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Reducing Cancer Health Disparities in the US-associated Pacific

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Abstract

Purpose—To assess cancer prevention and control capacity in the US-associated Pacific Islands (USAPI, including American Samoa, Northern Mariana Islands, Micronesia, Guam, Marshall Islands, and Palau) and to support indigenous leadership in reducing cancer health disparities.

Methods—Jurisdiction-specific needs assessments were conducted to assess cancer prevention and control capacity and challenges, The Cancer Council of the Pacific islands (CCPI), an indigenous health leadership team from public health and medicine, was supported to review assessment findings, develop priorities, and build capacity to address recommendations.

Results—Capacity varied across jurisdictions, but generally there is limited ability to measure cancer burden and a lack of programs, equipment, and trained personnel to detect and treat cancer. Most cancers are diagnosed in late stages when survival is compromised and care is most costly. Jurisdictions also are challenged by geographic, social, and political constraints and multiple in-country demands for funding. Based on findings, strategies were developed by the CCPI to guide efforts, including fund seeking, to expand cancer prevention and control capacity in regionally appropriate ways.

Conclusions—Concerted planning, training, and funding efforts are needed to overcome challenges and upgrade capacity in cancer education, prevention, detection, and treatment in the USAPI. Indigenous leadership and local capacity building are essential to this process.

Keywords

community health services; developing countries; health services needs; Healthy People 2010; needs assessment; Pacific Islander Americans; trust territory

A history of thermonuclear weapons testing and a high prevalence of Hepatitis B, sexually transmitted diseases, and cancer-related health risk behaviors contribute to a growing cancer

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health crisis occurring in the United States-associated Pacific Islands (USAPI). The region's limited ability to detect, diagnose, and treat cancer is believed to contribute to late detection, when survival is compromised and care is most costly. The cancer prevention and control capacity of the USAPI also is challenged by geographic, social, and political constraints and multiple in-country demands for sparse funding.[1–3]

The USAPI refers to six separate and distinct island-based jurisdictions in the Pacific that have formal relationships with the US government: American Samoa, Guam, the Commonwealth of the Northern Mariana Islands (CNMI), the Federated States of Micronesia (FSM, inclusive of the four states of Chuuk, Kosrae, Pohnpei, and Yap), the Republic of the Marshall Islands (RMI), and the Republic of Belau (Palau). Each jurisdiction has a unique and distinct culture and language, but they share a history of colonization. The islands first were claimed by various European nations starting in the 16th century. The United States obtained American Samoa in an 1898 treaty with Germany and gained control of the remaining jurisdictions (which had been under Japanese control) following World War II. All six have been used by the United States for military purposes, including nuclear weapons testing.[4–7]

Today, all six jurisdictions have strong economic and political relationships with the United States. American Samoa and Guam are unincorporated US territories. The CNMI is a US commonwealth. The FSM, RMI, and Palau are independent nations with compacts of free association. All provide the US military access to their lands and waters in return for economic aid and use the US dollar as currency.[4,5] All are eligible to compete for many US government programs. In the area of health, for example, all jurisdictions may apply for grants from the Centers for Disease Control and Prevention (CDC), the Health Resources and Services Administration, and the National Institutes of Health. American Samoa, CNMI, and Guam have Medicare and Medicaid programs. The United States has identified health professional shortage areas in all jurisdictions.[2]

Inherent in these political relationships is conflict over the extent of the responsibility of the United States to provide for health, education, and welfare of these jurisdictions.[1,6,8] Despite economic aid, most jurisdictions are economically unstable with only marginal health and educational systems. They have experienced rapid cultural upheaval and are heavily dependent on the US as well as other foreign aid.[5,6] Most jurisdictions are burdened with health conditions found in both developing countries (eg, malnutrition, filariasis, and dengue fever), and diseases associated with developed countries (eg, diabetes, heart disease, and cancer).[8]

Cancer in this region has gained US attention in the past decade because of newly released information associated with US thermonuclear weapons testing.[9] The US tested 67 thermonuclear devices in the RMI between 1946 and 1958, with a combined tonnage equivalent to 7,200 Hiroshima blasts.[6,7] The majority of these tests were atmospheric explosions, with severe health consequences. The 1954 Bravo hydrogen bomb test, for example, exposed 250 Marshallese inhabitants of Rongelap, Utirik, and Ailinginae atolls to acute radioactive fallout. Rongelap residents developed acute radiation sickness and, over the next 30 years, 33 percent developed thyroid nodules, including 63 percent of children younger than 10 at the time of exposure.[6,7] Land was poisoned, and residents of Bikini atoll still cannot eat food grown there because of high radiation levels in the soil.[7] Compensation by the United States is limited to RMI residents of certain islands who develop certain types of cancer. However, a growing number and variety of cancers are being diagnosed in individuals from atolls and islands outside the US-defined risk area, for which the United States is reluctant to acknowledge responsibility. For example, residents of Kosrae and Pohnpei States (FSM) participated in the clean-up of the nuclear detonation sites, and

radioactive strontium from the weapons testing was documented to have reached the shores of Guam.[3]

In response to the growing cancer crisis in the USAPI, the Center to Reduce Cancer Health Disparities in the National Cancer Institute (NCI) and the National Center for Minority Health Disparities at the National Institutes of Health collaborated to fund a partnership of Hawai'i and Pacific healthcare professionals to assess cancer prevention and control capacity and identify strategies to address the gaps. Funding was applied through an administrative supplement to an existing NCI-sponsored cooperative agreement with Papa Ola Lōkahi, a community-based health organization located in Hawai'i that is host to 'Imi Hale-Native Hawaiian Cancer Network (UO1 CA86105).[10] Objectives were to (1) conduct a needs assessment, (2) create and maintain a Pacific-based council to interpret and articulate cancer prevention and control needs in the region, (3) support council members to build and sustain cancer prevention and control capacity in their jurisdictions, and (4) advocate to include Pacific Islanders in the program and services of the NCI and other US health departments and agencies.[2] Leadership was provided by the 20-member Cancer Council of the Pacific Islands (CCPI), composed of medical and public health representatives from the 6 USAPI jurisdictions, with strong support from Papa Ola Lōkahi and the Department of Family Medicine and Community Health of the John A. Burns School of Medicine at the University of Hawai'i (UH).

For the CCPI, the assessment of cancer prevention and control capacity provided the building block to discuss and prioritize regional and country-specific cancer issues. This article presents a summary of findings from the needs assessments,[11–19] along with recommendations made by the CCPI to increase cancer prevention and control capacity in the region. The creation and support of the CCPI as an indigenous leadership team is in concert with principles of community-based participatory research, aimed to empower local leadership by transferring data, skills, and resources to increase individual and community capacity for problem solving.[20–22] Benefits of an indigenous approach to cancer planning are discussed.

Methods

Assessing cancer prevention and control capacity

The assessment tool was developed by a consultant to Papa Ola Lōkahi who had 15 years of experience in the region working with health systems planning. The survey was reviewed with the staff at Papa Ola Lōkahi and UH. The survey was designed to assess the current cancer prevention and control activities in the region and the expressed needs of the health and medical providers. The domains assessed included National/State health plans; data collection and surveillance; awareness, outreach, prevention, screening, and early detection; diagnosis and treatment; relevant human resources; and research.

Between January and May 2003, nine needs assessments were conducted—one in each of the four states that comprise the FSM (Chuuk, Kosrae, Pohnpei, and Yap) and one each for the other five jurisdictions. Week-long visits to each jurisdiction/state were coordinated and conducted by consultants affiliated with Papa Ola Lōkahi and staff and medical residents from UH who received training on the implementation of the survey. Site visitors reviewed relevant computerized and paper-based datasets, including death certificates, tumor registries if there was one, hospital records, program and laboratory logbooks, as well as reports produced by local and regional entities. These data were supplemented by key informant interviews with the Director or Minister of Health and relevant department staff in each site (eg, data managers and coordinators of programs in tobacco control, breast and cervical cancer screening, and off-island referrals). Also interviewed were the Chief of Staff

and administrators of the hospital, physicians, and representatives of community-based cancer entities. Data on the geographic, political, social, and cultural context of each entity were gathered through literature review and interviews. Reports were organized to provide information on context, capacity, and preliminary recommendations.

Developing Recommendations

Each jurisdiction was responsible for finalizing their assessment report, which included working with jurisdictional colleagues to assure accuracy and securing approval for publication from their respective directors and ministers of health.[11–19] Data and recommendations from these reports then were discussed at CCPI meetings in 2003 and 2004. Also at these meetings, CCPI members met representatives from government and nongovernment organizations involved in cancer planning and care, including grant-giving entities. Meetings also featured information sessions about cancer, skills-building workshops in grant-writing, and technical assistance with writing.[20–22] The CCPI then articulated regional strategies to guide cancer planning in the region.

Results

Findings are organized in three sections. First presented is contextual information about the USAPI region, which provides essential geographic and cultural background for the interpretation of findings in the two sections that follow—capacity and recommendations.

Context

Geography

The USAPI region includes more than 2,100 small islands and atolls within 4 million square miles of ocean with a collective land mass smaller than the US state of Rhode Island.[4,5,23] Guam and the FSM state of Kosrae are contained to single islands, but other entities encompass islands and atolls spread over a vast expanse of ocean (Table 1). For example, the RMI is composed of two 800-mile-long chains of islands and atolls, and these two chains are separated by 200 miles of water. The region is prone to typhoons (hurricanes) and tropical storms, with millions of dollars in devastation caused to Guam in 2002 and to American Samoa and Yap in 2004.[23] Residents of low-lying coral atolls fear rising sea levels that would decimate entire communities.[25]

Traveling to and around the USAPI region is time-consuming and costly. From Hawai’i, one can fly 12 hours west to reach Palau or 6 hours south to reach American Samoa (and Hawai’i is a 5-hour flight from California). Airfares between the Pacific jurisdictions and Hawai’i range from $750 to $2,500. Traveling from the USAPI to Washington, District of Columbia, takes at least 20 hours (not counting layovers) and costs $1,400 to $3,000. Only Guam and Palau have daily flights to and from Hawai’i. Other areas have only two or three flights per week to Hawai’i, and these fill quickly.

For residents outside of urban centers, accessing healthcare can require a lengthy, uncomfortable bus or boat ride. Supply ships travel the region, visiting each major island monthly. Residents on other islands and atolls may have to ask for passage on a fishing boat or village canoe to meet the supply ship. For example, Yap State, FSM is composed of 82 inhabited islands, 78 of them outside the capital district on Yap Proper. A resident on a remote island needing hospitalization would take a family or commercial boat to the neighboring island of Satawal to catch the monthly supply ship for a ride to Yap Proper.

Society and culture—Population sizes are small and range from 7,686 in Kosrae State, FSM to 168,564 in Guam (Table 1). Low per capita gross national product—from $1,600 in the RMI to $21,000 in Guam—is due primarily to a tradition of subsistence living and low proportions of individuals in wage-based jobs. Youth have limited access to education and employment, contributing to high teen pregnancy and suicide rates.[26] Many islands and atolls have no electricity, and those that do experience intermittent black-outs and brown-outs.

Overcrowding, poor hygiene, and underdeveloped public works systems contribute to the social production of illness, including high rates of hepatitis, *helicobacter pylori*, dengue fever, cholera, filariasis, leptospirosis, pneumonia, and sexually transmitted diseases.[8] Food choices are limited, and high status associated with imported and processed foods have contributed to concurrent increases in both obesity and malnutrition.[27] Among the chronic diseases, heart disease and cancer are increasing, and diabetes is almost pandemic.[6,28] Betel nut chewing is associated with higher-than-expected rates of oral cancer.[29,30] Tobacco and alcohol, introduced by colonizers, cause the usual problems. Cigarettes often are sold individually, increasing access by minors.[31]

Culturally, the teaching-learning tradition is oralaural, where face-to-face interactions and hands-on demonstrations are preferred over written or electronic communication. Birthright dictates social status in many areas, which can present barriers to timely healthcare. For example, when the healthcare provider is not of equal or higher status than the patient, the patient may not seek or comply with advice. When two patients of unequal status need healthcare, the person with lower status may not get served, even if his or her condition is more serious. Pacific cultures tend to be collectivistic. For events such as weddings, funerals, and church dedications, it is an accepted practice to take off a week of work to fulfill family and community obligations. Reciprocity and mutual assistance are normative within the large, extended families of the region.[26,32] Despite similarities in culture across the region, it is important to remember that a minimum of 14 distinct languages are spoken, with 8 major languages spoken in the FSM alone.[23] Thus, even though English is the official language of the USAPI, it is most likely to be a second, third, or fourth language for those who speak it.

Healthcare delivery—Each jurisdiction has a health department—with responsibilities for data management, health promotion/education, primary healthcare, and sanitation—and most health departments support small clinics or lay health workers in population centers outside of the capital. Hospitals are located in the country and state capitals, with a limited number of beds and services. Although most healthcare services are provided by government, opportunities to obtain private health insurance and to purchase services from practitioners in private practice are growing. Complex cases that cannot be treated in the jurisdiction may be eligible for off-island care, most often in the Philippines or Hawai'i. The Tripler Army Medical Center in Hawai'i provides telemedicine consultation in the region, and patients who meet the criteria (eg, have a good prognosis and a case that has good learning value) may receive free tertiary care at the Tripler Army Medical Center under its continuing medical education program.[33] For other cases, the jurisdiction pays for off-island-referral care and per diem for accompanying medical escorts and/or family members. Because off-island-referral care is costly, each jurisdiction maintains a review board to screen and selectively approve referrals.[11–19]

Despite strong US ties, the jurisdictions do not benefit from all the protections afforded residents of the 50 US states; for example, jurisdictions do not follow US minimum wage standards and US Surgeon General warnings were not required on cigarettes sold in Micronesia until 1997.[3] Tobacco industry marketing in the RMI has been especially

aggressive, including free distribution of tobacco-branded clothing, especially to youth, and contests that offer boats, pickup trucks, and cash prizes up to $10,000.[31]

Capacity

Measuring cancer burden—Findings from the needs assessments and subsequent reports to the CCPI suggest that cancer is a leading cause of death. However, local estimates of cancer incidence and mortality rates were unreliable. In a 1999 effort to estimate prevalence, trained medical records staff abstracted charts in the FSM, RMI, and Palau, and findings (Table 1) suggest that the region is challenged by cancers common to developing nations (eg, gastric, cervical, and liver cancer) and developed nations (eg, prostate, lung, and breast cancer).[3,24]

Informant reports strongly suggest that cancer mortality is underestimated. They note that it is difficult to determine cause of death when death occurs on islands and atolls without physicians and in jurisdictions without pathology and other diagnostic services. To illustrate, in one jurisdiction, 57 percent of death records from 1998 to 2002 listed cause of death as "secondary to cardiac and/or respiratory arrest."[18] Also, diagnosis and outcome data for cancer cases treated off-island often are not transmitted to home-island vital records and tumor registry staff.[34] Given limited access to computers (and inconsistent electricity to power them), many jurisdictions maintain health records on paper, which are susceptible to damage from water and insects. For example, American Samoa started a cancer registry in the 1980s, but all data were destroyed in 1991 by Typhoon Val.[11] In 2003, only Guam and Palau had functional cancer registries.[17,18] A CDC-funded cancer registry needs assessment was conducted in 2005, and findings are pending. Among the USAPI, only Guam is a member of the Behavioral Risk Factor Surveillance System.[35] Some jurisdictions, including Palau, have sponsored risk assessments.

Mortality, morbidity and behavioral risk data on USAPI groups residing in the 50 US states are severely limited. These populations are small, and their data, when available, usually are aggregated into the Asian American/Pacific Islander category, which masks the great health disparities among Asian American/Pacific Islander groups.[8] Behavioral Risk Factor Surveillance System data from Guam (which has the highest standard of living of the six USAPI jurisdictions) suggest low rates of cancer screening in comparison to the 50 US states. In 2002, for example, only 60 percent of Guam women aged 40+ had had a mammogram in the past 2 years (vs 76% in the United States), 78 percent of women aged 18+ had had a Papanicolaou (Pap) test in the past 3 years (vs 87% in the United States), 29 percent of men aged 40+ had had a prostate-antigen screening test (vs 54% in the United States), 13 percent of adults aged 50+ had had a fecal occult blood test in the past 2 years (vs 30% in the United States), and 31 percent of adults aged 50+ had ever had a sigmoidoscopy or colonoscopy (vs 49% in the United States).[35]

Cancer-related planning and policy—In 2003, only American Samoa, Chuuk State (FSM), and Palau specified cancer as a priority in their health plans.[11,13,18] Two jurisdictions (Guam and Palau) earmarked funding for cancer, including an allocation to their tumor registries.[17,18] In 2002, CNMI instituted a sales tax on cigarettes, with a portion of funds earmarked for cancer-related programming. Limited focus on cancer was not surprising given the limited health resources of the USAPI and competing demands on health budgets, as noted above. In fact, for most jurisdictions, cancer became an agenda item only after the jurisdictions started accessing CDC funds for tobacco control and breast and cervical screening. Notably, all jurisdictions except American Samoa have enacted tobacco control legislations, primarily prohibiting sales to minors.

Cancer education and awareness—There are limited local dollars allocated to cancer education and awareness. In 2003, however, all jurisdictional health departments were operating CDC-funded tobacco control programs (Table 2). Most provide education to adults and school children. Eight health departments had breast and cervical cancer control programs with educational components (including five with CDC-funded BCCCP), and four health departments offered cancer, nutrition, and/or physical activity education. Guam was the only jurisdiction with a unit of the American Cancer Society, although local nonprofit cancer societies have been established in American Samoa and CNMI.

Cancer screening and diagnosis—The capacity to screen for cancers of the breast, cervix, colon/rectal, and prostate is sporadic and limited throughout the region because of lack of equipment, supplies, trained personnel, and limited laboratory capabilities (Table 2). Although breast and cervical cancer control programs have raised awareness about breast and cervical cancer screening, their ability to screen women is limited. For example, Pohnpei's program performs Pap tests on only 16 percent of its 8,000 female residents per year.[15] RMI and CNMI have resident pathologists, but other jurisdictions are dependent on out-of-country cytology services, sending Pap specimens to laboratories in Hawai'i or the Philippines to be read, with a minimum turnaround time of 2 to 3 weeks. Costs of sending specimens increased after "9/11," with new regulations regarding transport of specimens.[16] All jurisdictions have protocol about following abnormal Pap results with colposcopy, but Pohnpei does not have a colposcopy unit, and RMI does not have staff trained to operate its unit.

Clinical breast examinations are provided in all jurisdictions, generally by breast and cervical cancer control program staff. All jurisdictions/states have X-ray and ultrasound facilities. Six have mammography units, but the three FSM states of Pohnpei, Kosrae, and Chuuk do not, and one jurisdiction limits the use of mammography services for diagnostic purposes rather than for screening because of limited funds for supplies and staff time. In addition, most jurisdictions/states reported difficulty in finding and keeping trained staff to operate the equipment.

Six jurisdictions/states have the capacity to perform fecal occult blood testing for colorectal cancer screening, but all jurisdictions cited a limited supply of test kits, and only four have the capacity to interpret findings. Prostate-specific antigen testing can be performed in seven jurisdictions/states, but only three can analyze results. Four have colonoscopy units, five can perform upper gastrointestinal series, and four have CT scanners. All can perform tissue biopsies, but only Guam and Palau offer in-country interpretation of biopsied tissue.

Cancer treatment—Limited awareness about cancer screening and insufficient infrastructure to perform screening tests likely reduce the chance of early-stage diagnosis of cancer. However, the region has almost no capacity to treat cancer, especially late-stage cancer (Table 2). In 2003, the region's only oncologist resided on Guam. None of the jurisdictions/states could initiate chemotherapy treatment (although six had the capacity to maintain it once started). Radiation treatment was not available in any of the jurisdictions, and only Guam, American Samoa, CNMI, and the Marshall Islands had a resident radiologist. No clinical trials for cancer treatment or prevention were available, one reason being that none of the hospitals met the criteria for conducting trials. Palliative care services were available only in Pohnpei (FSM) and RMI. Thus, cancer patients are more likely to be referred for off-island care, and comprise about 40 percent of all off-island referrals. Not all cancer patients can be accommodated, however, given strict jurisdictional criteria and limited funds for off-island treatment.

Training—Key informants reported that the region suffers from a lack of healthcare providers, and very few have expertise in detecting and treating cancer. There are a few nursing education programs in the region, but those seeking medical training must travel to Fiji, Australia, Asia, or the United States. Physicians trained in the Pacific and Asia who have medical degrees that are not recognized in the United States cannot receive reimbursement by Medicare and Medicaid for their services. In addition, many do not qualify for US hospital-based training programs that require an MD degree. Some jurisdictions have identified on-the-job-trained candidates for cytology training in the United States, but none of the personnel met the criteria of having a bachelor's degree. Specialty care usually is provided by expatriate physicians who may earn up to five times more than local physicians, but they rarely remain in the country for more than 5 years.

When a health provider is sent off-island for training, it is costly and there is limited or no replacement staff. Off-island training is designed for western audiences, and training sites and technologies differ from what is available in the USAPI. Although Internet-based training and telemedicine capabilities are expanding, equipment often malfunctions, and limited funds and personnel are available to maintain it.[11–19] One or two computers often are shared by many healthcare providers, and telephone Internet connections predominate, at the cost of $1 to $5 a minute. Fortunately, in-country and Web-based continuing education opportunities have been expanded through resources from the Department of Defense.[33] Key informants identified needs for training in cancer etiology and prevention; screening recommendations; coding of diagnoses and causes of death; cancer registries; education and outreach strategies; cancer screening tools (eg, ultrasound, endoscopy, mammography); cancer treatment (including chemotherapy starts and maintenance); oncology nursing; pain management; palliative care; and hospice.

Recommendations

Through face-to-face discussions in 2004, the CCPI membership reviewed the needs assessment findings, verified priorities for each jurisdiction, and developed priorities for the region as a whole.[2] Given the overwhelming needs, the group put significant time into writing a mission statement and identifying strategies that would guide their decision making and initial actions. These included

1. building regional networks and partnerships for cancer control;
2. promoting the collection of cancer health data to better assess the cancer burden, guide program development, and evaluate activities;
3. promoting organized, evidence-based interventions for early detection of common cancers such as cervical and breast cancers in the region;
4. developing guidelines for cancer control and program management, such as for tobacco control, nutrition, and exercise programs;
5. advocating for a rational approach to effective treatments for potentially curable cancers within jurisdictions and in the region, possibly through a regional cancer treatment center; and
6. supporting low-cost and culturally sensitive care, including pain relief and palliative care, for individuals with terminal cancer.[2]

Within this framework, the CCPI came to consensus on five first-step activities for 2005–2006, including increasing cancer awareness, enhancing laboratory capacity, improving cancer care services, establishing cancer registries with common variables, and supporting

grant writers and training in grant writing (Table 3). Action steps were developed for each priority, serving as the basis of the CCPI work plan.

On the basis of findings from the needs assessment, CCPI members and supporters have leveraged additional resources to advance the CCPI agenda. In addition to the aforementioned CDC-sponsored needs assessment of tumor registries in the region, two grants were obtained from the CDC to support comprehensive cancer planning—one for the country of Palau and another for the remaining USAPI region.[36] Through these funds, each jurisdiction now has a paid cancer coordinator who is bringing together appropriate community representatives to develop comprehensive cancer control plans. In addition, a consortium of government agencies in American Samoa successfully competed for a Community Network Program grant from the Center to Reduce Cancer Health Disparities, NCI, which will allow them to increase cancer awareness, training, and research in this jurisdiction.[37] In 2005, the CCPI also decided to explore incorporation as an independent nonprofit entity that can apply for its own grants.

Discussion

This article contributes to the literature by presenting an updated summary of the cancer needs and capacity in the USAPI. Given goals of Healthy People 2010—to increase quality and years of healthy life and to eliminate health disparities across the United States—these findings provide us with baseline data that can guide health services planning in this underserved region.

It is likely that the majority of Americans think of the United States as a union of 50 states and the District of Columbia. However, the United States also has responsibility for health services in its territories in the Caribbean (Puerto Rico and the US Virgin Islands) and the Pacific (American Samoa, CNMI, Guam, Johnston Island, Midway, and Wake) and to the three countries in free association with the United States (FSM, Palau, and RMI).[38,39] As this needs assessment points out, the USAPI experiences significant cancer health disparities, and the region faces many challenges in the surveillance, detection, diagnosis, and treatment of this disease. Currently, the bulk of jurisdictional funds expended for cancer are spent on individuals with late-stage diagnoses who often need high-cost, off-island treatment.

Although expanding jurisdictional access to detection and treatment technology could keep more cancer patients on island, members of the CCPI indigenous cancer leadership team realized that wholesale adoption of existing US programs may not work for their culturally and linguistically diverse region. Instead, the CCPI took time to develop culturally appropriate strategies to guide cancer planning and grant writing. These strategies advocate for increasing partnerships and enhancing the skills of indigenous leaders. They aim to focus energies on the prevention and early detection of common curable cancers that, with modest expansion of services, could be treated within the region.

The second contribution of this article is to illustrate the importance of nurturing local decision-making capacity. This group, by coming together to review needs assessment data and develop recommendations for action, has built skills and expanded networks. Evidence of growth is seen in the subsequently winning of grants and contracts to further their work.

Observed benefits to supporting local leadership validate the position of those international development specialists who advocate for working “together with” (rather than “for”) the target group in assessing and solving problems.[20,21,40,41] Past efforts to transplant Western solutions in non-Western societies and developing economies often have backfired, and created new problems for the societies being helped.[41–45] In health, for example, emphasis

on establishing urban-based expensive hospitals in provincial capitals has sometimes served to increase, rather than reduce, health inequities.[41] As early as the 1970s, observers of international health policy started labeling US approaches to international development as culturally imperialist and began advocating for increasing participation of and decision making by those being assisted.[42] Subsequently, development workers have expanded their use of participatory methods, provision of technical assistance, and the inclusion of consumer groups in problem solving.[39,43–45] This helps ensure that problems are correctly assessed and interpreted, that proposed strategies are appropriate to the culture and resource base, and that change will be embraced and sustained locally.[20,21,44,45]

Conclusion

The need for capacity building to address the cancer health disparities in the USAPI is both evident and overwhelming, and the United States has responsibility to support the reduction of these disparities. The importance of developing and supporting Pacific-based healthcare leaders and their constituencies to address these deficits is equally important.

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Table 1

Land, population, economic characteristics, and cancer prevalence in the US-associated Pacific Islands*

				Federated States of Micronesia (FSM)					
	Am Samoa	**Guam**	**CNMI**	**Pohnpei**	**Kosrae**	**Chuuk**	**Yap**	**RMI**	**Palau**
Inhabited to total islands and atolls	7:7	1:1	3:14	9:9	1:1	40:207	82:142	1,225†	14:343
Land mass (square mile)	199	212	184	129	42	39	46	70	189
Miles between furthest islands	220	–	400	500	–	200	600	1,000	370
Population	57,291	168,564	80,365	34,486	7,686	53,595	11,241	59,071	20,303
Languages spoken besides English	1	2	2	6	1	2	4	1	3
Per capita GNP	$8,000	$21,000	$12,500	$2,000 for FSM overall				$1,600	$9,000
Median age	22.8	28.4	29.3	18.9	19.2	18.5	20.9	19.9	31.4
Life expectancy	75.8	78.4	75.9	69.8 for FSM overall				70.0	70.1
Cancer is_leading cause of death	2nd	2nd	2nd	3rd	4th‡	3rd	1st	2nd	1st‡
Prevalence (annualized per 100,000)									
Breast				10.7	11.5	7.9	15.6	36.0	17.1
Cervix				24.8	33.4	4.8	13.1	60.5	37.5
Gastric				7.7	17.6	3.0	1.1	2.9	37.5
Liver				11.9	4.1	5.2	24.4	10.2	19.4
Lung				21.3	8.7	24.6	39.6	41.1	34.6
Oral				6.2	7.9	3.8	22.1	12.6	12.4
Prostate				4.9	10.9	2.5	14.0	9.3	74.9
Thyroid				3.0	1.6	2.6	2.6	28.6	4.2

*From Pacific Health Dialog,[11–19] CIA World Factbook,[23] and Katz et al.[24]

†Of 1,225 islets, islands, and atolls, we were unable to determine the exact number of those inhabited.

‡Report to CCPI, November 2005.

Table 2

Cancer education programs, policy, and capacity for screening, diagnosis, and treatment, 2003

				Federated States of Micronesia					
	Am Samoa	**Guam**	**CNMI**	**Pohnpei**	**Kosrae**	**Chuuk**	**Yap**	**RMI**	**Palau**
Cancer outreach									
Tobacco control*	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cancer education*		Y	Y						Y
Breast and cervical cancer*	Y	Y		Y	Y	Y	Y	Y	Y
Nutrition education*		Y	Y	Y					Y
Physical activity*		Y		Y	Y				Y
NGO focused on cancer	Y	Y†	Y		Y	Y	Y		
Cancer screening and diagnosis									
Papanicolaou test	Y‡	Y‡	Y‡	Y‡	Y‡	Y‡	Y‡	Y	Y‡
Colposcopy	Y	Y	Y		Y	Y	Y	Y	
X-ray and unltrasound	Y	Y	Y	Y	Y	Y	Y	Y	Y
Mammography	Y	Y	Y				Y	Y	Y
Fecal occult blood test	Y‡	Y	Y	Y			Y		Y‡
Prostate specific antigen	Y	Y‡	Y	Y	Y‡		Y	Y‡	Y‡
Colonoscopy	Y	Y	Y					Y	
Upper gastrointestinal		Y	Y	Y	Y			Y	Y
CT scan	Y	Y	Y						Y
Tissue biopsy	Y‡	Y	Y‡	Y‡	Y‡	Y‡	Y‡	Y‡	Y‡
Cancer treatment									
Resident oncologist		Y							
Resident pathologist	Y	Y						Y	
Resident radiologist	Y	Y						Y	
CT scan	Y	Y	Y						Y
Chemo (maintenance only)	Y	Y	Y	Y			Y		Y
Surgery	Y	Y	Y	Y	Y	Y	Y	Y	Y
Palliative care/hospice		Y		Y				Y	

[*] Programs sponsored by country or state department of public health.

[†] Local chapter of the American Cancer Society.

[‡] Specimens must be sent out of country for interpretation.

Table 3

Cancer prevention and control strategies established by the Cancer Council of the Pacific Islands, 2004

Objective	Activity
Increase laboratory capacity	• Identify and compare training options • Identify who will be trained from each jurisdiction • Provide local certification after training • Have US-certified laboratory staff/resource person to do continuing education
Resource development and grant writing	• Provide funds so each jurisdiction can hire a grant writer • Identify staff that can be mentored by grants writer
Improve cancer care services	• Conduct cost-benefit analysis on regional cancer center vs out-of-country referrals
Establish cancer registries with common variables	• Identify and agree on common dataset • Train registrars from each jurisdiction • Provide on-site consultation • Look at feasibility of aggregating data to get regional profile of cancer burden • Explore option of a data Web site • Have designated computer for cancer registry
Increase cancer awareness and education	• Assess current cancer awareness and education activities and materials in each jurisdiction • Develop culturally appropriate cancer awareness activities and materials