAM, however they are the ethnic group least likely to recommend its discontinuation.

Providers feel most American Samoans use traditional healing chiefly as complementary healthcare. However, more than half of respondents are aware of a breast cancer or cervical cancer patient who has used these techniques as an alternative to hospital treatment. Men, Samoans, Asians, and respondents older than 40 years and with more professional experience were more likely to be aware of a breast cancer or cervical cancer patient using traditional healing as CAM.

Health care providers are nearly equally divided on whether traditional Samoan healing practices usually have a harmful or helpful impact on patient quality of life. Smaller percentages believed traditional medicine tends to have a neutral, a neutral to harmful, or both a harmful and a helpful impact. Nine percent did not respond to this question.

Most local health care providers are interested in learning more about traditional Samoan healing methods, especially women, younger and less experienced professionals, and Caucasians.

Discussion

Common CAM methods in the United States are also the most used and recommended by health care providers in American Samoa including diet modification, exercise, prayer, and massage. Similar to mainland studies, those surveyed have used more types of CAM than they have recommended to their patients and they tend to recommend methods they have personally used. Knowledge of and mainstream acceptance of different CAM may influence provider consultations and recommendations. With 70% of respondents stating they would like more information about indigenous treatments, it is not surprising that traditional Samoan healer use and herbal remedies are infrequently used and recommended to patients. On the other hand, massage is a popular CAM amongst American Samoa health care providers, possibly because of its documented benefits and availability from local practitioners besides traditional healers. Several chose not to judge traditional Samoan healing methods as harmful, neutral or helpful which likely reflects lack of knowledge of or experience with these CAM.

The greatest differences in types of CAM used and recommended are between ethnic groups. Samoan and Asian providers differ most on types of CAM used while Samoans and Caucasians vary most on types of CAM recommended to patients. Years of professional experience, age and gender appear to have less impact on provider CAM use and endorsement. The majority of health care providers in the Territory are Samoan. This group is the most likely to recommend a patient see a traditional Samoan healer who could provide massage or an herbal remedy as CAM and they are least likely to recommend more mainstream CAM such as diet modification and exercise.

A health care provider's ethnicity, gender and years of professional experience may also forecast different patient consultations on CAM use. The majority of providers have consulted with a patient on their Samoan healing use, but nearly all have had a patient disclose traditional CAM use. Thus, it appears that some patients offer this information unprompted despite most providers discouraging traditional CAM use. Most Caucasian health care providers at LBJ are fulfilling two year or shorter contracts and therefore have little experience in American Samoa. This lack of knowledge may be why Caucasians are the most likely to have a patient disclose traditional Samoan healing use, the least likely to discourage this form of CAM, and why all Caucasian respondents request more information on Samoan healing methods.

Nearly two-thirds of providers surveyed believe most patients use traditional healing methods to complement hospital treatment, and more than half were aware of a breast cancer or cervical cancer patient using this complementary therapy. Similarly, over half of providers are aware of a cancer patient utilizing Samoan medicine instead of Western medical treatment, but only 17% feel most patients use traditional healing as an alternative to mainstream care. This could mean breast cancer and cervical cancer patients are more likely than the general population to seek alternative care from a Samoan healer for a period after diagnosis but the majority of these patients return to the hospital for treatment. This notion may be further supported by 11% of providers believing traditional healing is used as both complementary and alternative therapy.

Perhaps because Samoan medicine includes widely accepted massage and less accepted herbal remedies, providers are divided on the impact traditional healing methods have on patient quality of life. Yet, the largest percentage feels the effects are usually harmful, and nearly three out of four respondents have advised a patient to stop using traditional healing methods. However, it is unknown if any patient CAM use, including traditional healing, is systematically documented in American Samoa so their effects can be proven.

This study not only provided insights into health care providers use and perceptions of CAM, it also informed the development of a cancer prevention radio drama and highlighted the need for a cancer patient navigator program. The most common CAM providers have used and recommended were highlighted in the plot of the radio drama to motivate patient-provider discussions. Previous focus group and concurrent interview data was compared to the survey results to confirm that breast and cervical cancer patients utilize traditional healing methods as complementary or alternative therapies. This became a central behavior-change conflict in the drama with the heroine disclosing her traditional alternative medicine use to friends and doctors only after mainstream cancer treatment was no longer viable. And, the acceptance of traditional Samoan healing practices as CAM amongst nearly a third of providers of Samoan ethnicity revealed the need for a cancer patient navigator program to document and track both mainstream and traditional CAM use and to act as a liaison between traditional healers and medical professionals. The limitations of this study are those inherent to survey research, notably self-reported data are subject to recall and desirability bias. Respondents may have underreported their CAM use or referrals due to lack of mainstream medical community acceptance. A limited list of common CAM was assessed, although respondents had the option to write in other modalities. There may have been some confusion in assessing traditional healing as a separate CAM from massage or herbal remedies. To pinpoint traditional Samoan healing methods provided by indigenous practitioners as a CAM, it was listed separately from massage and herbal remedies. The convenience sample obtained at a morning hospital in-service training afforded access to many health care professionals but those not on duty that day or not in attendance were not captured.

CAM use is likely to continue in American Samoa as long as heath care deficiencies and culture-specific beliefs about illness exist. A provider's ethnicity may be the strongest indicator of more or less CAM acceptance which, in turn, influences the content of patient consultations. Many Samoans use traditional healing methods and these unique CAM are used and recommended by nearly one-fifth of local health care providers. Therefore health professionals in American Samoa should be better informed about the efficacy of different CAM and encouraged to document patient CAM use, especially concerning less known traditional methods.

Disclosure

This study was designed by the author, Sara Krosch, with input from American Samoa Community Cancer Coalition Board of Directors and membership, American Samoa Comprehensive Cancer Control Program Coordinator Va'a Tofaeono, American Samoa Institutional Review Board affiliated with the American Samoa Community College and Land Grant, and the Pacific-CEED Legacy Project Staff affiliated with the REACH-US Centers for Disease Control, Department of Family Medicine and Community Health JABSOM, University of Hawai‘i. Data was gathered by the author and program assistants Vaioge Tuito'elau, Pine Semisi, and American Samoa Cancer Registrar Angelina Stevens. Data is affirmed by the author, project assistants, and the American Samoa Community Cancer Coalition Board of Directors. This paper was written by Sara Krosch. This paper was supported by the Cooperative Agreement Grant Number 5U58DP000976-03 from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the author and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

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Table 1.— American Samoa Health Care Provider CAM Survey Results

Item	Responses	All (n=47)	Women (n=17)	Men (n=30)	<40 years (n=16)	≥40 years (n=31)	≤11 years experience (n=23)*	>11 years experience (n=23)*	Samoan (n=22)	Caucasian (n=12)	Asian (n=10)
Aside from mainstream Western medical treatments, which of the following complementary methods have you personally used to treat an illness or alleviate symptoms?	Diet modification	38, 81%	14, 80%	24, 80%	15, 94%	23, 74%	21, 91%	16, 70%	16, 73%	11, 92%	9, 90%
	Prayer	21, 45%	8, 47%	13, 43%	7, 44%	14, 45%	9, 39%	11, 48%	12, 55%	3, 25%	4, 40%
	Herbal remedy	8, 17%	3, 18%	5, 17%	1, 6%	7, 23%	4, 17%	4, 17%	6, 27%	1, 8%	1, 10%
	Exercise	39, 83%	14, 82%	25, 83%	14, 88%	25, 81%	20, 87%	18, 78%	17, 77%	10, 83%	10, 100%
	Massage	18, 38%	9, 53%	9, 30%	5, 31%	13, 42%	8, 35%	10, 44%	9, 41%	5, 42%	2, 20%
	Support group participation	10, 21%	5, 29%	5, 17%	4, 25%	6, 19%	7, 30%	3, 13%	4, 18%	4, 33%	2, 20%
	Relaxation technique	10, 21%	5, 29%	5, 17%	5, 31%	5, 16%	6, 26%	4, 17%	3, 14%	5, 42%	1, 10%
	Traditional Samoan healing/ healer	9, 19%	3, 18%	6, 20%	3, 19%	6, 19%	4, 17%	5, 22%	6, 27%	2, 17%	0, 0%
	Other	1, 2%	1, 6%	0, 0%	0, 0%	1, 3%	1, 4%	0, 0%	0, 0%	1, 8%	0, 0%
	None	4, 9%	1, 6%	3, 10%	1, 6%	3, 10%	2, 9%	2, 9%	2, 9%	1, 8%	0, 0%
	No response	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0,0%	0, 0%	0, 0%
Which of the following complementary methods have you recommended to a patient to treat an illness or alleviate symptoms?	Diet modification	38, 81%	14, 82%	24, 80%	14, 88%	24, 77%	22, 96%	16, 70%	15, 68%	11, 92%	9, 90%
	Prayer	17, 36%	5, 29%	12, 40%	5, 31%	12, 39%	7, 30%	10, 44%	9, 41%	5, 42%	3, 30%
	Herbal remedy	5, 11%	1, 6%	3, 13%	1, 6%	4, 13%	2, 9%	3, 13%	4, 18%	0, 0%	1, 10%
	Exercise	38, 81%	13, 77%	25, 83%	13, 81%	25, 81%	20, 87%	18, 78%	14, 64%	12, 100%	9, 90%
	Massage	17, 36%	6, 35%	11, 37%	7, 44%	10, 32%	8, 35%	9, 39%	7,32%	6, 50%	3, 30%
	Support group participation	12, 26%	6, 35%	6, 20%	4, 25%	8, 26%	6, 26%	6, 26%	4, 18%	3, 25%	4, 40%
	Relaxation technique	9, 19%	2, 12%	7, 23%	4, 25%	5, 16%	4, 17%	5, 22%	3, 14%	3, 25%	2, 20%
	Traditional Samoan healing/ healer	8, 17%	2, 12%	6, 20%	2, 13%	6, 19%	3, 13%	5, 22%	7, 32%	1, 8%	0, 0%
	Other	1, 2%	0, 0%	1, 3%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%
	None	2, 4%	1, 6%	1, 3%	1, 6%	2, 6%	0, 0%	2, 9%	2, 9%	0, 0%	0, 0%
	No response	1, 2%	0, 0%	1, 3%	1, 6%	0, 0%	0, 0%	0, 0%	1, 5%	0, 0%	0, 0%
Have you ever asked a patient if she/he is using traditional Samoan healing methods to treat an illness or symptoms?	Yes	42, 89%	15, 88%	27, 90%	16, 100%	26, 84%	20, 87%	21, 91%	21, 96%	11, 92%	9, 90%
	No	5, 11%	2, 12%	3, 10%	0, 0%	5, 16%	3, 13%	2, 9%	1, 4%	1, 8%	1, 10%
	No response	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%
Has a patient ever told you she/he is using traditional Samoan healing methods to treat an illness or symptoms?	Yes	45, 96%	16, 94%	29, 97%	15, 94%	30, 97%	22, 96%	22, 96%	21, 96%	12, 100%	9, 90%
	No	2, 4%	1, 6%	1, 3%	1, 6%	1, 3%	1, 4%	1, 4%	1, 4%	0, 0%	1, 10%
	No response	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%
Have you ever advised a patient to stop using traditional Samoan healing methods?	Yes	34, 72%	14, 82%	20, 67%	14, 88%	20, 65%	19, 83%	15, 65%	19, 86%	7, 58%	7, 70%
	No	12, 26%	3, 18%	9, 30%	2, 12%	10, 32%	4, 17%	7, 30%	2, 9%	5, 42%	3, 30%
	No response	1, 2%	0, 0%	1, 3%	0, 0%	1, 3%	0, 0%	1, 4%	1, 5%	0, 0%	0, 0%
Are you aware of a breast cancer or cervical cancer patient who has used traditional Samoan healing methods along with (at the same time as) Western medical treatment?	Yes	26, 55%	7, 41%	19, 63%	5, 31%	21, 68%	9, 39%	17, 74%	14, 64%	3, 25%	7, 70%
	No	21, 45%	10, 59%	11, 37%	11, 69%	10, 32%	14, 61%	6, 26%	8, 36%	9, 75%	3, 30%
	No response	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%

Are you aware of a breast cancer or cervical cancer patient who has used traditional Samoan healing methods in place of (instead of) Western medical treatment?	Yes	26, 55%	6, 35%	20, 67%	5, 31%	21, 68%	9, 39%	17, 74%	12, 55%	5, 42%	7, 70%
	No	21, 45%	11, 65%	10, 33%	11, 69%	10, 32%	14, 61%	6, 26%	10, 45%	7, 58%	3, 30%
	No response	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%
In my opinion, patients in American Samoa most often use traditional Samoan healing practices as…	Complementary medicine	34, 72%	12, 70%	22, 73%	13, 81%	21, 68%	16, 69%	17, 74%	16, 73%	8, 67%	7, 70%
	Alternative medicine	8, 17%	3, 18%	5, 17%	3, 19%	5, 16%	5, 22%	3, 13%	4, 18%	3, 25%	1, 10%
	Both complementary and alternative medicine	5, 11%	2, 12%	3, 10%	0, 0%	5, 16%	2, 9%	3, 13%	2, 9%	1, 8%	2, 20%
	No response	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%
In my opinion, what effect do traditional Samoan healing practices usually have on a patient's quality of life …	A harmful effect	17, 36%	7, 41%	10, 33%	6, 38%	11, 35%	10, 43%	7, 30%	8, 36%	4, 33%	4, 40%
	A neutral effect	7, 15%	2, 12%	5, 17%	3, 19%	4, 13%	5, 22%	2, 9%	3, 14%	1, 8%	3, 30%
	A helpful effect	14, 30%	4, 24%	10, 33%	5, 31%	9, 29%	5, 22%	9, 39%	5, 23%	4, 33%	3, 30%
	A neutral to harmful effect	2, 4%	1, 6%	1, 3%	0, 0%	2, 6%	0, 0%	2, 9%	2, 9%	0, 0%	0, 0%
	A neutral to helpful effect	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%
	A harmful and helpful effect	3, 6%	2, 12%	1, 3%	1, 6%	2, 6%	2, 9%	1, 4%	2, 9%	1, 8%	0, 0%
	No response	4, 9%	1, 6%	3, 10%	1, 6%	3, 10%	1, 4%	2, 9%	2, 9%	2, 17%	0, 0%
Are you interested in learning more about traditional Samoan healing methods?	Yes	33, 70%	13, 76%	20, 67%	13, 81%	20, 64%	19, 83%	14, 61%	14, 64%	12, 100%	6, 60%
	No	14, 30%	4, 24%	10, 33%	3, 19%	11, 36%	4, 17%	9, 39%	8, 36%	0, 0%	4, 40%
	No response	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%	0, 0%

*One of the 47 survey participants did not provide information about their years of professional health care experience.

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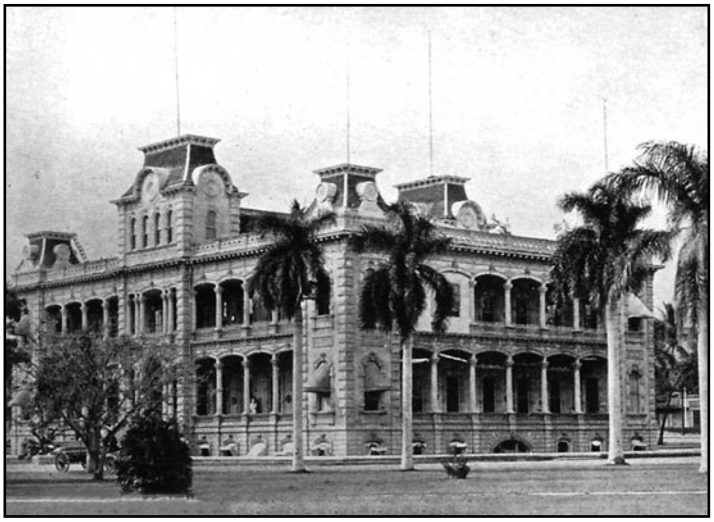

Resident-Driven Group Medical Visits for Diabetes Mellitus in an Ethnically Diverse Clinic Population

Catherine J.S. Tsang MD; Damon F. Lee MD; Ravi Reddy MD; and Gregory G. Maskarinec PhD

Abstract

Group medical visits benefit both patients and providers. In this study, a family medicine resident physician initiated group medical visits for diabetes mellitus at a family medicine residency clinic with the cooperative health care clinic format. Patients were ethnically diverse; mostly of Asian or Pacific Islander ancestry. A registered dietician was present at most group visits, and topics discussed were patient driven. Thirteen patients participated over a nine-month period but data from only the seven patients who attended more than once was used for analysis to show changes over time. Data for all pre- and post-participation surveys collected were used (thirteen and nine, respectively). Non-laboratory measures, such as increased whole grain consumption, were more greatly affected than laboratory measures, such as hemoglobin A1C. Pre- and post-participation surveys revealed that most patients were concerned about general diabetes knowledge, diet and exercise, and group medical visits helped them increase knowledge of these topics. Major challenges of resident initiated group medical visits were scheduling and low patient attendance despite reminder systems.

Background and Objectives

Imagine medical visits where patients spend more time with providers while learning from and supporting each other, where education is delivered to many patients simultaneously, where more patients can be seen per unit of time, and where patients and providers are more satisfied. This is the power of group medical visits.

Group medical visits are ancient. Traditional healing techniques, such as Native Hawaiian ho‘oponopono and Native American sweat lodges, have been performed in groups for hundreds of years.[1,2] The first recorded group visits in modern times were well child group visits lead by Marie Feldman at San Francisco Kaiser Permanente in 1974.[3]

Current group medical visit models include cooperative health care clinics (CHCC's), drop-in group medical appointments (DIGMA's) and physicals shared medical appointments (PSMA's). CHCC's are lead by providers with support staff and focus on a specific health topic.[4-6] DIGMA's are co-led by a provider and behavioral health professional, and open to patients with any condition.[4,6,7] PSMA's group physical exams by gender and age, such as prenatal visits.[5]

Group medical visits have many benefits for both patients and providers, including increased patient and physician satisfaction, improved timeliness of secondary prevention measures, increased problem solving abilities and use of health knowledge, and decreased emergency department and specialist visits.[8-13] Some studies also showed more patients seen per unit of time and cost savings per patient.[5,14] Group medical visits are a key component of the new model of family medicine proposed by the Future of Family Medicine Project.[15]

In this study, we initiated group medical visits for diabetes mellitus at a family medicine residency clinic with the CHCC format. Diabetes mellitus was chosen because it has been widely studied for CHCC's and also because many patients in the clinic have diabetes. Additionally, because most people in Hawai‘i are from group oriented cultures, it seemed that group medical visits would provide a more culturally receptive way for patients to learn about diabetes. The hypothesis was that participation in group visits would help patients on both subjective and objective measures for diabetes, and that patients would find them beneficial.

Methods

The clinic for this study, Physician Center at Mililani, is affiliated with Wahiawa General Hospital and the University of Hawai‘i Family Medicine Residency Program. It serves many rural communities in north O‘ahu, such as Wahiawa and Waialua, Schofield Barracks and suburban regions of central Oahu, such as Mililani and Waipio. The clinic population is thus ethnically, financially and culturally diverse.

In planning group visits, an extensive literature review about group medical visits was performed, and advice was received from the creator of the CHCC model. The primary author also observed group medical visits for diabetes mellitus at Kokua Kalihi Valley Community Health Center in Honolulu, Hawai‘i. Institutional review board approval was obtained. A needs assessment survey was given to all patients with diabetes who had clinic visits during one month, and consisted of a letter explaining group medical visits with areas to mark interest in participation, contact information, and preferred days and times to participate in group visits. Seventeen patients responded yes to the survey and twelve responded no. Based on these results, there was adequate interest in initiating group medical visits for diabetes mellitus.

Research participation was solicited from the first to eighth visit to allow changes over time to be evident. Patients were reminded about confidentiality at each visit. Prior to each visit, chart reviews and lab orders were done for all patients. The family medicine resident also prepared healthy diabetic snacks that were served at each group visit. A registered dietician was present at most group visits. Patients were also encouraged to meet with their primary care providers in clinic at least three times per year. All visits were held in the conference room. A standard progress note was created and used for all visits, and was formatted into the electronic health record in November 2008.

Our initial group visits included a Powerpoint© based group education session, then one-on-one meetings with physicians that alternated with a dietary group lead by the dietician. To facilitate active participation of the patients, we revised the format to supportive and informative open group discussion rather than Powerpoint© as shown in Table 1. During open group discussion, patients were encouraged to ask questions to providers or each other regarding diabetes, and then providers facilitated a group discussion based on patients' concerns. Patients seemed to participate and learn much more than had been demonstrated with the initial format.

Recipes for healthy diabetes snacks were borrowed from group medical visits at Kokua Kalihi Valley Community Health Center and from diabetes cookbooks.[16-21] The focus was on recipes that

Table 1.— Group Visit Format

Time	Content
30 minutes	Vital signs and history taking
10 minutes	Introductions and announcements
70 minutes	Open group discussion with both doctors and dietician present.
20 minutes	Healthy diabetic snack served, providers explained how it can be integrated into diabetic diet, then continued open dietary discussion.
5 minutes	Closing session
10 minutes to 1 hour	Meeting with physician one-on-one

Table 2.— Demographics of group medical visit participants.

Parameter	Data
Gender	Men = 5 Women = 8
Age	43 to 78 years (average age 64 years)
Ethnicity	Native Hawaiian = 3 Marshallese = 3 Filipino = 3 Samoan = 1 Chuukese = 1 Spanish-Native American = 1 Filipino-Spanish-Chinese = 1

patients would not expect in a diabetic diet, or were healthier versions of foods that they enjoyed. Additionally, most providers for diabetes in Hawai'i urge people to eat brown rice instead of white rice, but since many patients do not like brown rice, dishes were also included that made brown rice more appetizing. Examples include low-fat bean dip with baked tortilla chips, whole-wheat chocolate chip pumpkin bars, and stir-fried brown rice.

Outcomes measured included those commonly used to assess patients' control of diabetes and factors that may be modifiable in controlling one's blood glucose and lipids. Dietary measures included a diet high in fruits and vegetables, high in whole grains, low in saturated fat and choosing lean protein sources. Exercise measures quantified duration and frequency of exercise amongst participants. Other parameters included monitoring of blood glucose, average blood glucose, number of hypoglycemic episodes, whether patients had high medication adherence, tobacco use, diabetic foot ulcers, and status of eye exam, foot exam and influenza vaccine within the past year. Laboratory parameters included BMI, HgbA1C, total cholesterol, LDL, urine microalbumin, creatinine and GFR.

Results

Sixty-two patients were called or informed regarding group visits for diabetes mellitus. Seventeen participated but two did not want to be included in the study and two joined too late to be included in the study. See Table 2 for demographic information of the thirteen participants whose data was included in the study.

Seven patients attended group visits more than once. One patient attended twice, five attended three times and one attended four times. In order to show changes over time, data from only these seven patients was used for analysis of subjective and objective measures. Since the data sample was small, standard deviations were unable to be calculated, so percent changes for outcomes studied were used. Participants had diabetes for an average of 10.5 years with a range of 1-20 years. Eleven of them rated their diabetes control as good or fair, but only six of them had hemoglobin A1C <7% prior to participating. Three patients who attended more than once had an initial hemoglobin A1C of <7%. Their average BMI was 32 with a range of 24-47, and four of them had an initial BMI of >30. Their average total cholesterol was 172 with a range of 127-211, with only one patient having a total cholesterol >200. Their average LDL was 98 with a range of 32-119; five patients had an initial LDL of >100.

All participants who attended more than once monitored their blood glucose at least daily, had no hypoglycemic episodes, were adherent to medications, did not have current tobacco use, and did not have foot ulcers. All seven patients included in data analysis were adherent to a diet high in fruits and vegetables, and the remainder increased their intake of whole grains while decreasing fat content. The patient who attended twice was eating lean meats but high fat, and the patient who attended four times was already eating a low fat diet with lean meats. Most patients increased their amount of exercise per week. Additionally, they generally improved in preventative health measures. Small changes were seen for average blood glucose, BMI and hemoglobin A1C. There was a trend in reduction of total cholesterol. All patients who attended three or four times had an increased LDL. Patients who attended three times also had an overall 72% increase in their urine microalbumin. All patients' serum creatinines remained relatively stable.

Results of pre- and post-participation surveys showed that most patients perceived learning to control one's diabetes and improving diet and exercise as benefits of attending group visits. About one third of them also liked the food served and recipes, and about one fourth of them enjoyed learning from others' experiences. Most patients did not perceive any weaknesses. Both pre- and post-participation, they would like to learn about general diabetes knowledge, diet, avoiding complications and new diabetes knowledge at future visits. Please see Table 3 for further details.

Discussion

Non-laboratory measures were much greater affected than laboratory measures, as discussed in the results section. Data collection for only nine months could account for this; some measures might take longer to improve. Also, because patients only participated in at most four group visits, perhaps they could receive more benefits by further participation. Increased LDL is unclear, unless patients were not reporting their fat intake accurately. However, there is no diabetes registry in the clinic available to compare group visit participants versus other patients with diabetes.

Although participants were ethnically diverse, they found common issues that they shared with each other, such as dietary concerns. Most participants were Asians or Pacific Islanders, so a group oriented format seemed to be a more conducive learning environment. The results of the pre- and post-participation surveys reflected that most patients felt that their concerns about diabetes, diet and exercise, were well addressed during the visits. They also thought that recipes served were helpful, which may be partially due to the food-oriented nature of most cultures in Hawai'i. As is often true in Hawai'i, many people also shared customs from their heritage with each other. Most patients did not perceive weaknesses from attending group visits, and their comments revealed that overall it was a very positive experience.

Table 3.— Pre- and post-participation survey results. (Please note that some patients had more than one response.)

Measure	Pre-participation survey percent of patients who responded "yes"	Post-participation survey percent of patients who responded "yes"
Perceived benefits:		
General diabetes knowledge	62%	56%
Dietary concerns/knowledge	38%	78%
Exercise concerns	15%	33%
Food served at visit/recipes	0%	33%
Learning from other's experiences and concerns/group support	0%	22%
Prevent complications	8%	11%
New treatments for diabetes	8%	11%
Types of diabetes	0%	11%
Unsure	8%	0%
Perceived weaknesses:		
None	69%	78%
Location	15%	0%
Others' concerns not applicable to own concerns	8%	0%
Not enough participants	0%	11%
Seeing others' suffering	0%	11%
Unsure	8%	0%
What patients would like to learn:		
How to control diabetes	54%	44%
Diet	15%	44%
Avoiding complications of diabetes	15%	11%
New treatments	15%	11%
Exercise	0%	11%
How to control blood sugar	8%	0%
How patients get diabetes	8%	0%
How others feel about and manage their diabetes	8%	0%
Weight loss	8%	0%
How to change habits	8%	0%
Diabetes medications	0%	11%
Blood and urine tests for diabetes	0%	11%
Unsure	0%	0%

The resident who initiated the project faced many challenges in coordinating and organizing group visits. All visits had a >40% no-show rate. Attrition of patients was usually due to other life issues that took priority over diabetes, such as deaths in the family or problems with other medical conditions. However, many patients stated that they forgot despite reminder calls that were done a few days prior to each visit. Later, written reminders were given, which seemed to help participation rates improve somewhat. Initiating written reminders was more difficult to do earlier because the group visit schedule had not been planned out in advance due to the resident's scheduling issues. Financial issues affected staffing resulting in increased workload on the resident, such as chart reviews, vital signs, and most reminder calls.

Another problem area included scheduling issues. Not only coordinating group visits with the resident's busy schedule was challenging, but they also had to account for the clinic schedule, conference room schedule, preceptor schedule and dietician's schedule. Thus, group visits were mostly done on Saturday mornings to ease facilitation.

Finding patients to contact was also difficult because there was no diabetes registry in the clinic. A list was generated of all patients with diabetes mellitus who had been seen recently, but other providers in clinic were also asked for recommendations.

Improvements on the process of group visits in our clinic include forming a list of patients with diabetes and mailing invitations to all of them, which might be easier now that there is an electronic medical record system. As the electronic health record becomes fully functional, providers may develop the ability to have better identification and tracking of diabetics. Another area of improvement would be scheduling visits further in advance so written reminders could be given to patients. Now that there is a cohort of patients who have been actively involved in group visits for many months, perhaps it will be easier to continue group visits at the clinic.

Strengths of the study include a medical visit format that was enjoyed by both patients and providers, increased patient knowledge regarding common diabetes education topics, the ability for patients to support each other during their experience in the group and the novel idea to incorporate group visits into the resident's training. Weaknesses of the study include a small data sample, high no-show rate, and little improvement in laboratory measures (e.g., HgbA1C).

Conclusions

This study shows that resident initiated group medical visits for diabetes mellitus can be accomplished with success, although there are some inherent challenges present. Group medical visits for diabetes mellitus can also be successful with an ethnically diverse population of patients who are willing to share their traditions with each other. Non-laboratory measures were affected more greatly than laboratory measures, but there was a low participation rate. Our clinic is planning to continue group medical visits. Now that the group is more established, perhaps there will continue to be a way for patients to learn about diabetes that is more enjoyable and beneficial for them and their providers.

Disclosures

The study design, data gathering, data analysis, and writing of this paper were done primarily by Catherine Tsang MD, with assistance from Damon Lee MD, Ravi Reddy MD, and Gregory Maskarinec PhD. Assistance with data analysis was also provided by Shu Ki Tsang MS. The authors have no financial affiliation/interest (e.g., employment, stock holdings, consultantships, honoraria) in the subject matter, materials, or products mentioned in this manuscript.

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Designing a Cultural Competency Curriculum: Asking the Stakeholders

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Abstract

Background: *The design of a cultural competency curriculum can be challenging. The 2002 Institute of Medicine report, Unequal Treatment, challenged medical schools to integrate cross-cultural education into the training of all current and future health professionals. However, there is no current consensus on how to do this. The Department of Native Hawaiian Health at the John A. Burns School of Medicine formed a Cultural Competency Curriculum Development team that was charged with developing a curriculum for the medical school to address Native Hawaiian health disparities. By addressing cultural competency training of physicians, the team is hoping to help decrease the health disparities found in Native Hawaiians. Prior attempts to address culture at the time consisted of conferences sponsored by the Native Hawaiian Center of Excellence for faculty and clinicians and Problem Based Learning cases that have imbedded cultural issues.*

Objective: *Gather ideas from focus groups of Native Hawaiian stakeholders. The stakeholders consisted of Native Hawaiian medical students, patients and physicians. Information from the focus groups would be incorporated into a medical school curriculum addressing Native Hawaiian health and cultural competency training.*

Methodology: Focus groups were held with Native Hawaiian medical students, patients and physicians in the summer and fall of 2006. Institutional Review Board approval was obtained from the University of Hawaii as well as the Native Hawaiian Health Care Systems. Qualitative analysis of tape recorded data was performed by looking for recurrent themes. Primary themes and secondary themes were ascertained based on the number of participants mentioning the topic.

Results: *Amongst all three groups, cultural sensitivity training was either a primary theme or secondary theme. Primary themes were mentioned by all students, by 80% of the physicians and were mentioned in all 4 patient groups. Secondary themes were mentioned by 75% of students, 50% of the physicians and by 75% of patient group. All groups wanted medical students to receive cultural sensitivity training, and all wanted traditional healing to be included in the training. The content of the training differed slightly between groups. Students wanted a diversity of teaching modalities as well as cultural issues in exams in order to emphasize their importance. They also felt that faculty needed cultural competency training. Patients wanted students to learn about the host culture and its values. Physicians felt that personal transformation was an important and effective tool in cultural sensitivity training. Cultural immersion is a potential teaching tool but physicians were concerned about student stages of readiness and adequate preparation for cultural competency training modalities such as cultural immersion.*

Conclusions: *Cultural competency or sensitivity training was important to patients, students and physicians. The focus group data is being used to help guide the development of the Department of Native Hawaiian Health's cultural competency curriculum.*

Introduction

The United States is becoming more culturally and ethnically diverse. This diversity is present in the State of Hawai‘i which has no one majority ethnic group.[1,2] Many minority populations suffer from "significant disparities in health care and health outcomes."[2] In Hawaii, Native Hawaiians suffer from some of the highest rates of health disparities.[3-7]

Nationally there is recognition that addressing health disparities requires multiple approaches.[2] With the groundbreaking 2002 Institute of Medicine report, "Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care," there has been a concerted national focus to addressing health disparities suffered by minority communities through improved training of healthcare providers. A recommendation has been to develop comprehensive cross-cultural curricula that can be integrated into medical education.[8] However, several researchers have noted that the utilization of health services interventions such as provider trainings in culturally appropriate care is an important, but not the only, approach to reduce these inequalities.[2,9]

On the federal level, the Office of Minority Health recognized the need for culturally competent care and developed the national standards for culturally and linguistically appropriate services in health care (CLAS standards). They define cultural competence as "a set of congruent behaviors, attitudes and policies that come together in a system, agency or among professionals that enable effective work in cross cultural situations."[10] Components might include awareness of cultural differences and the dynamics of differences as well as an awareness of one's own cultural values.[11] Regulatory agencies, such as the accrediting body for US medical schools, the Liaison Committee for Medical Education, now requires medical schools to address cultural competency training.[12]

Nevertheless, there is no consensus on the best way to teach or train providers in culturally competent care. For example, there has been no standardization of the content, assessment or integration of training curriculum.[13,14] In particular, none that have developed thus far focus on the needs of Hawai‘i's Native Hawaiian community.

The Department of Native Hawaiian Health (DNHH) at the John A. Burns School of Medicine (JABSOM) at the University of Hawai‘i was formed to address the health disparities and healthcare needs of the Native Hawaiian (NH) population. The Cultural Competency Curriculum (C3) Development project within the DNHH was tasked to develop a comprehensive and effective cultural competency training curriculum for JABSOM medical students, the future physicians caring for Native Hawaiians. The C3 project team is multidisciplinary, consisting of faculty from the Departments of Native Hawaiian Health, Family Medicine, and Psychiatry (currently this faculty member is at the School of Social Work). There are two community members: one works at the Queens Medical Center and the other is the retired head of the Office of Health Parity at the Hawaii State Department of Health.

The C3 team realized that it needed to consider what Native Hawaiians would want in a cultural competency curriculum directed at Native Hawaiian health. Review of local literature revealed that poor communication, apprehension, fear and mistrust are thought to underlie many of the disparities suffered by Native Hawaiians. In addition, NH patients feel that Western medical care can be culturally inappropriate (for example: emphasis on the individual rather than the individual in relationship to family or ignoring holistic aspects of health). Native Hawaiians also expressed a preference to see NH health professionals and utilize traditional healing services. Similar to some of the national literature, the importance of the role of culture in understanding health beliefs, attitudes and behaviors was identified.[15-17] The C3 team decided to further identify specific components that should be included in a curriculum targeting Native Hawaiians.

Methodology

The C3 team started with focus groups of stakeholders. Since the DNHH is focused on addressing Native Hawaiian health disparities, we decided that Native Hawaiians were the primary stakeholders and that included not only Native Hawaiian patients, but also the physicians and medical students treating NH patients. The C3 team chose to focus on Native Hawaiian physicians and students, hoping that they might provide some unique insights into cultural competency training content at JABSOM.

Focus groups were chosen as they are an effective way to collect information about perceptions, feelings and thoughts around specific issues. They collect qualitative data from focused discussions featuring predetermined but open ended questions.[18] Previous researchers have found that Native Hawaiians prefer to share their experiences orally and face to face (compared with surveys or telephone interview), allowing them to gauge the researcher's "intent, sincerity, and trustworthiness as information is exchanged."[16,19]

The team conducted a series of focus groups of stakeholders in the summer and fall of 2006. Groups discussed various aspects of Native Hawaiian health including aspects of training for medical students. Prior to conducting our focus groups, we sought, and received, Institutional Review Board (IRB) approval from both the University of Hawaii as well as the Native Hawaiian Health Care Systems. The focus groups each had a facilitator and two scribes. One scribe took notes and the other recorded on flip charts. All sessions were tape recorded. All participants filled out written consent forms.

Native Hawaiian Medical Students

At the time of the focus group meetings, there was no formal cultural competency training for all JABSOM medical students. Most of the students' early exposure to Native Hawaiian health and related issues occurred through a few Native Hawaiian Problem Based Learning (PBL) cases scattered throughout the first and second years of training. Later in their medical training, some, but not all, of the students would get some cultural competency training from certain community clinic rotations. The NH medical student focus group was asked to explore whether Native Hawaiian health care issues were being adequately addressed within PBL and the current curriculum overall. In addition, the focus group asked for medical student input into the design of a cultural competency curriculum. In early fall of 2006, there were 8 Native Hawaiian medical students in years 2 and 3. We chose second and third year students for the focus groups as we thought their memories of the PBL cases would be the most current. Fifty percent of the students participated (N=4, groups=1). We had one male and three female students.

Native Hawaiian Patients

Native Hawaiian patients were recruited from the island of Moloka'i as well as the Native Hawaiian civic clubs on the island of O'ahu. Moloka'i was chosen due to the high percentage of NH residents living in a rural community. Recruitment was done through a contract with Na Pu'uwai, the Native Hawaiian Health Care System on that island. Native Hawaiian patients from Oahu were recruited from the Pearl Harbor Hawaiian Civic Club after discussions with their leadership. The civic club is one of the 52 members of the Association of Hawaiian Civic Clubs. Within their mission, the clubs advocate for health policy affecting Native Hawaiians and they have been willing to collaborate on research projects in the past. The Pearl Harbor Civic Club members came from both suburban and urban O'ahu.

A total of thirty-four patients participated in one of four focus groups (N=34, groups=4). Focus groups ranged in size from 6 to 9. Participants were of mixed gender and ages and came from a variety of communities (rural, suburban, and urban). Patients were asked to share good and bad experiences with doctors as well as comments or recommendations from a patient perspective for the future training of doctors.

Native Hawaiian Physicians

Native Hawaiian physicians were recruited from a pool of physicians that had participated in one of three conferences organized by the JABSOM Native Hawaiian Center of Excellence (NHCOE) and the 'Ahahui o na Kauka (Association of Native Hawaiian Physicians). The conferences all took place on the Island of Kaho'olawe and included cultural competency training. Of note, the training paired a CME (Continuing Medical Education) curriculum with an intense cultural immersion experience/curriculum provided by the Protect Kaho'olawe 'Ohana.[20,21]

Ten Native Hawaiian physicians participated in two separate focus groups (N=10, groups=2). Physicians present represented both genders, a mix of specialties and both academic and clinical practice. They were asked to address two main questions: what should a cultural competency curriculum for medical students include and could cultural immersion activities be a useful adjunct to that curriculum?

Evaluation

Qualitative analysis was done on all transcripts looking for primary and secondary themes.[17] Transcriptions of the audio recordings were read and compared with scribe notes and flip charts. Members of the C3 team then analyzed the data looking for primary and secondary themes. Primary themes were mentioned by all students, by 80% of the physicians and were mentioned in all 4 patient groups. Secondary themes were mentioned by 75% of students, by 50% of physicians and were mentioned in 75% of the patient groups. Speakers were initially identified by first name or initial and after initial transcript review looking for themes, deidentified to a number. Speakers mentioning the theme more than once were only counted once. Consensus was reached among team members prior to comments being assigned to a theme.

Results

Medical Student Group

There was one primary and two secondary themes that arose. The primary theme was mentioned separately by all four students and had to do with the need for more cultural sensitivity training. All four students felt that there needed to be more done to stress the importance of cultural understanding in patient care. They had several suggestions on how to do this. First, they felt that multiple teaching modalities, as well as repeat exposure, were needed. For example, they suggested that teaching modalities include not only PBL cases, but lectures and colloquia and clinical rotations in Native Hawaiian communities. They were very worried about perpetuating stereotypes in the PBL cases. In particular, the students discussed cases where condescending attitudes were present or where fellow students "mocked the case after class." They also felt that in order for cultural issues to be taken seriously by medical students that they needed to become "high yield" (occur on exams). For example, no one wanted a learning issue on traditional NH diet because "it wasn't going to be on the test." There was a strong feeling that cultural issues as well as psychosocial topics needed to have better resources. Students didn't like having to spend a lot of time looking for resources for issues that weren't going to be on exams (low yield). Finally, they felt that the school needed to address diverse student backgrounds especially as it relates to basic understanding of culture and cultural differences. The Native Hawaiian students were aware of the wide range of backgrounds of their fellow students and that many of the students just "don't understand" or "don't know what's inappropriate" with respect to cultural issues.

There were two secondary themes. First, the students felt that there needed to be teaching about traditional medicine in the medical school curriculum. Second, they felt that PBL tutors needed to be trained to be culturally sensitive and that the tutors needed to actively encourage the students to explore the cultural and psychosocial issues in the various cases. They were concerned that there was too much variability in the way that PBL tutors approached cultural and psychosocial issues. (In JABSOM, PBL tutors come from diverse backgrounds, ranging from clinical MD volunteers to MD faculty to basic science PhD faculty).

Native Hawaiian Patients

Although patients came from a variety of backgrounds, five primary themes that were addressed in all patient groups and four secondary themes that were addressed in three of the four patient groups were identified. Primary themes included: customer service related issues (waiting times, rushing the visit), whether there was respect/caring for the patient (trust issues, sensitivity to fears), interpersonal skills of the provider (listening, communicating), thoroughness of care (knowledge of patient, follow up) and finally issues around costs of medical care.

Secondary themes involved issues around medical office staff shortfalls, continuity of care, responsibilities of the patient for their own care and cultural sensitivity training. With respect to the latter, patients wanted formal cultural sensitivity training for students. Many shared stories to emphasize this point. One touching story had to do with the cultural clash that occurred with a *kupuna* (elder) dying at a local hospital. The large family wanted to gather around and tell stories and play music, but the nurse wanted the room to be quite and calm. Patients also wanted students to learn about traditional medicine and to be open about the patient's use of the traditional and alternative medicines. They wanted the doctors, especially "non-local" ones, to learn about the "host culture," to incorporate the patients' cultural values into treatment as well as "involve the family in treatment" plans.

Native Hawaiian Physicians

Native Hawaiian physician focus groups had one primary and two secondary themes. The primary theme was cultural sensitivity training leading to personal transformation. For example, the physicians spent time defining what was meant by "cultural immersion." Most felt that the Kahoʻolawe experience was a personal journey that included cultural experiences. For many, a personal transformation occurred that allowed for a feeling of "connectedness" to the ancestors and the land. As part of this transformation, physicians developed an increased awareness of spirituality and pride in the knowledge and culture of their ancestors. They also acquired a sense of generational responsibility.

There were two secondary themes. The first centered on the impact of the experience on their medical practices. At least ½ of the physicians felt that the Kahoʻolawe experience improved patient communication, increased knowledge of and openness to traditional healing, and made them more aware of the conflict that can occur between cultures (for example: Western and traditional medical practices).

The other secondary theme focused on the components of a cultural competency curriculum, or sensitivity training, for medical students. Physicians were quite concerned about the diversity of the backgrounds of students as well as the stages of readiness of the students to learn new attitudes, behaviors or skills. They felt that self-awareness and self-reflection were critical. Discussions of the culture of medicine and potential conflicts with that culture were needed. The physicians wanted students to be exposed to traditional healing practices. With respect to immersion experiences, physicians were worried about giving the students adequate preparation. Since the personal transformation experiences of Kahoʻolawe were what made the immersion so powerful, they worried about how prepared a student might be for similar experiences. Preparation suggestions ranged from self-reflection and awareness exercises to learning about the history and culture of Native Hawaiians to preparation of the students' "hearts and souls" (emotional/spiritual preparation). Physicians wanted students to know that "there are other powerful ways to learn that aren't evidence based." Finally, the physicians thought that the medical school itself should be more culturally adept. Suggestions included learning about JABSOM's "sense of place" which should incorporate the history, geography and genealogy of the campus as well as the adoption of certain cultural practices into its values and traditions.

Discussion

The design of a cultural competency curriculum can be challenging. The 2002 Institute of Medicine report challenged medical schools to "integrate cross-cultural education into the training of all current and future health professionals." The first challenge is whether one can ever truly achieve cultural "competence" in another's culture. In fact, the C3 team prefers to use the terms "cultural humility" or "cultural sensitivity" as the team doesn't believe that one can truly be "competent" in another's culture. In addition, the team strongly believed that in order for "cultural competency training" to be effective, learning needed to occur on multiple levels: intellectual, emotional, visceral and even spiritual. The question was where to start. Using focus groups of Native Hawaiian stakeholders to help guide decisions around the design of a curriculum proved to be extremely valuable.

Interestingly, all groups of stakeholders agreed that students needed to be exposed to, or taught about traditional medicine. In addition, all groups agreed that cultural sensitivity training was important for medical students. They differed regarding the content that should be covered (with the exception of traditional healing practices). From our medical student focus group we learned that there was concern about stereotypes in the some of the JABSOM PBL cases and they were not an effective teaching tool for cultural issues. Students wanted cultural sensitivity training to involve multiple teaching methodologies and target faculty as well as students. An important point was raised of needing to include culturally related information on exams in order to elevate their "importance" to medical students (make them "high yield").

Native Hawaiian patients were focused on the patient-physician interaction and communication. However, with respect to their desire for medical students and doctors to have cultural sensitivity training, they were concerned about "non-local" physicians learning about the host culture. They also wanted physicians to incorporate cultural values, such as the involvement of family, in treatment plans.

Native Hawaiian physicians were asked to address their personal experiences in a cultural competency training curriculum that included a CME program with intense "cultural experiences." The curriculum was actually designed to include "cultural immersion." Physicians valued this experience greatly. In fact, the experience appears to have been deeply moving and facilitated personal transformation as well as increased connection to and pride in their culture. For many it improved their medical practices. Physicians acknowledged that cultural immersion could be a useful teaching tool but were worried about the student's readiness for the experience.

Study Limitations

Limitations to the study should be noted. First the use of focus group methodology can be subjective, both in the information collected from participants and in its analysis. Secondly, participant numbers were small. The pool of Native Hawaiian medical students and physicians was very limited. Finally, the patient participants may not have been representative of the larger Native Hawaiian population. For example, most of our participants had medical insurance. It's possible that focus groups that included uninsured NH patients might result in different conclusions. The C3 team hoped that using participants from diverse sociogeographic backgrounds and consensus by team members on data extraction and interpretation would address some of these limitations.

Conclusion

The C3 team took the information from these focus groups and used it to prioritize teaching efforts. Curricular time and funding has proved to be challenging, particularly for teaching interventions such as the cultural immersion experience. As a result, the team has had to gradually incorporate lessons and strategies into the JABSOM curriculum. In the future, the C3 team hopes to incorporate most, if not all, of the suggestions raised by the focus groups into the JABSOM curriculum. The results of this study have been extremely helpful as the cultural competency curriculum has developed and continued to evolve. Based on this experience, focus groups such as those in this study can be a useful tool in designing cultural competency training for other schools or departments attempting to address health disparities.

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Health Disparities in the Native Hawaiian Homeless

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Abstract

While it is well accepted that Native Hawaiians have poor health statistics compared to other ethnic groups in Hawaii, it is not well documented if these disparities persist when comparing Native Hawaiian homeless individuals to the general homeless population. This paper examines the Native Hawaiian homeless population living in three shelters on the island of Oahu, to determine if there are significant differences in the frequency of diseases between the Native Hawaiian and non-Native Hawaiian homeless.

A retrospective data collection was performed using records from the Hawai'i Homeless Outreach and Medical Education (H.O.M.E.) project. Data from 1182 patients was collected as of 12/05/09. Information collected included patient demographics, frequency of self reported diseases, family history of diseases, risk factors, prevalence of chronic diseases, and most common complaints. The data from Native Hawaiians and non-Native Hawaiians were examined for differences and a 1-tail Fisher exact analysis was done to confirm significance.

The data reveals that the Native Hawaiian homeless population is afflicted more frequently with asthma and hypertension compared to other ethnic groups. While diabetes constituted more visits to the clinics for Native Hawaiians compared to the non-Native Hawaiians, there was no significant difference in patient reported prevalence of diabetes. The Native Hawaiian homeless also had increased rates of risky behaviors demonstrated by higher past use of marijuana and methamphetamines. Interestingly, there was a lower use of alcohol in the Native Hawaiian homeless and no significant difference between Native Hawaiians and non-native Hawaiians in current use of illicit drugs, which may represent a hopeful change in behaviors.

These troubling statistics show that some of the health disparities seen in the general Native Hawaiian population persist despite the global impoverished state of all homeless. Hopefully, these results will aid organizations like the H.O.M.E. project to better address the health needs of the Native Hawaiian homeless population.

Introduction

On March 27, 2006 the city and county of Honolulu began a cleanup of Ala Moana Beach Park, which displaced approximately 200 homeless people.[1] Many of these displaced individuals returned to the Waianae coast communities on the west shore where they originally came from.[2] These individuals added to the large community of homeless already living on the west coast, or Leeward side, of O'ahu. The beaches of the Waianae coast house homeless tent communities estimated to contain 1,000 – 4,000 individuals. While these numbers are large, they may not accurately account for the hidden homeless population of individuals who sleep with relatives, in cars, or at campsites that are not as visible as the beaches.[2,3]

In an effort to deal with this problem, emergency shelters were set up around the island of O'ahu. The first was the Next Step Shelter at Kaka'ako in March of 2006 followed by another transitional shelter at Kalealoa in October of 2006, located at the former Barbers Point Naval Air Station. Finally, to help curb the growing homelessness on the Leeward coast, construction began on November 18, 2006 for a 300 person emergency transitional shelter.[1,2,4] Prior to this point, the two main shelters on O'ahu were the Institute for Human Services' Men's Shelter and Women's and Children's Shelter, both located in downtown Honolulu. [5]

In recent years the healthcare needs of these homeless individuals living on the Leeward coast has increased. Waianae Coast Comprehensive Center is the main source of healthcare for Waianae coast residents, especially low-income individuals. The center saw a 234% rise in treated homeless individuals from 429 patients in 2003 to 1,002 in 2006 indicating that there was a growing demand for these services.[6]

In an effort to help provide quality medical care to the growing number of homeless in Hawai'i, the Hawai'i Homeless Outreach and Medical Education (H.O.M.E.) project was established as part of the John A. Burns School of Medicine (JABSOM). The program provides free weekly medical care to the homeless at three shelters on O'ahu. Their mission is to "improve quality and access to health care for Hawai'i's homeless, while increasing student and physician awareness and understanding of the homeless and their healthcare needs." The project currently provides a free student-run clinic at the Kaka'ako Next Step Shelter, Pai'olu Kaiaulu Shelter in Waianae, and Onemalu and Onelauena Shelters in Kalaeloa.[7]

The Waianae coast community is predominately made up of low-income individuals, many of whom are Native Hawaiian. As of August 2006, 60-70% of the Waianae homeless were Native Hawaiian and 700 were children under the age of 18.[3] In addition to making up a large proportion of the Leeward coast homeless population, Native Hawaiians and Pacific Islanders are generally overrepresented in lower socio-economic groups.[8] In the county of Honolulu, Native Hawaiians made up 16.1% of the general population.[8] While Native Hawaiians are similarly represented at the Kaka'ako shelter (15.9%), they are overrepresented in both the Waianae and Kalaeloa shelters (28.0% and 50.1% respectively).[10-12] (Fig. 1)

In 1988 the Native Hawaiian Health Care improvement Act established programs to improve the health status of Native Hawaiians.[13] The Native Hawaiian Health Care Systems Program attempts to improve the health status of Native Hawaiians by increasing health education, health promotion, and preventative medicine with programs like Papa Ola Lokahi. Papa Ola Lokahi (POL) was formed in 1988 to address the health care needs of the Native Hawaiian people. A not-for-profit charitable consortium organization, it serves as an umbrella for Native Hawaiian health care planning activities in the state. Such activities are coordinating health care programs for Native Hawaiians and the Native Hawaiian Health Care program, which also supports scholarships to Native Hawaiians in health professions.[8]

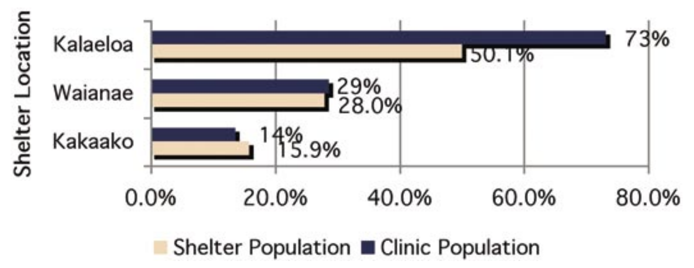

Figure 1.— % of Native Hawaiians in Clinic Population vs. Shelter Population

Despite efforts to improve the health of the Native Hawaiian people, their health status is one of the poorest in the nation, suffering from disproportionately high rates of cardiovascular disease, hypertension, cerebrovascular disease, cancers, diabetes, obstructive lung diseases (asthma, bronchitis, emphysema), chronic kidney disease, metabolic syndrome, and obesity, with the highest rate of diabetes amongst ethnic subgroups in Hawai‘i. Native Hawaiians also have a lower life expectancy and higher rates of cardiovascular and diabetes related mortality. Additionally, Native Hawaiians have more behavioral risk factors for diseases, with higher rates of tobacco use, alcohol consumption, methamphetamine use, and dietary fat intake, compounded by lower fruit/vegetable intake, and decreased physical activity. Native Hawaiians and Pacific Islanders also have lower preventative medicine practices (e.g. cancer screenings) and report greater difficulty in obtaining healthcare.[8,13-18] Some of the proposed barriers to improving the health of the Native Hawaiian people are believed to be related to cultural, financial, social and geographic barriers which prevent the utilization of existing health services.[8]

Given the poor health status of the Native Hawaiian people and the rising healthcare needs of the homeless, especially on the Leeward coast where there is a large proportion of Native Hawaiians, this study aims to determine if there are any health disparities in the Native Hawaiian homeless population compared to the rest of the shelter residents. In this study, we anticipated that Native Hawaiian homeless, like the Native Hawaiian population outside of the shelter, would have poorer health status than the other ethnic groups. The authors also hoped to identify which health problems are most prevalent amongst the Native Hawaiian homeless. If disparities exist between the Native Hawaiian homeless and non-Native Hawaiian populations we hope that this study can be used in order to justify better care for this population through services like the H.O.M.E. project and other clinics that provide care to this population.

Methods

The University of Hawai‘i's Institutional Review Board (IRB) granted approval for this study. A retrospective chart review was performed on the patients seen at the Hawai‘i H.O.M.E. project's free medical clinics. As of 12/05/09, 1182 charts were reviewed which represent the clinics active patient population since its inception on May 30, 2006. The data from intake forms and patient progress notes was de-identified, compiled, categorized and analyzed to determine the occurrence of diseases within the Native Hawaiian homeless population compared to the non-Hawaiian homeless population. For each patient, the self-reported ethnicity, age, sex, medical history, and family history of diseases on the intake forms were reviewed along with the progress note assessment and plan for visit diagnoses.

The items listed on the self reported medical history on the intake forms for both adults and children are found in Table 3 and 4. Pediatric patients are defined as being 17 years or younger. The self reported intake forms also ask about family history (Tables 5-7) and risk factors (Table 10).

During the initial clinic visit, the clinic provider reviews the medical history intake form with the patient or the patient's parent - in the case of pediatric patients. The clinic providers are primarily third year medical students in their family medicine rotation who perform the medical history under the supervision of an attending faculty physician at JABSOM. After each clinic visit the student completes a progress note, with a complete assessment, plan, and medical diagnoses. The attending faculty physician reviews and cosigns all patient progress notes. From these notes the final diagnosis is made from the "Assessment and Plans" section. This data was used to compile a list of the most common ailments, and the prevalence of chronic medical conditions in the homeless population.

The data was examined for differences between the two populations and when differences were evident a 1-tail Fisher exact analysis was done to confirm significance; for purposes of this study a p-value cutoff of 0.05 is deemed significant.

Results

From 1182 charts, 32 were excluded for lack of a provider interview. Although they had registered at the clinic, a follow-up interview by a provider was not performed to complete the history intake form. Therefore, 1150 charts were included in the final analysis, 401 of which were identified as belonging to the Native Hawaiian group. (Table 1) Native Hawaiians represent the largest ethnic group seen in the clinic, comprising 34.9% of the patients seen, followed by Chuukeese (14.7%), Caucasian (13.4%), and Marshallese (8.8%). (Table 2 and Figure 1,2)

From the patient reported illnesses in the adult population there is a higher occurrence of asthma (20.1% vs. 13.5%; p-value 0.01) in the Native Hawaiian population. There was no significant difference between the occurrence of self-reported diabetes (9.2% vs. 10.4%; p-value 0.33) or hypertension (18.0% vs. 18.6%; p-value 0.44) in Native Hawaiians compared to other ethnicities. (Table 3) From the patient reported illnesses in the pediatric population, there is also a higher occurrence of asthma in Native Hawaiians (24.8% vs. 9.9%; p-value $4.3x10^4$). (Table 4)

The data from the self reported family history shows a higher occurrence of asthma in the Native Hawaiians at 12.2% vs. 5.6%, 5.7% vs. 3.1%, and 10.0% vs. 4.9% (p-values of $8.6x10^{-5}$, 0.022 and 0.001) in the history of the patient's mother, father, and siblings respectively. Native Hawaiians also had a higher percentage of individuals with a family history of alcoholism in their parents (9.7% vs. 2.7% in mothers and 11.2% vs. 5.7% in fathers; p-values $5.2x10^{-7}$ and 0.0008), diabetes in their parents (17.5% vs. 12.1% in mothers and 14.0% vs. 8.4% in fathers; p-values 0.009 and 0.002), and a higher paternal history of hypertension (13.7% vs. 10.0%; p-value 0.038). (Tables 5-7)

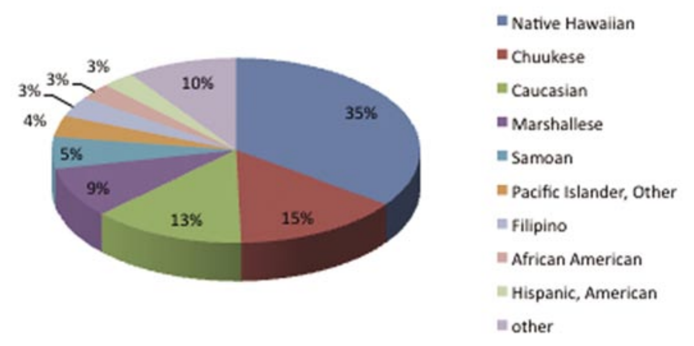

Figure 2.— Ethnicities of H.O.M.E. Clinic Patients

Table 1.— Patient Demographics of the H.O.M.E. Clinic

	Native Hawaiians	Other Ethnicity	Total
Number of patients	404	778	1182
Number of Patients seen by provider	401	749	1150
Number registered but did not see a provider	3	29	32
Sex of Patient			
Male	181	381	562
Female	220	368	588
Age			
Mean age	28	31	
Median age	28	34	
Age range	0-77	0-81	
Total number of pediatric patients (17 or younger)	119	203	322
Male	55	103	158
Female	64	100	164
Kaka'ako Shelter	267	1325	1592
Waianae Shelter	727	664	1391
Kalaeloa Shelter	178	130	308

Table 2.— Ethnicities of the H.O.M.E Clinic Patients

Ethnicity	Male	Female	Total	% of pop
Native Hawaiian	181	220	401	34.9%
African American	16	17	33	2.9%
American Indian	8	14	22	1.9%
Asian Other	3	0	3	0.3%
Cambodian	0	1	1	0.1%
Caucasian	104	50	154	13.4%
Chamorro	1	0	1	0.1%
Chinese	2	5	7	0.6%
Chuukese	69	100	169	14.7%
Filipino	28	13	41	3.6%
Hispanic American	18	15	33	2.9%
Hispanic European	4	3	7	0.6%
Japanese	12	3	15	1.3%
Korean	1	4	5	0.4%
Kosraean (KS087)	0	1	1	0.1%
Laotian	0	2	2	0.2%
Marshallese	39	62	101	8.8%
Mixed ethnicity	8	3	11	1.0%
Pacific islander, other	21	22	43	3.7%
Pohnpeian	7	10	17	1.5%
Portugese	3	7	10	0.9%
Samoan	33	31	64	5.6%
Tongan	0	2	2	0.2%
Vietnamese	4	3	7	0.6%
Total	562	588	1150	100.0%

Table 3.— Patient Reported Medical Conditions – Adults

Disease	Native Hawaiians	%	Non-Native Hawaiians	%
Acquired Hypothyroid	5	1.8%	4	0.7%
Anemia	16	5.6%	18	3.3%
Angina	2	0.7%	2	0.4%
Asthma	**57**	**20.1%**	**74**	**13.5%**
Bipolar disorder	6	2.1%	7	1.3%
Breast CA	0	0.0%	1	0.2%
Cataracts	8	2.8%	13	2.4%
Cerebrovascular disease	1	0.4%	4	0.7%
Chicken Pox	**128**	**45.1%**	**209**	**38.2%**
Chronic Back Pain	29	10.2%	64	11.7%
Cirrhosis	1	0.4%	3	0.5%
Colon CA	0	0.0%	2	0.4%
Coronary Artery Dz	2	0.7%	10	1.8%
Depression	17	6.0%	31	5.7%
Diabetes Mellitus	26	9.2%	57	10.4%
Emphysema	1	0.4%	7	1.3%
Essential hypertension	51	18.0%	102	18.6%
Fractures	25	8.8%	34	6.2%
GERD	17	6.0%	45	8.2%
Glaucoma	1	0.4%	1	0.2%
Gonorrhea	0	0.0%	4	0.7%
Heart failure	0	0.0%	2	0.4%
Hepatitis A	1	0.4%	3	0.5%
Hepatitis B	1	0.4%	8	1.5%
Hepatitis C	0	0.0%	14	2.6%
HIV and/or AIDS	2	0.7%	0	0.0%
Hyperlipidemia	16	5.6%	25	4.6%
Hyperthyroid	2	0.7%	7	1.3%
Measles	44	15.5%	73	13.3%
Melanoma	0	0.0%	1	0.2%
Migraine	1	0.4%	3	0.5%
Mumps	34	12.0%	59	10.8%
Osteoarthritis	5	1.8%	34	6.2%
Peripheral Vascular disease	1	0.4%	5	0.9%
Polio	3	1.1%	2	0.4%
Renal failure	1	0.4%	6	1.1%
Rheumatic Fever	4	1.4%	3	0.5%
Rheumatoid Arthritis	9	3.2%	25	4.6%
Rubella	1	0.4%	1	0.2%
Scarlet Fever	1	0.4%	3	0.5%
Schizophrenia	2	0.7%	4	0.7%
Seizure disorder	4	1.4%	20	3.7%
Whooping Cough	7	2.5%	14	2.6%

Table 4.— Patient Reported Medical Conditions – Pediatrics

Disease	Native Hawaiians	%	Non-Native Hawaiians	%
Anemia	3	2.6%	1	0.5%
Asthma	**29**	**24.8%**	**20**	**9.9%**
Chicken Pox	4	3.4%	17	8.4%
Diabetes Mellitus	0	0.0%	1	0.5%
Fractures	3	2.6%	7	3.5%
Hepatitis A	0	0.0%	1	0.5%
Measles	0	0.0%	1	0.5%
Mumps	0	0.0%	2	1.0%
Seizure disorder	0	0.0%	1	0.5%
Whooping Cough	2	1.7%	0	0.0%

Table 5.— Family History in Mother

Disease	Native Hawaiians	%	Non-Native Hawaiians	%
Alcoholism	**39**	**9.7%**	**20**	**2.7%**
Allergies	0	0.0%	1	0.1%
Asthma	**49**	**12.2%**	**42**	**5.6%**
Breast CA	12	3.0%	10	1.3%
Coronary artery disease	3	0.7%	7	0.9%
Depression	8	2.0%	13	1.7%
Diabetes	**70**	**17.5%**	**91**	**12.1%**
Heart attack	36	9.0%	34	4.5%
Hyperlipidemia	0	0.0%	1	0.1%
Hypertension	68	17.0%	106	14.2%
Other CA	56	14.0%	47	6.3%
Schizophrenia	4	1.0%	4	0.5%
Stroke	36	9.0%	41	5.5%
Thyroid problems	1	0.2%	0	0.0%

Table 6.— Family History in Father

Disease	Native Hawaiians	%	Non-Native Hawaiians	%
Alcoholism	**45**	**11.2%**	**43**	**5.7%**
Allergies	0	0.0%	1	0.1%
Asthma	**23**	**5.7%**	**23**	**3.1%**
Coronary artery disease	1	0.2%	4	0.5%
Depression	1	0.2%	3	0.4%
Diabetes	**56**	**14.0%**	**63**	**8.4%**
Heart attack	30	7.5%	61	8.1%
Hyperlipidemia	1	0.2%	1	0.1%
Hypertension	**55**	**13.7%**	**75**	**10.0%**
Other CA	33	8.2%	37	4.9%
Schizophrenia	1	0.2%	0	0.0%
Stroke	19	4.7%	22	2.9%
Thyroid problems	0	0.0%	2	0.3%

Table 7.— Family History in Sibling

Disease	Native Hawaiians	%	Non-Native Hawaiians	%
Alcoholism	16	4.0%	22	2.9%
Allergies	2	0.5%	0	0.0%
Asthma	40	10.0%	37	4.9%
Breast CA	5	1.2%	7	0.9%
Coronary artery disease	0	0.0%	3	0.4%
Depression	1	0.2%	4	0.5%
Diabetes	15	3.7%	43	5.7%
Heart attack	7	1.7%	16	2.1%
Hyperlipidemia	0	0.0%	1	0.1%
Hypertension	11	2.7%	35	4.7%
Other CA	6	1.5%	25	3.3%
Stroke	5	1.2%	17	2.3%
Thyroid problems	1	0.2%	1	0.1%

Table 8.— Prevalence of Diseases

Disease	Native Hawaiians	%	Non-Native Hawaiians	%
Allergic rhinitis	11	2.7%	24	3.2%
Anemia	2	0.5%	6	0.8%
Angina	8	2.0%	15	2.0%
Arrhythmia	2	0.5%	2	0.3%
Arteriosclerotic disease	1	0.2%	2	0.3%
Asthma	**56**	**14.0%**	**50**	**6.7%**
Back Pain	15	3.7%	42	5.6%
Bipolar	2	0.5%	11	1.5%
Cardiomyopathy	2	0.5%	1	0.1%
COPD	7	1.7%	6	0.8%
Depression	14	3.5%	21	2.8%
Diabetes Mellitus	30	7.5%	39	5.2%
Drug dependence	2	0.5%	4	0.5%
Dysmenorrhea/ Amenorrhea	11	2.7%	18	2.4%
Eczema/atopic dermatitis	16	4.0%	34	4.5%
GERD	12	3.0%	15	2.0%
Gout	2	0.5%	3	0.4%
Hyperlipidemia	5	1.2%	8	1.1%
Hypertension	**55**	**13.7%**	**68**	**9.1%**
Hypothyroid	5	1.2%	2	0.3%
Lung CA	1	0.2%	0	0.0%
Osteoarthritis	7	1.7%	22	2.9%
Other MS complaint	23	5.7%	59	7.9%
Peripheral Vascular disease	1	0.2%	5	0.7%
Pregnancy	12	3.0%	19	2.5%
Rheumatoid arthritis	1	0.2%	1	0.1%
Schizophrenia	3	0.7%	1	0.1%
	401		749	

Table 9.— Most Common Medical Visit Diagnoses – Total

	Native Hawaiian		Non-Native Hawaiian	
Diagnosis/ problem	Number	%	Number	%
Essential Hypertension	149	12.9%	283	11.2%
Upper respiratory infection	108	9.3%	233	9.3%
Asthma	**85**	**7.4%**	**86**	**3.4%**
Diabetes Mellitus	**80**	**6.9%**	**115**	**4.6%**
Cellulitis or abscess	65	5.6%	134	5.3%
Non-infectious dermatological disorder	38	3.3%	151	6.0%
Musculoskeletal problem	29	2.5%	102	4.1%
Diarrhea	28	2.4%	37	1.5%
Fungal infection	26	2.2%	48	1.9%
Pharyngitis	24	2.1%	43	1.7%
Depression	21	1.8%	38	1.5%
Bronchitis	19	1.6%	27	1.1%
Dysmenorrheal/ Amenorrhea	19	1.6%	33	1.3%
Back pain	17	1.5%	60	2.4%
Dental problems	17	1.5%	45	1.8%
Eczema, Atopic Dermatitis	17	1.5%	34	1.4%
Otitis Media	16	1.4%	23	0.9%
Adult physical exam	15	1.3%	18	0.7%
GERD	13	1.1%	56	2.2%
Headache	13	1.1%	30	1.2%
Otitis Externa	13	1.1%	24	1.0%
Urinary Tract Infection	13	1.1%	19	0.8%
Allergic Rhinitis	12	1.0%	35	1.4%
GI disease	7	0.6%	47	1.9%
Infectious dermalogical disorder	6	0.5%	46	1.8%
Osteoarthritis	6	0.5%	28	1.1%
Total Number of Visits	1156		2516	

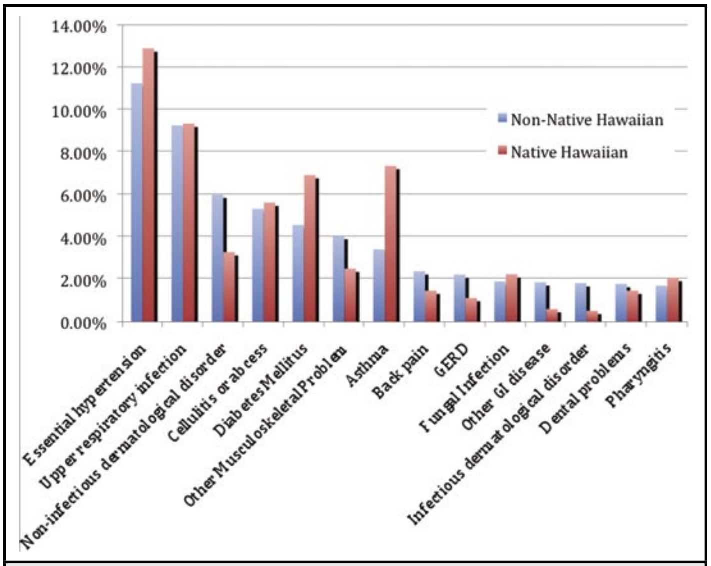

Figure 3.— Most Common Medical Visit Diagnoses

Table 10.— Risk Factors

Risk factor	Native Hawaiians	%	Non-Native Hawaiians	%
Tobacco use (lifetime)	125	31.2%	223	29.8%
Current tobacco use	108	26.9%	170	22.7%
Average pack years	20.25 (n=88)	—	22.96 (n=160)	—
Alcohol use	**29**	**7.2%**	**91**	**12.1%**
Average drinks per day	4.94 (n =19)	—	3.75 (n= 60)	—
History of excessive drinking	8	2.0%	29	3.8%
Ever used marijuana	**49**	**12.2%**	**47**	**6.3%**
Current marijuana use	11	2.7%	20	2.7%
Ever used methamphetamines	**47**	**11.7%**	**38**	**5.1%**
Current methamphetamine use	8	2.0%	6	0.8%
Ever used cocaine	17	4.2%	18	2.4%
Current Cocaine use	3	0.7%	1	0.1%
Ever used heroin	4	1.0%	6	0.8%
Current heroin use	0	0.0%	1	0.1%
Victim of domestic violence	25	6.2%	33	4.4%
Current victim of domestic violence	9	2.2%	8	1.0%
Sexually active	87	21.7%	144	19.2%
Condom use (of sexually active)	6	6.9%	20	13.9%
Some form of contraception	21	24.1%	42	29.2%
Average # of sexual partners	6.71 (n=69)		5.14 (n=122)	

The prevalence of chronic disease, calculated from the patient progress notes' "Assessment and Plan" section finds higher frequency of asthma (14.0% vs. 6.7%; p-value 5.2x10^{-5}), and essential hypertension (13.7% vs. 9.1%; p-value 0.01) in Native Hawaiian homeless. There was no significant difference found in the prevalence of diabetes mellitus between Native Hawaiians and other ethnicities (7.5% vs. 5.2%; p-value 0.08). (Table 8)

The Most Common Medical Visit Diagnoses data, extracted from the patient progress notes, finds that the most common complaints for both the Native Hawaiians and non-Native Hawaiians are essential hypertension and upper respiratory infection. The Native Hawaiian population, however, has a greater frequency of visits for asthma (7.4% vs. 3.4%; p-value 2.8x10^{-7}) and diabetes mellitus (6.9% vs. 4.6%; p-value 0.002) when compared to the non-Native Hawaiian homeless.(Table 9 and Figure 3) Native Hawaiian clinic visits. While looking at risk factors, the Native Hawaiian homeless population was found to have a decreased current use of alcohol (7.2% vs. 12.1%, p-value 0.005) and an increased past use of both marijuana (12.2% vs. 6.3%; p-value 0.0005) and methamphetamine (11.7% vs. 5.1%; p-value 5.0x10$^{-5)}$ when compared with the rest of the homeless population.(Table 10)

Discussion

Asthma and hypertension appear to afflict the Native Hawaiian homeless much more than the rest of the homeless population. There is a higher occurrence of asthma in both self-reported adult and pediatric populations and higher numbers of Native Hawaiians that have a family history of asthma. This is supported by a higher prevalence of asthma in the Native Hawaiian homeless found in the clinic database and it was also found to be one of the most common complaints bringing patients to the clinic, being third only after hypertension and URI. Asthma has been found to be twice as prevalent in the homeless compared to the general population, due to increased exposure to cigarette smoke, environmental pollutants, and other allergens.[19] Given these statistics, we expected to find an increased prevalence of asthma in the Native Hawaiian homeless population, however, non-homeless Native Hawaiians have almost the same prevalence of asthma compared to the homeless clinic population (14% vs. 15.2%).[20] This may be due to the fact that only sheltered homeless were included in this study and the numbers for unsheltered homeless may be higher. Despite the lack of an increase in the prevalence of asthma in homeless Native Hawaiians, the disparity between them and other ethnicities with asthma still persists.

Hypertension was found to be the most common chronic medical problem in both the Native Hawaiian and Non-Native Hawaiian homeless. However, similar to asthma, it was found to be more prevalent amongst the Native Hawaiian homeless compared to other ethnicities. Interestingly, the Native Hawaiian population did not self-report having a higher history of hypertension but did have a higher prevalence found during clinic visits. This could represent the fact that the Native Hawaiian patients were not aware of their condition and that it was being newly diagnosed by the H.O.M.E. clinics. This may also be the reason for a lower percentage of the Native Hawaiian homeless having hypertension compared to the general Native Hawaiian population (13.7% vs. 16.7%).[20] Since hypertension is a "silent" disease and because the majority of the homeless do not seek "routine" medical care, it can be speculated that many homeless individuals with hypertension may not be getting diagnosed.

While the prevalence of diabetes in the general Native Hawaiian population is higher than other ethnicities, it was not found to be more prevalent in the Native Hawaiian homeless.[20] Although there is limited published data documenting poor diets in the general homeless population, it is fairly well known that poverty is associated with both obesity and poor diets, high in polyunsaturated fats and simple carbohydrates, which would put all homeless individuals at risk for type 2 diabetes mellitus.[21-23] However, it would be interesting to see if there was a difference in diabetes prevalence rates if the Native Hawaiian numbers were compared only to non-Pacific Islanders given that the Micronesian population probably has a similar prevalence of diabetes compared to the Native Hawaiian population, although data is lacking in this area. Despite the similar prevalence of diabetes amongst the clinic patients, Native Hawaiians did present to the clinics more for care of their diabetes. It is unclear if this indicates that Native Hawaiians required more visits to the clinics in order to manage their diabetes or if they were more diligent in addressing their medical problems. It would be interesting to look at diabetes in the homeless further to start to answer some of these questions.

The Native Hawaiian homeless also have a higher frequency of certain risky behaviors. They have a higher past use of drugs like marijuana and methamphetamines. These risk factors could have contributed to the current poor health status of the Native Hawaiian homeless as well as to their homelessness itself. There were no significant differences in the current use of illicit drugs amongst shelter residents and there was a lower prevalence of alcohol use amongst Native Hawaiians. This data could represent a hopeful improvement of behaviors in the Native Hawaiians. The data could be confounded by the shelter policies at the Pai'olu Kaiaulu Shelter in Waianae, which strictly prohibits illicit drug use. Despite these drug policies, this represents a drop in current risky behaviors amongst the sheltered Native Hawaiian homeless and a first step toward improving their health status. There are certainly limitations to this study, foremost being that the data gathered is not from randomized homeless individuals, but rather only from sheltered homeless residents who sought care at one of the H.O.M.E. clinic sites. Additionally there may also be limitations on taking accurate family histories from non-native English speakers such as Chuukese and Marshallese patients when comparing prevalence rates. This data may not completely represent the unsheltered homeless or those that seek medical care elsewhere or not at all. Additionally, the data for the shelter demographics represents only a snapshot of the shelter populations at one point in time and it is difficult to represent the sheltered homeless population, as they are a transient population.

Even with its limitations, the study did demonstrate that despite the overall disadvantaged status of homelessness, Native Hawaiians are still at an increased risk of chronic diseases such as hypertension and asthma. Hopefully this information can help providers, like the H.O.M.E. project, to better serve the Native Hawaiian homeless population. Further studies would be warranted to look more closely at the specific chronic diseases in the Native Hawaiian homeless population, to examine the prevalence data in the unsheltered homeless, and to study the impact of providers like the H.O.M.E. project on the health of the homeless, in particular the Native Hawaiian homeless population.

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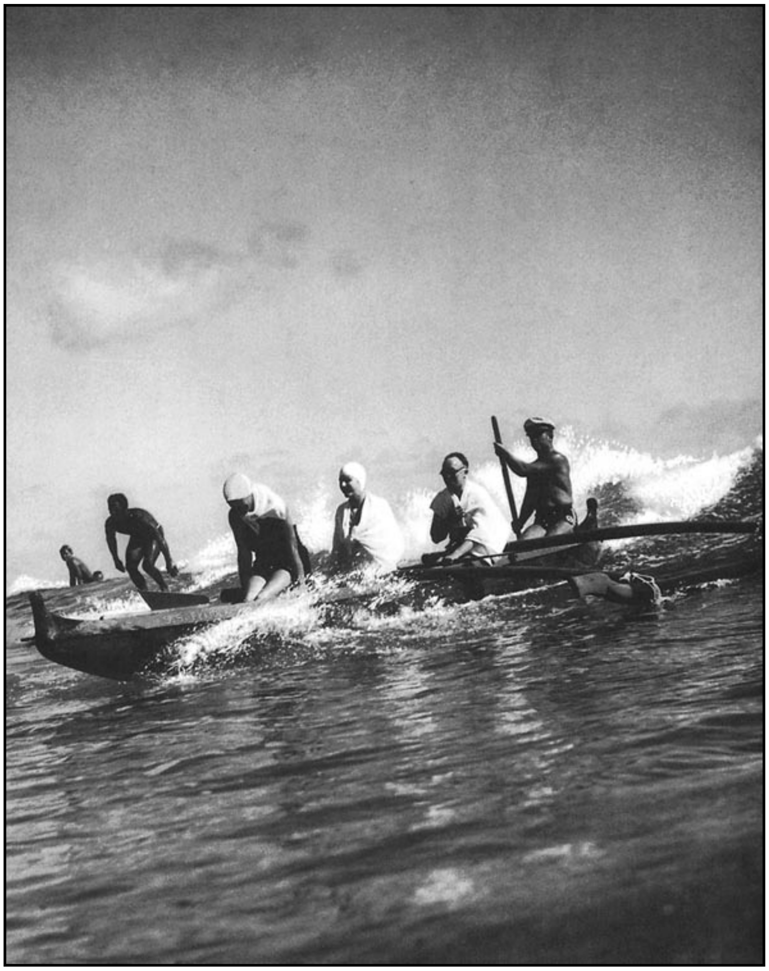

Physician and Pharmacist Collaboration: The University of Hawai‘i at Hilo College of Pharmacy – JABSOM Experience

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and Lucy L. Bucci MD, MPH

Abstract

The purpose of this article is to describe the experiential program created at the newly formed University of Hawai‘i at Hilo College of Pharmacy (UHH CoP). The Introductory Pharmacy Practice Experience (IPPE) rotations were developed to prepare student pharmacists for their final year of Advanced Pharmacy Practice Experience (APPE) rotations by improving clinical skills and patient interactions. In partnership with the John A. Burns School of Medicine (JABSOM) Department of Family Practice, physician and pharmacist teams collaborate to deliver patient care for chronic diseases and elevate educational opportunities provided by UHH CoP. Another goal of the experiential program is to determine whether the investment of pharmacist faculty and adjunct physician/nurse preceptors prepares students for the final year of APPE rotations. A survey was administered to non-faculty pharmacist preceptors who taught the third IPPE rotation during the summer of 2009. Twenty-nine surveys were received from six facilities on O‘ahu and the Big Island. Initial survey results revealed an overall rating average of 3.72 (Likert scale: 1–lowest to 5–highest), an average of 4.14 for professionalism, an average of 3.41 for overall clinical skills, and an average of 3.45 for overall readiness for experiential rotations. Average ratings when compared with fourth-year students from several mainland colleges ranged from 1.7 to 2.2 (1-worse than, 2-same, 3-better). This data demonstrates that UHH CoP is investing faculty and preceptor resources wisely to enhance the preparation of students for APPE rotations.

Introduction

In December 2008, the US Health Resources and Services Administration published a report that projects a pharmacist shortage to continue through 2030.[1] This report indicates that the roles of pharmacists will shift as a result of the aging population and the increasing complexity of medications, which will only increase demand. Improvements in technology and the use of pharmacy technicians have allowed pharmacists to spend more time counseling and educating patients.

Historically, the pharmacist was the person who compounded and dispensed prescriptions written by physicians. Physicians and pharmacists often were seen as adversaries rather than members of the same team. Today, the practice of pharmacy involves much more than counting medications and compounding prescriptions. Pharmacy practice has been evolving over the past 40 years to a clinically based practice that encompasses a variety of patient care settings such as academic teaching hospitals and community institutions, ambulatory health clinics and long-term care facilities.[2] These practice sites use clinical pharmacists as members of the health-care team based on their extensive knowledge of medications. Pharmacists contribute to direct patient care in hospital settings through rounding with providers, therapeutic drug monitoring and patient education at the bedside. Pharmacists also contribute in the ambulatory clinic setting by providing medication therapy management, intensive patient education and consultation to prescribers.

Description of Doctor of Pharmacy Degree and Clinical Pharmacist

The Doctor of Pharmacy (PharmD) degree is accredited by the Accreditation Council for Pharmacy Education (ACPE) and traditionally consists of didactic coursework in the first three years with a fourth year of experiential rotations. Extensive study in medicinal chemistry, pharmacology, pharmaceutics and pharmacokinetics distinguishes a pharmacist's training compared with other health-care professionals. Integration of these pharmacy disciplines with disease therapeutics precedes the final year of Advanced Pharmacy Practice Experience (APPE). Previously, because of limited interactions with patients and other health-care professionals, pharmacy students were typically ill-prepared for APPE.

Today's pharmacy education system places significant emphasis on the role of the clinical pharmacist. A clinical pharmacist is a highly trained professional who, after receiving a terminal PharmD degree, may elect to continue training with one or more years of postgraduate residency and fellowship training in areas such as internal medicine, critical care, oncology, infectious diseases, behavioral health, ambulatory care and pharmacoeconomics. Similar to other medical professions, after additional examination and training, pharmacists can become board certified in the area of general pharmacotherapy or in the specialty areas of oncology, nuclear medicine, psychiatric pharmacy, nutrition support and ambulatory care. Pharmacists can become board certified in advanced diabetes management and become certified diabetes educators, certified geriatric practitioners and smoking cessation counselors. Clinical pharmacists are trained to manage adverse drug reactions, consult on drug-drug and drug-disease interactions, and provide evidence-based drug information and pharmacoeconomic evaluations. Many clinical pharmacists round with medical teams in health-care facilities and offer consulting services for specialties in the various practice settings.

University of Hawai‘i at Hilo College of Pharmacy (UHH CoP) Experiential Program

In August 2007, UHH CoP welcomed its inaugural class. Ninety students matriculated into the four-year program that began with the vision of US Senator Daniel Inouye of Hawai‘i and strong community support. Also in 2007, ACPE mandated a minimum of 300 hours of Introductory Pharmacy Practice Experience (IPPE) within the first three years of the curriculum to better prepare pharmacy students for the final APPE year. UHH CoP incorporated this new standard by designing a unique and aggressive IPPE program that prepares students for APPE and ultimately for professional life as a patient advocate, health-care team member and lifelong learner. Additionally, the preparation students receive in the IPPE program is intended to improve retention of volunteer pharmacist preceptors who host the majority rotations during the APPE year. Given the numerous demands of pharmacist preceptors, UHH CoP felt that highly motivated and well-prepared students would increase preceptors' satisfaction with teaching and improve job satisfaction.

The first pharmacy professional year of IPPE consists of 100 hours, mainly of observation in a hospital setting that includes understanding the pharmacy distribution system, partnering with nurses on patient care floors, patient home visits, an observation of surgery and discussion with anesthesiologists. Students also spend time in the community retail pharmacy setting and at adult day care centers for the initial exposure to a patient's medical chart. During the first year, students learn the basics of biochemistry, immunology, pharmaceutics, biostatistics and pharmacy calculations.

The second pharmacy professional year of IPPE includes an aggressive 120-hour program that focuses on development of clinical skills such as patient interviews, basic physical assessment, chart data extraction and case presentations. Students rotate through community health clinics, physician group practices and long-term care facilities while being supervised by UHH CoP faculty. During the second year, students begin an integrated sequence of courses that combines pathophysiology, medicinal chemistry, pharmacology and disease therapeutics. Students also are exposed to evidence-based medicine, pharmacokinetics, disease management, toxicology and pharmacy law. Students become certified in basic tobacco intervention skills and immunization delivery. They are trained to perform manual blood pressure screening, finger stick glucose, cholesterol screening and body mass index assessments.

Students complete their final IPPE rotation in the summer immediately following the second professional year. This rotation is designed as a two-week, intensive acute care experience. It is conducted at Kapi'olani Medical Center at Pali Momi, Straub Clinic and Hospital, The Queen's Medical Center, Kaiser Permanente, Kuakini Medical Center, Maui Memorial Hospital, Kona Community Hospital and Hilo Medical Center. Students in this rotation follow multiple patient cases while rounding with patient care teams and working with clinical pharmacists and other health-care providers. They are expected to provide in-service education to the hospital staff, evaluate medical literature in a small group setting and present a formal patient case to their peers.

The third professional year does not include IPPE but emphasizes complimentary and alternative medicine, pharmacy management, pharmacoeconomics and an overview of health-care systems. The didactic capstone course, Applied Pharmaceutical Care, requires students to debate controversial therapeutics issues as a method of reinforcing material from previous courses (i.e. – pharmacology, therapeutics, pharmacy law, pharmacoeconomics, health-care systems and toxicology).

UHH CoP – JABSOM Collaboration

In the community health clinics, students interview patients for medication history and adverse effects and observe provider-patient interactions. Students see the patient alongside the provider to further expand their interviewing and physical exam skills. The entire array of primary care patients are seen by these students. Students work with UHH CoP pharmacist faculty members who are in collaborative practice with physicians or midlevel practitioners. One example is the first collaborative venture between the UHH CoP and the John A. Burns School of Medicine (JABSOM) Family Medicine Program. At Hawai'i Island Family Health Center in Hilo, providers and pharmacists work together to improve patient outcomes and to teach students. Although physician/pharmacist collaborative practices have been in existence in various types of practice settings in Hawai'i, the JABSOM-UHH CoP partnership serves as a unique teaching environment. This clinic is designed to serve as a teaching site for students from a variety of health-related disciplines and eventually as the home for family medicine and pharmacy practice residents. During the 2009-10 academic year, 82 students rotated through this site. This clinic provides outstanding teaching opportunities for chronic diseases such as diabetes, hypertension, asthma, chronic obstructive lung disease, anticoagulation and pain management.

Patients with complicated medication regimens or those needing extra education are referred to the clinical pharmacist for medication therapy management. Students accompany the clinical pharmacist during the patient care visit that focuses on medication therapy management, prescription compliance, adverse effect management and monitoring therapeutic effectiveness. This type of team teaching introduces the student to the interdisciplinary approach of health care in the ambulatory setting and it demonstrates the role of the clinical pharmacist in the management of chronic diseases.

The clinical pharmacists at Hawai'i Island Family Health Center are responsible for providing medication therapy management to patients referred by the providers. Most patients have diabetes, hypertension or hyperlipidemia, or are taking anticoagulant medications. More than 120 patients have been seen by a clinical pharmacist since July 2009. This unique collaborative practice promotes optimal medication management and continues to emphasize the concept of collaborative care. Since the state of Hawai'i does not provide prescriptive authority for clinical pharmacists, all medication changes are reviewed and authorized by the provider. This ensures proper communication between pharmacist and provider with minimal duplication of effort. As the practice continues to expand, the need for additional ambulatory care pharmacists is becoming evident.

Results of Introductory Experience Training

A survey was conducted of the non-faculty pharmacist preceptors who taught the third IPPE rotation during the summer of 2009. Twenty-nine surveys were received from six facilities on O'ahu and the Big Island. Preceptors were required to complete the survey after each cohort of students, so multiple responses were allowed. All survey results were included in the analysis. Students received an overall rating and were rated on professionalism, overall clinical skills, overall readiness for experiential rotations, and comparison with other mainland pharmacy students.

Students' received an overall rating of 3.72 (Likert scale: 1 – lowest to 5 – highest) during this period. This rating was based on the combination of professionalism, clinical skills, readiness and performance during rotation.

Preceptors rated UHH CoP students an average of 4.14 (Likert scale: 1 – lowest to 5 – highest) for professionalism. Aspects of professionalism include timeliness and appropriate dress, demonstration of respect for patients and staff, ability to follow policies and procedures, demonstration of appropriate verbal and nonverbal communication skills and the ability to maintain patient confidentiality. Students also demonstrated the ability to stay within their scope of practice, which was appropriate for their skill and education level.

Preceptors rated UHH CoP students an average of 3.41 (Likert scale: 1–lowest to 5–highest) in overall clinical skills. Five clinical skills were evaluated for each student and used as the basis for overall clinical skills. These included: the student's ability to effectively obtain and interpret data from the medical chart or computer system, to present patient cases in a clear and concise manner with relevant data, to effectively identify missing or incomplete patient data affecting therapeutic decisions, to integrate patient information into assessment and critical evaluation of the appropriateness of drug therapy and to perform a thorough patient medication interview.

Preceptors rated UHH CoP students' overall readiness for experiential rotations with an average of 3.44 (Likert scale: 1–lowest to 5–highest). Preceptors' average rating when compared with fourth-year students (n=61) from mainland colleges for UHH CoP students ranged from 1.7 to 2.2 (1–worse than, 2–same, 3–better). Preceptors rated an average of 3.34 (scale: 1–would not recommend to 4–would highly recommend) on whether they would recommend the UHH CoP preceptor program to other pharmacists. This preliminary data indicates that the UHH CoP IPPE program is providing appropriate preparation for the student to succeed in the final experiential year.

In July 2010, a second ambulatory care pharmacist board certified in psychiatric pharmacy will begin practice at The Physician Center at Mililani. This pharmacist will collaborate with the family medicine physicians and provide medication therapy management resources for the Family Medicine Residency training program. APPE students will rotate through the Hilo and Mililani clinics and assist the pharmacy faculty with services such as medication reconciliation, patient education and chronic disease management. Follow-up surveys after the APPE year and review of patient care statistics will help to measure the effects of this JABSOM-UHH CoP partnership in coming years.

UHH CoP is working to educate pharmacy practitioners and leaders and to improve patient care in the state of Hawai'i and throughout the Pacific. Through collaborations with JABSOM, community health clinics, health maintenance organizations, hospitals, long-term care centers and retail pharmacies, students develop the skills needed to provide high-quality patient care. This collaboration between pharmacists and physicians will continue to improve the quality and quantity of health care to Hawaii residents.

Disclosure Statement

Preceptor survey and analysis of results was performed by the primary author. All authors of the manuscript have no financial arrangements that would conflict with the content of this submission. Survey study was reviewed and approved by the University of Hawai'i Institute Research Board for Human Subjects in March 2009.

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Getting the Patients' Perspective: A Survey of Diabetes Services on Guam

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Abstract

The prevention and control of diabetes is a major public health priority for the US Territory of Guam. As part of a strategic planning process, a survey of diabetes patients was conducted to determine patients' perceptions of the availability and adequacy of preventive and clinical services to control diabetes. A total of 125 survey questionnaires were distributed to diabetes patients attending either one of the Guam Department of Public Health and Social Services Community Health Centers or a private Internal Medicine/Endocrinology clinical practice of the only endocrinologist on the island. All 125 questionnaires were returned. Respondents were highly aware of the duration of their diabetes, and almost 75% have had the opportunity to discuss the chronic nature of the illness and the importance of key lifestyle changes to help prevent or retard the progression of the disease. However, almost 40% of patients were not aware of the type of diabetes they had, and one in five have not received diabetes self-management education from their health care providers. Key interventions, such as nutritional counseling, brief tobacco cessation interventions, regular eye and foot examinations and immunization services were not being provided to 30 to 60% of patients, despite clinical practice guidelines that recommend these interventions for all diabetics. While over half of respondents were generally satisfied with the quality of preventive and routine medical care that they receive from their service providers, they identified the need for better quality diabetes self-management education, preventive services, enhanced access to specialists and specialized care, especially for diabetes-related complications, and better financial support to assist them in meeting the costs of chronic care and medications. The feedback from these respondents should provide guidance regarding service gaps and needs as the Department of Public Health and Social Services and its community partners collaboratively develop a strategic plan to better address diabetes prevention and control on Guam. The information should also serve to direct quality improvement efforts to enhance existing diabetes services on the island.

Introduction

Diabetes exacts a significant burden on Guam's people. Over the past decades, diabetes has risen in prevalence and currently is the fourth leading cause of mortality and morbidity on the island.[1] Diabetes also directly contributes to two of the top three causes of death on Guam---namely, heart disease and stroke. The health burden from this chronic and disabling condition is compounded by the economic costs of diabetes treatment and care and the impaired quality of life that results from uncontrolled diabetes. Thus, the prevention and control of diabetes is a major public health priority for Guam.

The Guam Department of Public Health and Social Services (DPHSS) is the designated lead agency responsible for addressing the problem of diabetes. In recent years, the DPHSS Diabetes Prevention and Control Program initiated partnerships with other stakeholders in the community to create a community Diabetes Control Coalition that would oversee and guide the creation of a Comprehensive Diabetes Control Plan for the island.

The coalition recognized the importance of mapping out existing diabetes prevention and control resources within the island to identify needs and service gaps, and to assess if existing services are meeting accepted standards of practice. The importance of obtaining feedback from the end-users of the services — diabetes patients — was deemed essential to provide a more comprehensive picture regarding the availability and utilization of public health and clinical services to prevent or control diabetes.

This report contains the results of a survey to determine diabetes patients' perceptions of the availability and adequacy of preventive and clinical services to control diabetes. While primarily intended as a planning tool for Guam's Diabetes Prevention and Control Program, the survey provides useful feedback to assist diabetes service providers, community advocates and diabetes patients and their families in improving the quality of diabetes services on Guam.

Methods

DPHSS contracted Health Partners, L.L.C., a private sector company providing technical assistance and consulting services in public health, to develop a survey instrument and conduct the diabetes prevention and control patient survey. Following a review of existing survey instruments, a draft survey was developed in close collaboration with the DPHSS Diabetes Control and Prevention program staff. The survey instrument and methodology underwent a process of peer review by the Guam Diabetes Control Coalition, to ensure technical accuracy and compliance with ethical standards.

The survey was conducted in 2 clinical settings: the DPHSS Community Health Centers (representing patients utilizing public sector health services) and a private Internal Medicine/Endocrinology clinic (representing patients utilizing private sector facilities). The private clinic was chosen specifically because its main clinician is Guam's only endocrinologist, with the largest concentration of diabetes patients among other private sector clinical providers on the island.

Survey forms were distributed by fax, e-mail or in person to each of the survey sites. Follow-up phone calls and visits were conducted to maximize the response rate. All survey participants were informed at the outset of the nature and purpose of the survey, and informed consent was obtained from each participant.

An electronic database was developed using Microsoft Excel to record entries in submitted survey forms. Descriptive statistics were applied to the data collected. Chi square analysis was utilized to determine if differences in diabetes service utilization and patient satisfaction existed between patients utilizing the private clinic and patients using the community health centers.

Results

Response Rate:

A total of 125 survey forms were distributed to patients with a diagnosis of diabetes attending the DPHSS Community Health

Centers (n=65) or the private clinic (n=60) during the 2 weeks allotted for the survey. All 125 survey forms were completed and returned for analysis.

Patient Demographics

Of the 125 diabetes patients completing the survey, 63 (50%) were women and 57 (46%) were men; 5 (4%) respondents did not provide data on sex. 124 respondents provided data on age (Figure 1). Respondents' ages ranged from 13 years to 84 years, with a mean of 53.45. The median age was 54 years, and the mode was 59 years. There were no statistically significant differences in age and sex composition between the public and private sector patients.

Overall, fifty percent (50%) of survey respondents were Chamorros, while Filipinos comprised one-fourth and Micronesians made up nearly one-fifth of survey respondents. Based on the relative proportion of each ethnic group in the general population, Chamorros and Micronesians were over-represented while other Asians and other ethnicities were under-represented among patients with diabetes at the survey sites. The public sector patients were more likely to be Chamorro or other Micronesian, while the private sector patients were more likely to be Filipino, other Asian or Caucasian (p<0.0000044).

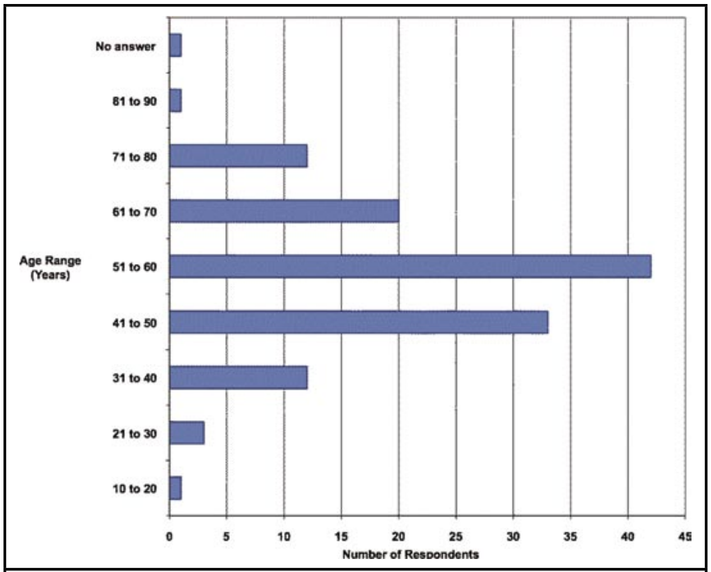

Figure 1.— Age Distribution of Respondents

Type and Duration of Diabetes

More than half (53%) of the diabetes patients surveyed knew that they had Type 2 (non insulin-dependent) diabetes. Five percent (5%) were aware that they had Type 1 (insulin-dependent) diabetes. Close to two-fifths (38%) of respondents reported not knowing what type of diabetes they had.

Over 62% of the survey respondents were diagnosed more than 5 years ago. Thirty percent (30%) were diagnosed within the past 5 years, while only 5.6% were diagnosed within the past year. Only 2 persons did not respond to this question, indicating a high level of awareness of the duration of diabetes since diagnosis.

Self-Care Practices

Over half (51%) of patients checked their blood sugar at home regularly, while 4% did so occasionally, and 1% did so rarely. Forty-three percent (43%) did not check their blood sugar at home at all. Patients attending the private clinic were more likely to check their blood sugar levels at home than patients attending the community center clinics (p<0.0000045). Close to 80% reported taking oral medication to control their diabetes, while 13% did not currently use oral medication. Forty percent (40%) of respondents reported injecting insulin to control their blood sugar levels.

Information and General Patient Education on Diabetes Self-Management

The majority (93%) of patients obtained information about diabetes from their physicians. Patients also cited the Department of Public Health and Social Services (33%), family members (28%), the internet (20%), media (19%) and the Guam Diabetes Association (14%) as sources of information. Almost 75% of patients have had someone who adequately explained to them that diabetes is a chronic disease that requires lifestyle adjustments, and also identified what lifestyle changes are needed to control blood sugar. There were no statistically significant differences between private clinic patients and community center patients with regard to receiving adequate information on diabetes and diabetes self-management. Over half of respondents (51.6%) had this discussion with their physician, and 10% reported having received this information from DPHSS. However, nearly one in five (18%) stated that they have not had this critical discussion on diabetes self-management.

Diabetes Self-Management

More than half (53.6%) of the respondents stated that they had received counseling regarding nutrition and appropriate dietary choices for diabetics, but 40% reported never having received this type of counseling. Of those who received nutrition counseling, 22.4% identified their doctor as the source of counseling, 16.4% reported receiving counseling from DPHSS, 14.9% received counseling from the Seventh Day Adventist (SDA) clinic and 10.4% stated they were counseled by other health professionals. Patients attending the private clinic were more likely to have received nutrition and dietary counseling than community center patients (p<0.036).

Of the 125 diabetes patients, 46.4% have never smoked or used other tobacco products, while 28.8% are former smokers/tobacco users. About one in five (22.4%) are current smokers/tobacco users. Community center patients were more likely to be current or former tobacco users than private clinic patients (p<0.011). Because tobacco use in any form seriously compounds the complications of diabetes, it is standard clinical practice to strongly advise and assist all diabetics who smoke or use tobacco to quit tobacco use. Among the patients surveyed on Guam who are former or current tobacco users, 55.9% reported receiving advice to stop using tobacco, while 37.6% reported not having received this advice. Community center patients were equally likely to receive advice to quit tobacco use as private clinic patients. Of those who received advice to quit tobacco use, 65.4% obtained this from their physician/diabetes service provider, 19.2% from family and friends, and 1.9% from the Veterans Affairs (VA) Hospital.

Preventive Care

Current standards for preventive care of diabetics recommend vaccination against pneumococcal pneumonia and annual flu vaccinations. Only 37.6% of the survey respondents had received the pneumococcal vaccine, while 67.2% reported obtaining annual influenza immunization. Of those who had not received the recommended vaccinations, only one-fifth (20.0%) were offered the pneumococcal vaccine and 14% were offered the flu vaccine by their doctor. Patients attending the private clinic were more likely to have received the flu vaccine annually ($p<0.001$) than patients at the community health centers.

Diabetics need to have regular eye and foot examinations to screen for early diabetic eye and/or foot disease. Among the survey respondents, 70.4% reported having had their eyes checked for diabetic eye disease. Sixty-eight percent (68%) stated that their feet are regularly checked for wounds and infections. These percentages are consistent with reported figures based on the Behavioral Risk Factor Surveillance System results.[2] Private clinic patients were more likely to have had their eyes checked for signs of diabetic eye disease than community center patients ($p<0.0013$). No differences were noted between the two subsets of respondents with regard to foot examination.

Other Types of Care

12.8% of survey respondents indicated the need for personal counseling to help them deal with the chronic nature of their disease. Only nine (7.2%) patients reported needing to go off-island to receive care for their diabetes or a diabetes-related complication. Of the 4 patients who provided additional information regarding their off-island care, 2 (50%) were for diagnostic and treatment procedures that are not currently available on Guam.

Perceptions of Diabetes Services on Guam

Participants were asked about their satisfaction regarding a variety of preventive, routine and specialized clinical services for diabetics on Guam. Overall, a little over half (56%) of survey respondents reported being content with the quality and types of diabetes services on Guam. Table 1 summarizes the percentage of patients who reported that they were satisfied with specific types of services for diabetics on Guam. Community health center patients were more likely to be satisfied with nutritional counseling services ($p<0.0139$), tobacco cessation advice ($p<0.0149$) and other support services for diabetics ($p<0.00658$) than private clinic patients.

Respondents were also asked which services they felt were lacking or inadequately provided on Guam. Respondents who were not satisfied with existing diabetes services identified the following as unavailable or inadequate on Guam (Table 2). The top 5 services that respondents felt needed to be prioritized for the island's diabetic patients were:

- Education on prevention and healthy lifestyles (diabetes self-management education)
- Specialist services, specifically for endocrinologists and cardiologists, and specialized clinical services, particularly for diabetes-related cardiac problems
- Financial assistance, especially for the uninsured/underinsured
- Preventive services, including tobacco cessation assistance
- Lifestyle management services, including nutrition and dietary counseling

Table 1.— Percentage of Diabetes Patients Who Think that the Following Diabetes-related Services are Available and Adequately Provided on Guam

Type of service available on Guam	% of patients satisfied with this service on Guam % (95% CI)
Education about diabetes	62.4% (+/- 8.49%)
Nutrition and dietary counseling for diabetics	61.6% (+/- 8.53%)
Exercise facilities	57.6% (+/- 8.66%)
Advice and assistance to quit smoking/tobacco use	56.8% (+/- 8.68%)
Immunization for diabetics	63.2% (+/- 8.45%)
Routine medical care for diabetics	67.2% (+/- 8.23%)
Specialized care for diabetics (specialist services and care for diabetes-related complications)	54.4% (+/- 8.73%)
Dialysis services	54.4% (+/- 8.73%)
Medical care for diabetes-related heart disease	41.6% (+/- 8.64%)
Medical care for diabetes-related stroke	47.2% (+/- 8.75%)
Medical care for diabetes-related eye disease	55.2% (+/- 8.72%)
Advocacy for policies and programs to prevent and treat diabetes	47.2% (+/- 8.75%)
Support services for diabetics	46.4% (+/-8.74%)

Table 2.— Diabetes services identified by survey respondents as lacking or inadequate on Guam

Type of service	% of patients identifying this service as lacking on Guam % (95% CI)
Public awareness and education about diabetes	15.0% (+/- 11.07%)
Lifestyle management including nutrition and dietary counseling for diabetics	15.0% (+/- 11.07%)
Greater access to specialists and specialty care	10.0% (+/- 9.3%)
Assistance to improve self-care skills	7.5% (+/- 8.16%)
Financial assistance/better insurance coverage for diabetics	7.5% (+/- 8.16%)
Emergency care for diabetic emergencies	5.0% (+/- 6.75%)
Home care for elderly diabetics	2.5% (+/- 4.84%)
Care giver education	2.5% (+/- 4.84%)
Services for physically disabled diabetic patients	2.5% (+/- 4.84%)
Properly equipped wellness center in every mayor's office	2.5% (+/- 4.84%)
Increased government support to diabetes programs	2.5% (+/- 4.84%)
Insulin pump therapy	2.5% (+/- 4.84%)

Discussion

This was a voluntary survey using a convenience sample of respondents attending either an Internal Medicine/Endocrinology private practice clinic or the Community Health Centers of the DPHSS. The diabetes patients who participated in this survey comprised a mix of those who seek services in the public sector and those who use private sector health services. Recently released data indicate that about 43% of Guam's uninsured and underinsured seek care primarily from the community health centers, and about 18% of the uninsured are diagnosed diabetics.[3] The rest of the patients attending the community health centers are predominantly covered under the federal Medicaid program or the locally administered Medically Indigent Program (MIP). In contrast, patients seeking care from private clinics tend to have private insurance. Thus, the respondents of this survey present a spectrum of health care coverage, with private clinic patients representing individuals with private insurance and community health center patients representing those with social insurance or are uninsured.

The sample's sex distribution was consistent with the composition of Guam's general population. The relatively older median/mean age of the pool of respondents reflected the chronic nature of Type 2 diabetes, with increasing prevalence among older individuals, as well as the nature of the clinics, catering to mostly adult patients, from which the convenience sample was drawn. The higher proportion of Chamorro and other Micronesian respondents paralleled the increased prevalence of diabetes among these ethnic sub-groups.[4] Chamorro and other Micronesians are more likely to have social insurance or be uninsured in the general population,[5] which would explain the higher proportion of these ethnic sub-groups attending the community health centers.

The survey respondents were not drawn from a random sample of the general population, and the results from this survey cannot be generalized to the entire population of diabetics on Guam. However, the survey population was representative of that segment of Guam's diabetic population that actively seeks care for their disease. Thus, for the purposes of this survey (to assess the availability and adequacy of services for diabetics on Guam from the patients' perspective), this was a well-informed group of individuals with valuable feedback for the DPHSS Diabetes Prevention and Control Program and its community partners and stakeholders.

Because diabetes is a chronic disease that necessitates substantial changes in lifestyle and personal behavior, it is essential that all patients receive sufficient education regarding effective interventions and healthy lifestyle practices to control diabetes and prevent its complications. The survey demonstrated that majority of patients have received education about the chronic nature of diabetes and the lifestyle adjustments needed to control blood sugar, with no difference noted between private and public sector patients. Patients' physicians and DPHSS were the most frequently identified sources for this information. However, nearly one in five respondents stated that they have not had this critical discussion, highlighting the need for greater efforts to expand diabetes self-management education and outreach to cover all diabetic patients.

In January 2009, the American Diabetes Association published a set of updated clinical practice recommendations for the prevention and control of diabetes, derived from an extensive review of the evidence and from expert opinion. These recommendations affirmed that certain clinical interventions should be universally implemented for all diabetes patients.[6] The feedback from the patients covered under this survey indicated essential diabetes-related services on Guam are failing to reach the desired 100% coverage, as recommended by the American Diabetes Association. Diabetes health service providers are ensuring regular eye and foot examinations and annual flu vaccinations for about 70% of the diabetic patients surveyed, but tobacco cessation advice, nutrition and dietary counseling and pneumococcal vaccination are being offered by these providers to less than half of diabetic patients (Figure 2). Private clinic patients were more likely to receive nutritional counseling, annual flu vaccinations and diabetic eye examinations than patients attending community health centers. In part, this may be ascribed to the greater flexibility afforded by private insurance, which covers the additional costs of these services and allows covered individuals to select from among numerous private sector providers, many of whom do not accept social insurance. While the community centers have a nutritionist on staff, the demand for services often exceeds the centers' current capacity to meet the service needs, and at present the centers do not have optometrists or ophthalmologists. This is a critical service gap and strategic efforts are needed to ensure that essential preventive and clinical services are made available to all patients with diabetes, regardless of insurance coverage.

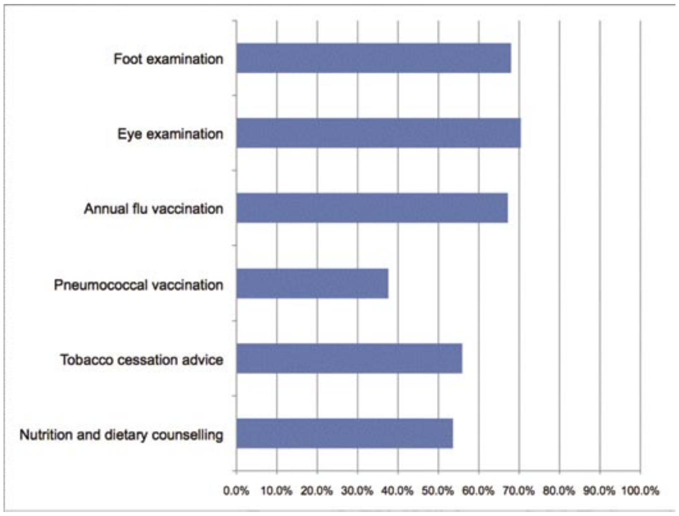

Figure 2.— Adherence to the American Diabetes Association's Clinical Practice Recommendations on Guam, Based on Patient Self-Report

Patients on Guam are more likely to be satisfied with preventive, lifestyle management and routine clinical services and less likely to be content with specialized care for diabetes complications and support services such as mental health counseling. However, patients are also most likely to identify education, prevention and lifestyle management as service gaps on the island. This could be explained by noting that while diabetes self-management education and preventive services are readily available, the quality and coverage of these services need to be enhanced, particularly when access to these services is limited by insurance coverage. On the other hand, access to specialized care and ancillary/support services are suboptimal because of the paucity of service providers for these kinds of services. These findings have implications for service improvement, health care financing and human health resource planning, given the growing burden of diabetes on the island.

Financial assistance for diabetes care and medications was also identified as a priority for Guam. The need for financial support impacts upon access to specialists and specialty care, as a number of survey respondents indicated that their lack of private insurance hindered them from availing of the services of relevant specialists on Guam who work in the private sector. Data from this survey also indicates that insurance status may affect diabetics' access to essential preventive services. This highlights the importance of ensuring more equitable access to preventive and specialty care through innovative financing for diabetes services.

The successful prevention and control of diabetes in a high-prevalence area such as Guam requires public health program planning that quickly and effectively responds to community needs. Most quality assurance processes in public health rely on data from the point of care, through chart audits and surveys of service providers. However, chronic diseases such as diabetes that rely heavily on lifestyle changes for prevention and control are dependent on patient comprehension and engagement for success. For these diseases, patient feedback is crucial for quality improvement. This patient survey provides information on service gaps and needs that will guide the development of Guam's Comprehensive Diabetes Control Plan. At the same time, it delineates areas for quality improvement to inform diabetes control program planners, service providers and community advocates in both public and private sectors how best to strengthen and enhance existing preventive and clinical services to stem the rising burden of diabetes on Guam.

Disclosures

This patient survey regarding patients' experiences and feedback on diabetes services on Guam was developed by Health Partners, L.L.C. for the Guam Department of Public Health and Social Services (DPHSS) Diabetes Prevention and Control Program, through a contractual agreement. Dr. Annette M. David of Health Partners, L.L.C. conceptualized and developed the survey methodology used to collect information, and served as the Technical Writer/Author for this publication. Dr. Joel Marc C. Rubio provided technical assistance for the manuscript. Ms. Jeanine Pacson was the Research Assistant for this project, and was responsible for data collection and data entry.

Ms. Rose V. Zabala, MSW and Mr. Patrick S. Luces (DPHSS) provided oversight and guidance for the project. Mr. J. Peter Roberto, Director, DPHSS, was the overall project leader. Members of the Guam Diabetes Control Coalition, under the leadership of Dr. Keith Horinouchi, Dr. Patrick Santos and Ms. Doris Crisostomo, provided assistance in identifying survey participants and reviewing the survey instrument and methodology for technical accuracy and compliance with ethical standards. Ms. Linda Unpingco-Denorcey, Ms. Mary Mantanane and Ms. Lora Castro facilitated the conduct of the survey at the DPHSS Community Health Centers, while Dr. Joel Marc C. Rubio, Ms. Heidi Cameron, Ms. Nora Jackson and Ms. Jacqueline Dayrit facilitated the conduct of the survey at the Health Partners, L.L.C. clinic.

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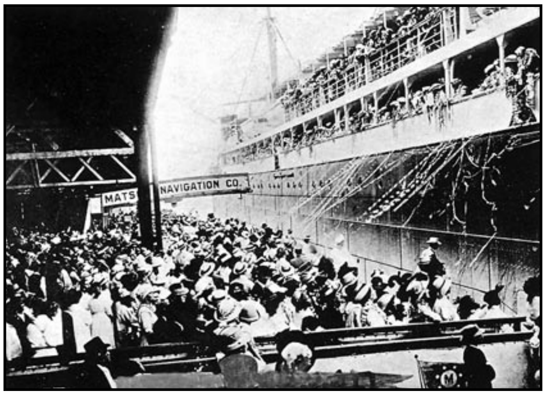

Guam's Influenza Epidemic(s) of 2009

Robert L. Haddock DVM, MPH; Yvonne S.N. Damian RN; Lourdes A. Duguies DVM, MPH; and Yvette C. Paulino PhD

Abstract

Objective: *To characterize syndromic and laboratory surveillance for influenza on Guam during 2009, including the relation of cases to the timing of swine flu-related stories published in a local newspaper.*
Methods: *Data utilized in the study included clinical diagnoses of acute respiratory infection (ARI) in the Emergency Department log of Guam's only civilian hospital (syndromic surveillance) and laboratory confirmed cases of Influenza A (rapid test) and novel 2009 H1N1 influenza virus (RT-PCR subtyping) from both civilian and military sources. In addition, the number of "swine flu" stories appearing weekly in a local paper were tallied.*
Results: *What initially appeared to be an epidemic occurring in 2 distinct waves was shown to be separate epidemics of "seasonal flu" and "swine flu." There was a strong correlation between the timing of "swine flu"stories appearing in local media and the diagnosis of ARI.*
Conclusion: *Syndromic surveillance is useful for the early detection of disease outbreaks but laboratory results may be necessary in order to gain a clear epidemiologic picture of a disease incident.*

Introduction

In 1974 the investigation of an unusual food poisoning incident on Guam led to the discovery of the first case of cholera to be identified in Micronesia.[1] Since it was suspected that additional unidentified cases of cholera might be occurring on the island, a program of syndromic disease surveillance (monitoring groups of signs and symptoms rather than only laboratory-confirmed disease) was initiated to detect possible otherwise unobserved disease trends. Since then daily entries in the Guam Memorial Hospital Authority (GMHA-Guam's sole civilian hospital) Emergency Department patient log have been reviewed and clinical diagnoses tallied. In addition to monitoring the levels of diarrheal disease diagnosed, the numbers of acute respiratory infections (ARI – including flu, flu syndrome, pharyngitis, URI, bronchitis, pneumonia, etc.), chronic respiratory disease (asthma, chronic obstructive pulmonary disease), rash illnesses accompanied by fever, influenza or influenza-like-illnesses, conjunctivitis, total patients seen and total patients admitted to hospital are also collected.[2]

An early evaluation of 2009 syndromic acute respiratory infection diagnoses (ARI diagnoses through week 41) treated in the Guam Memorial Hospital Emergency Department (GMH-ED) demonstrated two peaks in 2009. It was hypothesized that these peaks may have reflected successive waves of 2009 H1N1 influenza (Figure 1).[3] As additional data for all of 2009 became available this conclusion was reexamined.

Methods

To examine the hypothesis that the 2009 H1N1 epidemic on Guam had occurred in 2 waves, 4 sets of disease data for calendar year 2009 were collected and compared. In addition to syndromic ARI cases, these data sets included island-wide (including military, public health and private clinics) laboratory-confirmed H1N1 cases and cases of rapid-test positive influenza A that were negative for H1N1 (Figure 2). Patient specimens positive for influenza A by rapid test

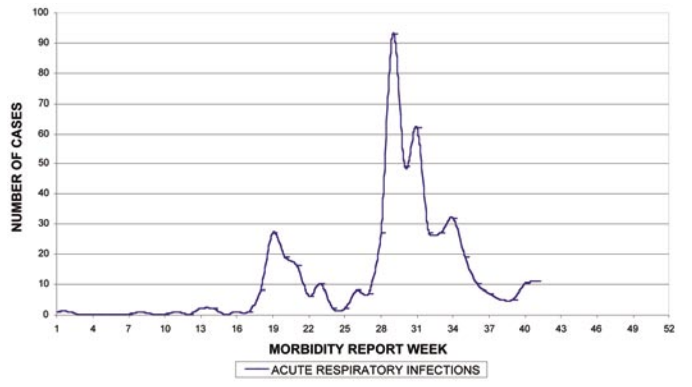

Figure 1.— Cases of syndromic ARI seen in the GMH-ER during the first 41 weeks in 2009.

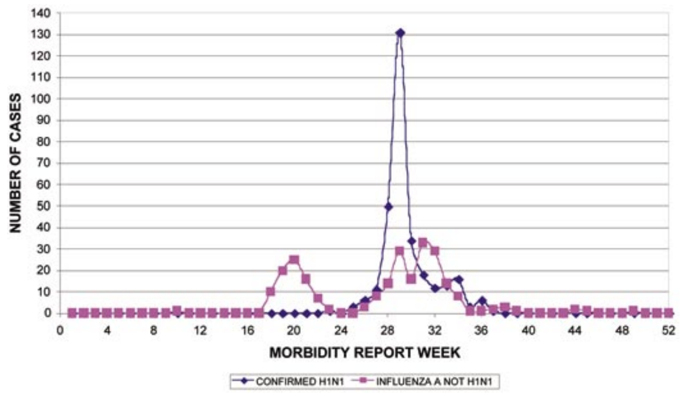

Figure 2.— Comparison of confirmed H1N1 and "other" influenza A cases, Guam, 2009.

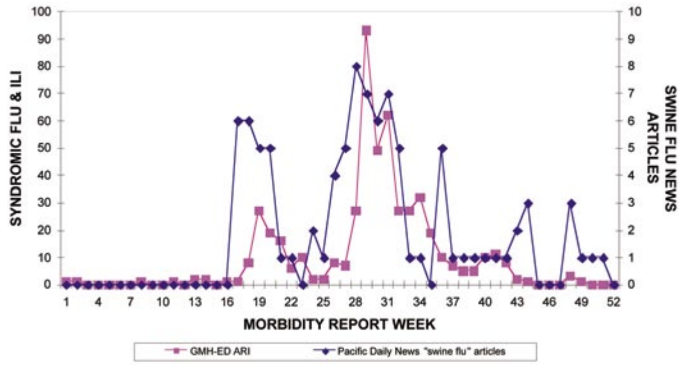

Figure 3.— Comparison of number of published "swine flu" news articles and hospital Emergency Room ARI data by week, Guam, 2009.

were submitted either to the WHO Collaborating Laboratory in Melbourne, Australia (civilian specimens) or the US Naval Research Center, San Diego, California (military specimens). Because it was suspected that news stories appearing in local media about swine flu cases, first in Mexico and later in the US and world-wide, may have influenced people to seek medical attention, an analysis of news stories appearing in Guam's major newspaper (Pacific Daily News) was undertaken. By visiting the paper's web page (www.guampdn.com) and using the search engine provided, it was possible to tally the number of news stories about swine flu that appeared in the paper each week during 2009 and compare these figures with the number of ARI cases recorded (Figure 3). Statistical analysis software (SAS®) Institute Inc., Version 9, Cary, North Carolina, 2008) was used to calculate a Pearson's correlation coefficient to quantify the linear relationship between the number of news stories and the number of ARI diagnoses.

Results

Syndromic surveillance data of ARI collected from the GMHA Emergency Department log during 2009 suggested that there may have been 2 "waves" of the 2009 swine flu epidemic on Guam, the first beginning in early May (week 18) and lasting for 6 weeks and a second larger wave beginning in late June (week 26) and lasting for 18 weeks [Fig. 1]. However, when the final count for the year of laboratory-confirmed influenza cases reported to Guam Public Health by both civilian and military health providers was available it became clear that it was influenza A viruses other than H1N1 that had occurred in 2 waves and that Guam's H1N1 cases had occurred in a single rather sharply demarcated wave beginning during the 23rd week (week ending June 13, 2009) and disappearing during week 37 (week ending September 19, 2009)[Fig, 2].

Analysis of news stories appearing in Guam's major newspaper (Pacific Daily News) revealed a striking positive correlation between the timing of swine flu articles and the number of patients seen in the ER and diagnosed with ARI [Fig. 3] (Pearson correlation coefficient=0.647, $P<0.05$) with each of the two major peaks in the number of ARI illnesses being preceded by a peak in swine flu news stories.

Discussion

Along with most other areas of the world, Guam experienced an epidemic of Pandemic (H1N1) influenza virus (commonly, if inappropriately, referred to as swine flu) during 2009. This particular flu virus proved to not be particularly pathogenic; a total of 337 cases of laboratory-confirmed H1N1 and 2 deaths were reported to Guam Public Health for a case mortality rate of 0.6% (the U.S. rate may have been approximately 2.7%[4]). In contrast, worldwide there were 72 cases and 32 deaths of H5N1 (avian flu) in 2009 giving a case mortality rate of 44.4%. Fortunately the avian flu virus has so far not developed the ability to spread efficiently from person to person so its capacity to cause widespread epidemics in the human population has been limited.

There could be several explanations for the correlation observed between local news stories and the incidence of acute respiratory disease seen in the local Emergency Department. First off, discarding the possibility that the flu virus was being spread by the local newspaper (as such a scenario is not consistent with current knowledge about the epidemiology of the H1N1 flu virus which has shown that it was spread efficiently from person to person[5,6]) what seems plausible is that as people read stories about the spread of swine flu in Mexico and the United States they became increasingly concerned about their own health and were more likely to seek medical intervention if they developed flu-like symptoms. In addition, once physicians were alerted to the fact that a novel influenza virus was rapidly spreading throughout the world, they may have been more likely to consider influenza as an appropriate diagnosis and to report suspect cases to public health authorities.

Although this study demonstrated the utility of syndromic surveillance in rapidly identifying a disease outbreak, there were also some limitations. One was lack of inclusion of syndromic ARI data from the US Naval Hospital Guam and public or private medical clinics other than the GMH-ED. Inclusion of this information would have increased the total number of clinical diagnoses and would have changed the Pearson correlation coefficient. A second limitation was potential differences in clinical diagnoses by individual attending physicians in the GMH-ED. This may have resulted in missed cases, both clinical and laboratory confirmed. Other factors such as the demographics of those who read the newspaper and those diagnosed with ARI or influenza were not available for analysis. These measures could have helped further clarify the association between the published swine flu articles and the clinical diagnoses of ARI.

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New Hospital Medical Libraries in Micronesia

Arlene Cohen, Pacific Islands Library Consultant and Alice Hadley, US Naval Hospital Guam Medical Librarian

New medical libraries are rapidly populating the hospitals in Micronesia. The most recent is the Commonwealth Health Center Medical Library in Saipan, formally opening on December 1, 2009, with Berlinda Quitano as their librarian. Only two weeks before, the Pohnpei State Medical Library opened in Kolonia on November 20, 2009 with Merihna Lucios appointed as their librarian.

These two new libraries, along with several others are being made possible through two generous grants from the Robert Wood Johnson Foundation (RWJF) to establish or rebuild nine hospital medical libraries in the US-affiliated Pacific Islands. This exciting endeavor began in January 2008 when the RWJF awarded the Ayuda Foundation in Guam a $49,000 year-long grant to support the rebuilding of the Yap State Hospital Durand Medical Library destroyed by Typhoon Sudal in 2004. The RWJF grant was written and implemented by Arlene Cohen, a retired University of Guam Librarian and Alice Hadley, the US Naval Hospital Guam Medical Librarian, together with Carlotta Leon Guerrero, the Ayuda Foundation Executive Director, and Walden Weilbacher, the Association of Pacific Island Legislatures Secretariat and member of the Ayuda Foundation Board.

In April, 2008, after ordering the books, computers, software and cataloging materials, Cohen and Hadley visited Yap to work with Charlene Laamtal, the newly appointed medical librarian. While in Yap, they organized the initial 150 book collection, installed the library automation system and they taught her skills to manage and promote the library and the library was formally opened on April 11, 2008.

After their April 2008 visit toYap, Hadley and Cohen were so excited at the success of the project, they asked Leon Guerrero and the RWJF if they would be willing to entertain a new grant to replicate the Yap project, establishing new hospital medical libraries throughout the eight other US-affiliated Pacific Islands state hospitals in Palau, the FSM, the Marshall Islands, American Samoa, the CNMI and Guam. All agreed, and after a *Needs Assessment* was done by each island, they worked with Michael Epp, Executive Director of the Pacific Islands Health Officers Associate, to draw up a *Memorandum of Understanding* (MOU*)*. The MOU clearly defined the commitments implied in the project and were signed by each respective interested Health Minister, thus assuring the future sustainability of the libraries. These commitments included each hospital providing a librarian, space for the library, Internet access, and a future budget line item for library materials, and support for the librarian's involvement in PIALA. The grant was designed to provide funding for books, computers, library automation software, cataloging supplies and training. Happily, in December 2008, RWJF awarded the Ayuda Foundation $390,000. for the project, titled *Replicating the Yap State Hospital Medical Library Project in Hospitals throughout the U.S.-affiliated Pacific Islands*.

In mid-2008, the Belau National Hospital, in trying to address the critical need for medical information access, appointed Sunshine Garcia as its Medical Librarian to reestablish its outdated and disorganized hospital medical library. Subsequently, and although the RWJF grant had only then been submitted, in November 2008, Cohen and Hadley visited the Belau National Hospital Library to assist Garcia in weeding the collection, setting up the library automation system, and training her on its use. Soon after the grant was awarded, orders were placed for over 100 new books, computers, and cataloging supplies and the Belau National Hospital Library is now fully functional.

The second new library established under the second RWJF grant was at the LBJ Tropical Medical Center Medical in Pago Pago, American Samoa. Early in March 2009, Ann Fatima Lafaele was appointed its Medical Librarian and soon after, orders were placed for new books, computers, a multi-media projector and cataloging supplies. In May, Hadley traveled to Pago Pago to set up the library, which was formally opened May 29, 2009.

In mid-August, Majuro Hospital in the Marshall Islands appointed Leilani Lanwi as the medical librarian and work on establishing the medical library is progressing. The formal opening is scheduled early in 2010.

Meanwhile, the Guam Memorial Hospital (GMH) is in the process of hiring a Medical Librarian. Chuuk and Kosrae are still working on appointing their medical librarians and hopefully, work on these hospital medical libraries will begin in the near future. Recently, Cohen and Hadley had an article about the project accepted for publication in the next issue of the *Pacific Health Dialog: Journal of Community Health and Clinical Medicine for the Pacific*. The grant began in January 2009 and runs through June 2010.

Last year, in realizing the importance of this project, Dr. Mark Durand, the former Yap State Director of Health Services wrote "A lot of health workers get comfortable with their current practice and wait for workshops to come around for new ideas. A library is more than a physical installation; it is the manifestation of a state of mind which values inquiry, fostering new ideas."[1]

By having easy access to books, the Internet and other information resources, we foster – as Dr. Durand went on to say – local "information power" for those ready to embrace it. In establishing these medical libraries, the message conveyed is you can take the initiative to question and a place exists to support that questioning.

The views expressed in this article are those of the authors and do not reflect the official policy or position of the US Navy, Department of Defense of the US government.

Reference

1. E-mail message from Dr. Mark Durand to Arlene Cohen dated July 12, 2008.

Developing the Rural Primary Care Workforce in Hawai‘i – A 10-Point Plan

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Abstract

The shortage of physicians and resultant lack of access to care particularly on the rural neighbor islands of Hawai‘i has been well described. A recent report in the December issue of this journal by Withy, et al. documents a current shortage of 45 physicians on the Big Island.[1] *Similar reports suggest that Hawai‘i's physician workforce lags 20% behind physician to population ratios in the continental US. It is projected that the aging population and the heavy burden of chronic disease will increase demand for health services by 40% by 2020 and even higher for specialties that focus on the care of elders. The existing physician shortage is heightened by the high percentage of doctors reaching retirement age. High business and living costs coupled with low reimbursement for health services makes it difficult to be competitive when recruiting physicians to Hawai‘i. Are there evidence based solutions to the state rural primary care workforce crisis? This article describes what is currently in place as well as new initiatives and a ten point plan to lay the framework for an improved state rural training pipeline.*

Current Family Medicine Residency Program

The John A. Burns School of Medicine and the Wahiawa General Hospital in Central O‘ahu have administered a Family Medicine Residency Program for the past 15 years. Graduating the first class in 1996, the mission of the Family Medicine Residency Program (FMRP) encompasses producing clinical excellence in resident physicians, producing physicians who will practice effectively in rural settings of Hawai‘i and the Pacific, and who will work to meet the health needs of the indigenous Native Hawaiians and other disenfranchised populations. The three year curriculum reflects the Accreditation Council on Graduate Medical Education (ACGME) nationally mandated curriculum, however there is an emphasis on rural health training, underserved health care, and health care for the indigenous people of the Pacific. The current program has obtained the high standard of two consecutive five year accreditation cycles, the longest period awarded by the ACGME.

The Family Medicine Residency Program was purposely situated in a rural area to break away from the urban training pattern that is prevalent in the state, and to train physicians to serve in the rural and underserved areas of the United States and the Pacific Basin. The bulk of inpatient medical training occurs at the primary sponsoring hospital, Wahiawā General Hospital (WGH). Specialty training occurs at Kapiolani Medical Center for Women and Children and The Queen's Medical Center. Rural rotations occur at the Hilo Medical Center where many community physicians support the residency as clinical instructors. Additional longitudinal geriatrics experiences take place in the WGH long-term care (LTC) unit, a 110-bed facility.

Cross-Cultural Curriculum: The Department of Family Medicine and Community Health has a significant research and training mission partnering with organizations in the US Affiliated Pacific Island (USAPI) jurisdictions, including in the past the provision of clinical services in the Republic of the Marshall Islands, Ministry of Health clinics. The department has designed and implemented an innovative cross-cultural curriculum and training program for Family Medicine residents and faculty. The curriculum covers general principles of cross-cultural efficacy, but focuses on the predominantly Native Hawaiian, other Pacific Islanders and Asian cultures in Hawai‘i.[2]

Another unique curricular aspect of this training program involves our work with Marshallese and Micronesian patients. Through a federal grant from the US Department of Energy, the Family Medicine Department helped provide comprehensive health services for the peoples of the Marshall Islands who were exposed to ionizing radiation from the US Pacific Thermo-Nuclear Weapons Testing Programs. Collaborative research and other departmental efforts with Ministries and Departments of Health in the USAPI allow a wide variety of public health research opportunities for the residents.

Impact of Family Medicine Residency Graduates, 1994-2009

Over the past 15 years the Family Medicine Residency Program (FMRP) has been fortunate to recruit diverse, highly capable, enthusiastic future leaders in Family Medicine. To give a perspective on the diversity of the program over the years, 53% are University of Hawai‘i JABSOM graduates who choose to remain and complete their training in Hawai‘i. Fifty-one percent of program graduates are female. Thirty-one percent come from medically underrepresented minority backgrounds including Native Hawaiian (13%), Pacific Islander (3%), Hispanic (10%), and other under-represented minorities (5%).

Currently graduates work in all settings including community health centers, long-term care settings, private practice, managed care settings, as hospitalists, and in academic and administrative roles. Eleven percent of the graduates are full-time academic family physicians who help to train the next generation of medical students and family medicine residents for Hawai‘i and the Pacific Basin. In addition, 28% of graduates voluntarily precept JABSOM students or Family Medicine residents. Following program completion, 80% continue working in Hawai‘i/USAPI or rural/underserved areas on the U.S. mainland. Eleven percent of graduates hold leadership positions in their various organizations.

The Future of Family Medicine in Hawai‘i

Maldistribution of the primary care workforce remains a critical problem in Hawai‘i. A primary mission of the Family Medicine Department has been to train Family Physicians for practice in rural Hawai‘i or the Pacific Basin. Current influences in rural health workforce planning and distribution includes the State Health Planning and Development Agency, Hawai‘i Health Systems Corporation, hospitals that provide care in rural settings, the Hawai‘i Medical Education Council, and others at JABSOM.

Community-based Program Development: A looming physician shortage and the need to develop a robust rural health workforce have been recognized for over a decade. With the understanding that young physicians are likely to practice where they train, there have been efforts to develop a family medicine residency program in Hilo — a workforce shortage area. Faculty was recruited and residents were rotated in Hilo, but issues of financial support led to the closure of the program after several months. About five years ago another effort was launched. With recognition of the difficulty accessing care in East Hawai'i, the Hilo community, Hawai'i Health Services Corporation/Hilo Medical Center and JABSOM mobilized to develop a rural collaborative health workforce pipeline.

Public-Private Funding: Through the efforts of Senators Inouye and Akaka, a CMS demonstration project grant was obtained to lay the foundation for a rural collaborative training site. The HMSA Foundation made a significant grant to support faculty. In addition, in 2007 the Hawaii State legislature recognized the importance of this effort and passed a bill with $4,000,000 to establish a rural primary care training network. Unfortunately these funds were never released. A similar legislative effort in 2009 was also passed but met the same fate. Former Hawai'i Island Mayor Kim, current Mayor Kenoi, the Hawai'i County Council, and the Hilo Medical Center Foundation have been strong supporters and contributors to the development of health capacity on the Big Island. TriWest, the large military insurance plan, provided a substantial educational grant. Central to this effort, the Hilo Medical Center renovated a medical office to become the Hawai'i Island Family Health Center. This public-private partnership funding model has resulted in concrete steps forward and may be recognized as a method to initiate new programs during a time of fiscal restraint.

A Rural Collaborative Training Model: Recognizing that the solution to health workforce must be broad-based, an underlying principle for this program has been to train health workers in teams. Currently, two family physicians, a nurse practitioner, and a pharmacist staff the Hilo office. The UH Department of Psychiatry is developing a telepsychiatry hub to expand behavioral health services. This model, for the first time, creates an innovative collaboration between the UH Manoa Department of Nursing and Dental Hygiene, UH Hilo School of Nursing, UH Hilo College of Pharmacy, and the UH JABSOM Departments of Psychiatry and Family Medicine and Community Health. Students from these programs (pharmacy, nurse practitioner, undergraduate nursing, family medicine and psychiatry residents) will work side by side to fulfill portions of their curriculum at the Hawai'i Island Family Health Center and the Hilo Medical Center. To establish a residency program, the current clinical practice and collaborative training site must not only provide high quality care but also go through a national accreditation process. Nursing, pharmacy and behavioral health curricula must be fully elaborated. New collaborations with the Native Hawaiian Health System and the Bay Clinic Network of Community Heath Centers remain to be forged.

A Statewide Vision: To address the statewide workforce crisis much work remains to be done. New graduate medical education and specialty fellowship programs targeting specific state health needs must be explored. Success of this initial program rests largely on the continued foresight and support from the Big Island medical community. The medical staff has welcomed resident and students over the years to both the hospital and their private offices. This has resulted in at least six recent Family Medicine graduates settling to work in East Hawai'i. Developing opportunities for health professional trainees to experience rural practice is a significant step toward recruiting a stable rural health workforce.

While strengthening the workforce pipeline, improving recruitment and retention are critical steps to ensure the right mix of providers for the community's needs. As UH JABSOM organizes to train the next generation of physicians, health system and practice redesign guided by patient outcomes must be embraced. Instituting functional electronic health records and demonstration projects around the "patient centered medical home"[3](PCMH) will be important initial steps. True collaboration between hospitals, the community, and the university with a robust public-private funding model is a pathway to success. With the lessons learned from the Hawai'i Island Family Health Center rural collaborative training program, new efforts to strengthen the health workforce on other islands can be explored.

A Ten-Point Strategy to Strengthen Hawai'i's Rural Primary Care Workforce

Despite the current fiscal downturn, Hawai'i has many opportunities to restructure and strengthen its health workforce Building on the strengths of the existing programs, the following ten-point strategy to bolster the rural primary care workforce in Hawai'i may serve as a roadmap:

1. Health Workforce Planning Commission. Develop and empower a state-wide health workforce planning commission that combines expertise from rural communities and existing organizations with a specific reporting mandate to the state legislature, DOH and Governor. This commission should include representation from the State Health Planning and Development Agency, Governor's Graduate Medical Education Council, Hawai'i Primary Care Association (HPCA), and others.

2. Linking workforce to state needs. This Workforce Commission should review current numbers of trainees in the health professions with a specific focus on graduate medical education and link training programs and funding to projected state needs. They should report to the legislature and Governor's policy office annually with a list of health workforce funding priorities.

3. Physical Maldistribution. Physician geographic distribution must be addressed by utilizing proven solutions such as locating medical education and health careers training sites in specific areas of need. Some of this work is underway and should continue to be supported through a public-private funding partnership.

4. Teaching Health Centers. A big winner in the recent health reform movement was the federally qualified community health centers. A little known proposal in the reform legislation is to fund teaching health centers (THCs). Essentially community health centers with academic partnerships to support graduate medical education programs, these teaching health centers would provide needed care to underserved communities while also being eligible for federal funding through the Center's for Medicare and Medicaid Services (CMS). JABSOM and the HPCA should partner immediately on a planning phase to allow the state to be competitive in receiving federal funding for THCs. New rural training sites should be developed in teaching health centers whenever feasible.

5. Health outcomes and the Patient Centered Medical Home (PCMH). The PCMH is a strategy to upgrade existing outpatient practices utilizing electronic health records, patient registries, open access scheduling, and other techniques to improve patient outcomes. Several pilot projects are underway in Hawai'i, but clearly not enough is being done. Future physician reimbursement will likely be tied to patient outcomes. Hawai'i should take advantage of federal grants and develop a significant public-private partnership around the implementation of the PCMH. Outpatient components of graduate medical education should be completed in NCQA certified level III patient centered medical homes.

6. Excluded minorities. Hawai'i's strength and uniqueness is in its diversity, yet health disparities of outcome often track along racial and ethnic lines. These disparities must be addressed, beginning with Micronesian migrants and other ethnic minorities. The secluded elderly, particularly non-English speaking or low-literacy elderly must be addressed. Expanding the rural health workforce is a way to address these health disparities.

7. Prevention. Systematic preventive services can save the patient the work of being ill and potentially save unnecessary ER visits and costly hospitalization. Immunizations, tobacco cessation and some cancer screening for example has been shown to be cost effective. Insurance companies have a role and obligation to help by reimbursing a specific basket of evidence based preventive services for all enrollees. Preventive service delivery should be a foundational element in rural workforce development.

8. Team-based collaborative training. The days of the solo practitioner working by themselves are passing by. Team-based collaborative training is a model for the future that will allow comprehensive care for the chronically ill, appropriate transfers to and from the hospital, and efficient preventive service delivery. Positive collaboration with pharmacists, nurses, nurse practitioners, behavioral health specialists, social workers and others should be developed and modeled.

9. Ongoing funding. Recognizing that a strong primary care base is the cornerstone to access and cost control in the health care sector, many states have a line item to support graduate medical education programs in Family Medicine. Line items to support primary care workforce development should be evaluated in the next legislative session. A line item to sustain a statewide rural training network would provide a steady stream of primary care providers to improve access and lower overall health care costs.

10. Social Determinants of Health. Finally, clinical medicine is limited in addressing health across the lifespan. Some public health authorities suggest that most disease is attributable to social and environmental factors, including poverty and educational attainment. Along with evidence based preventive services, the social determinants of health and strong links to our public health colleagues should be a fundamental principle in any rural training program.

Conclusion

Hawai'i has specific geographic challenges to overcome to ensure the best possible health outcomes for our diverse population. Since it takes a minimum of seven years after college to train a physician, it is critical that a rural health workforce pipeline is developed now. As the health workforce ages, interventions must be in place. Failure to act will only present a more difficult and costly situation in the future. Initiating this ten-point strategy will not solve all our health challenges but may provide a launching point for the rural health workforce of the future.

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CANCER RESEARCH CENTER HOTLINE

CARL-WILHELM VOGEL MD, PHD, CONTRIBUTING EDITOR

A Partnership between the Cancer Research Center of Hawai‘i and the University of Guam in Cancer Research, Education, Training, and Outreach

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Cancer Health Disparities

The term cancer health disparities describes the unequal burden of cancer incidence, morbidity, and mortality in different population groups. By and large, the higher burden of cancer is observed in racial or ethnic minorities, immigrant communities, inner city populations, and insular, rural, or otherwise geographically isolated populations. In rare instances, however, the majority Caucasian population suffers a higher burden of cancer, e.g., melanoma. There are multiple and overlapping causes for cancer health disparities, including genetic make up, cultural norms and beliefs, behavior, environmental factors, as well as social aspects such as socio-economic status, poverty, and education. Reducing cancer health disparities is an important and integral component of the nation’s effort to improve the health of all Americans. The science of cancer health disparities aims to better understand the causes of health disparities and to develop better means of prevention, diagnosis, and therapy, although some of the social aspects of cancer health disparities may be beyond the reach of the biomedical community.

Minority Institution/Cancer Center Partnership Program

Given the importance of cancer health disparities, the National Cancer Institute (NCI) is undertaking significant efforts to address the unequal burden of cancer. Through NCI’s Center to Reduce Cancer Health Disparities (CRCHD), multiple programs have been established to address this important public health issue. Here we are reporting on CRCHD’s Minority Institution/Cancer Center Program (MI/CCP) and its implementation by the Cancer Research Center of Hawai‘i (CRCH) and the University of Guam (UOG). The MI/CCP started in 2001 when the NCI initiated this novel program. The underlying concept is to create partnerships between NCI-designated cancer centers, which collectively represent the nation’s powerhouses in cancer research, training, education, outreach, and, where applicable, clinical care with institutions of higher learning which traditionally serve ethnic minorities. The emphasis in these partnerships is on research, but training and outreach are also required components. By pairing researchers from NCI-designated cancer centers with faculty members at a minority-serving institution the intent is to develop the research capacity at minority-serving institutions and simultaneously direct interest and resources at NCI-designated cancer centers to address issues of cancer health disparities. By providing for opportunities in education and training at the undergraduate, graduate, and post-graduate levels for minority students as well as for faculty development at minority institutions, it is intended to grow the number of minority investigators for careers in cancer research with the hope that they may eventually serve their communities. These unique MI/CCP partnerships are funded through U56 Comprehensive Planning Grants (now being phased out by the NCI) and leading to U54 Comprehensive Partnership Grants, both of which are subject to peer review.

The Cancer Research Center of Hawai‘i and University of Guam Partnership

After an exploratory visit by a delegation from CRCH to Guam in 2001, the two institutions decided to engage in a long-term partnership in cancer. The partnership received funding through a U56 Comprehensive Planning Grant in 2003, and was recently awarded a U54 Comprehensive Partnership Grant which provides $12.6 million to the two institutions over the next five years. There are currently only nine U54-funded partnerships in the country (Table 1) of which the CRCH/UOG partnership is characterized by a number of very unique aspects:

- Both the State of Hawai‘i and the Territory of Guam are characterized by two distinct multi-ethnic populations that are very different from any other part of the country. Hawai‘i’s five major ethnic groups include Caucasians, Japanese, Hawaiians/part-Hawaiians, Filipinos, and Chinese. In addition, over 10% of the population is comprised of “other” minorities. In Guam, more than one third of the population is represented by Chamorros/part-Chamorros. In addition there is a relatively large Filipino population along with smaller population groups representing Micronesians, Caucasians, and Asians.

- The CRCH/UOG partnership is the only MI/CCP partnership in the nation where the minority population served by the minority institution is Pacific Islanders.

- The CRCH/UOG partnership is characterized by a very unique geography, with a geographic region that encompasses Hawai‘i, Guam, the Commonwealth of the Northern Mariana Islands and the other US-associated Pacific Island jurisdictions – a region larger than the continental US. The two partner organizations are separated by 3,800 miles, four time zones, and the international date line (Figure 1). The island jurisdictions are distant, fragmented, and isolated. Access to health care services and information is limited and the health care infrastructure is inferior compared to Hawai‘i and the US mainland.

- The unique ethnic and geographic characteristics of the CRCH/UOG partnership provide for unique opportunities in cancer

Table 1.— Current U54 Partnerships.

Partnership	Population Served
Memorial Sloan Kettering Cancer Center and City College of New York	African American
University of Texas-MD Anderson Cancer Center and University of Puerto Rico	Hispanic (Puerto Rico)
University of California at San Diego and San Diego State University	African American, Hispanic, Asian
Johns Hopkins University and Howard University	African American
Vanderbilt-Ingram Cancer Center and Meharry Medical College	African American, Hispanic
University of Alabama at Birmingham, Tuskegee University and Morehouse School of Medicine	African American
Fred Hutchinson Cancer Research Center and New Mexico State University at Las Cruces	Hispanic (U.S. border population)
Arizona Cancer Center and Northern Arizona University	Native Americans
Cancer Research Center of Hawai'i and University of Guam	Pacific Islanders

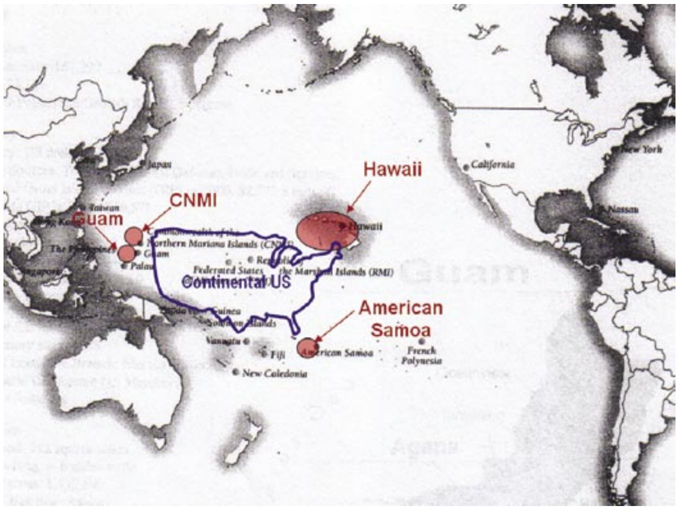

Figure 1.— Map of the Pacific.

research, addressing issues of particular relevance to the island populations served by the partnership. Similarly, unique opportunities are available for cancer education, training, and outreach activities in the region, with Guam being the population center of Micronesia.

In line with the overall objectives of the MI/CCP program, the CRCH/UOG partnership aims to build capacity in cancer research, education and training at the University of Guam, to develop outreach activities to raise the awareness about cancer and cancer prevention in Hawai'i, Guam, and the other US-associated Pacific jurisdictions, and to broaden the involvement of CRCH faculty in addressing cancer health disparities. Specific goals of the partnership include:

- To develop the cancer research capabilities at UOG.
- To increase the number of faculty at UOG engaged in cancer research, training, education, and outreach.
- To increase the number of faculty at UOG who will serve as principal investigators on investigator-initiated grant awards in cancer research.
- To increase the number of peer-reviewed publications by UOG faculty.
- To further develop the focus of CRCH research on cancer health disparities among Pacific Islanders.
- To increase the number of peer-reviewed publications by CRCH faculty addressing cancer health disparities.
- To increase the number of UOG students engaged in cancer research.
- To increase the number of cancer researchers of Pacific Islander ancestry in the United States.
- To raise the awareness of cancer and cancer prevention in the ethnic minority communities served by CRCH and UOG.
- To ultimately reduce the impact of cancer on the populations of Hawai'i, Guam, and the U.S.-associated Pacific Island jurisdictions.

Accomplishments

Since the establishment of the partnership, and with funding from the U56 Comprehensive Planning Grant, significant progress has been made in research, training, and the establishment of the Guam Cancer Registry. In addition, there was an overall impact on cancer awareness and public health policy in Guam.

a) Research. It is fair to say that prior to the initiation of the CRCH/UOG partnership there was no cancer-related research being conducted at UOG. Since 2003, several research projects conducted jointly by UOG and CRCH faculty have been successfully completed. One project, entitled "Advancing a Research Agenda for Tobacco Prevention and Control on Guam" sought to increase capabilities at UOG to conduct research focused on tobacco control and modifiable behaviors, and to establish university-community partnerships to conduct community-based participatory research and awareness programs aimed at tobacco control and cancer prevention. Another project, entitled "Cultivation of Microorganisms from Marine Invertebrates and Screening of Extracts of Pure Compounds for Possible Anti-Cancer Activities" took advantage of UOG's well-established Marine Laboratory and CRCH's Natural Products and Cancer Biology Program, with the goal to isolate and identify novel natural products from Guam's marine biosphere as potential new lead compounds for anti-cancer drugs. A third research product, entitled "Evaluation of Risk Factors for Chronic Disease Among Adults on Guam," developed tools to accurately measure food and nutrition intake, including a food frequency questionnaire used to conduct a survey among adult Chamorros and Filipinos in Guam. Another study entitled "Factors Associated with Betel Nut Use on Guam" analyzed betel nut chewing prevalence, and looked at associations of betel nut use and health-related conditions and behaviors. It is beyond the scope of this manuscript to provide detailed results from these research projects. However, all research projects were successfully conducted and resulted in multiple conference presentations and peer-reviewed publications.[1-9]

b) Training and Faculty Development. Multiple students in Master's Degree programs at UOG completed their Master's thesis research in a cancer related discipline under the mentorship of a UOG faculty member. One Master's student, after graduation from UOG, continued her graduate education at CRCH and received a PhD degree in 2009.[10] Every year since 2003, with support from the U56 Grant, one UOG faculty member spent up to three months at CRCH to develop a collaborative research project with a CRCH faculty member.

c) Guam Cancer Registry. Prior to funding from the U56 Grant, collection of cancer data was limited to analyses of death certificates by the Guam Department of Public Health and Social Services. Over the past six years, with support from the U56 Grant, the Guam Cancer Registry was developed to now facilitate the identification, registration, and review of all available health and vital records for all patients diagnosed with cancer and/or treated on Guam. The U56 Grant served to leverage funding from the Centers from Disease Control and Promotion to expand the Guam Cancer Registry and to build capacity for cancer data collection and reporting in the other 5 U.S.-associated Pacific Island jurisdictions. The Guam Cancer Registry is now a full member of the North American Association of Central Cancer Registries, and provides an important resource for the Territory of Guam, and for current and future research projects as part of the CRCH/UOG partnership. Several manuscripts, as well as the recently published Guam Cancer Facts and Figures 2003-2007, have resulted from the work at the Guam Cancer Registry.[11-15]

d) Overall Impact. In addition to specific progress in U56-funded projects and programs, the CRCH/UOG partnership, directly or indirectly, had a beneficial impact on cancer awareness and public health policy in Guam, with long-lasting beneficial consequences for the Territory of Guam. These include:

- UOG formally established the Cancer Research Center of Guam with its own building on the UOG campus. The building was formally dedicated in May 2004, with the Acting Governor and 80% of all Guam legislators in attendance. May 19, 2004 was officially proclaimed Cancer Research Center of Guam Day by the Governor.

- In 2006, the Board of Regents of UOG declared the UOG campus tobacco-free. Similar rules were subsequently enacted for the Guam Community College, the Governor's complex in Hagatna, and all buildings of the Government of Guam.

- In June 2006, the Guam Legislature passed Public Law 20-80, locally known as the Natasha Perez Protection Act, which made all enclosed public places, including restaurants, on Guam smoke-free.

- In early 2010, Guam Public Law 30-80 was enacted, increasing the tax on cigarettes from $1.00 per pack to $3.00 per pack, representing the single largest tax increase for cigarettes ever enacted in the country, and placing Guam among the US jurisdictions with the highest tax on cigarettes. Similarly steep tax increases were enacted for other tobacco products. Significantly, all proceeds from tobacco taxes will be deposited into the Healthy Futures Fund, not to be comingled with the Guam general fund. Fifteen percent of the taxes collected will be transferred into the Guam Cancer Trust Fund for programs supporting cancer screening, treatment, and support services, and one percent of the taxes collected shall be used to maintain the Guam Cancer Registry.

Outlook

Truly remarkable results have been achieved over the past six years since establishing a cancer partnership between CRCH and UOG, with relatively modest funding from the U56 Comprehensive Planning Grant. It is anticipated that with the significantly increased support from the U54 Comprehensive Partnership Grant, the CRCH/UOG partnership will be able to make significant progress in the years to come to understand and address the needs of the population of Hawai‘i, Guam, and the US-associated Pacific Island jurisdictions by expanding the cancer research efforts, by providing increased opportunities for education and training in cancer-related disciplines, and by raising the awareness for cancer, ultimately reducing the impact of cancer on the island communities served by CRCH and UOG.

More information is available on the website of Cancer Research Center of Hawai‘i (www.crch.org), the website of the Cancer Research Center of Guam (www.uog/cancer), and the website of NCI's Center to Reduce Cancer Health Disparities (http://crchd.cancer.gov).

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