Pacific Basin Health Worker Training in the United States-Affiliated Pacific Islands: Needs Assessment and Priorities for a Continuing Health Care Professional Development Program: Executive Summary

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Abstract:

The United States-Affiliated Pacific Islands (USAPI) include the U.S. Flag Territories of American Samoa and Guam, the Commonwealth of the Northern Mariana Islands (CNMI) and three Freely Associated States: the Federated States of Micronesia (FSM), the Republic of the Marshall Islands (RMI) and the Republic of Palau. These six jurisdictions span four time zones and are separated by over 4,000 miles of the Pacific. There has been a well documented need for continuing education (CE) for health workers in the USAPI region. This executive summary highlights key points from a series of CE needs assessments conducted in the region in 2004. These reports are presented in their entirety (pages 31-88) in this issue. (PHD 2007 Vol 14 No 1 pp 15-21)

Background

In addition to the vast geographical distances throughout the USAPI region, there are wide variations in social and economic conditions, health infrastructure and health workforce training throughout this region. Selected demographic indicators are presented in Table 1.[1-9]

Although most jurisdictions have a network of outlying health dispensaries and clinics staffed by non-physician providers, most health care in the region is provided in centralized, state-funded hospitals and their associated outpatient departments. The most notable exceptions to this are Guam and the CNMI, which have larger numbers of private providers. Among the FSM states, only Kosrae has its population limited to a single island; Chuuk, Pohnpei and Yap all have outer island populations served by health dispensaries. Nevertheless, most health care is provided at centrally located state hospitals in each of the FSM states. Yap and Chuuk have a widely distributed system of dispensaries staffed primarily by community health assistants. The RMI includes a number of inhabited atolls, but most of the population lives on the Kwajalein and Majuro atolls where health care is primarily delivered in the centralized health centers on Ebeye island and in Majuro, respectively.

There are also a small number of private health clinics in American Samoa, Pohnpei (FSM), Palau and the RMI. Guam and the U.S. military base on Kwajalein, RMI also have U.S. military-affiliated hospitals and health systems primarily serving U.S. military personnel, dependents and contractors. These installations were not included in the Pacific Association for Clinical Training (PACT) survey, as they provide relatively few direct health services to the local population.

The remarkable and crucial Pacific Basin Medical Officers Training Program (PBMOT), which operated in the FSM between 1987 and 1996, trained 70 physicians, as well as additional health staff. Most of these graduates continue to serve throughout the USAPI and especially in the FSM, Palau and American Samoa, continuing to provide the backbone of the physician workforce. Nurse training programs continue to be active in the RMI, CNMI and American Samoa and are supplemented by an advanced nurse training program in Guam. Allied health staff throughout the region (except in Guam), typically have had limited or no formal training, with the exception of a few key supervisors. The need for advanced training and CE for this diverse health workforce was evident through the region, especially following closure of the PBMOT. Through the 1990s, regional efforts to address these needs have included programs for post-graduate and public health training through the Fiji School of Medicine, increasingly in partnership with the dynamic Pacific Basin Area Health Education Center (AHEC).[10]

Table 1. Key Indicators of the U.S.-Affiliated Pacific Islands*

	Population[1]	GDP per capita[2,3] (US$)	Land Area[1,4,5,6] (square miles)	Life Expectancy[1,7] (years)	Annual Per Capita Health Expenditure[7,8] (US$)	Infant Mortality[1,7,9] (per 1000 live births)
American Samoa	57,902	4,295	77	76	500	9.48
CNMI	78,252	8,582	177	76	519	7.25
Guam	166,094	15,439	212	78	1,032	7.15
Chuuk, FSM	53,595	1,203	49	65	80	†21
Kosrae, FSM	7,686	2,270	42	†67	169	†21
Pohnpei, FSM	34,486	3,071	133	†67	117	†21
Yap, FSM	11,241	3,180	46	66	125	†21
RMI	57,738	2,370	70	70	255	23
Palau	20,700	5,678	189	71	315	13.66

*Unless additional references are indicated, references are listed in the corresponding needs assessment article for each jurisdiction elsewhere in this issue. † Denotes overall FSM averages.

The need for effective CE programs for health workers in the USAPI was also acknowledged by the Institute of Medicine in their 1998 report, "Pacific Partnerships for Health."[11] Subsequently the U.S. Health Resources and Services Administration (HRSA) provided funding to the University of Washington to develop the Pacific Islands Continuing Clinical Education Program (PICCEP). PICCEP presented workshops by content experts from the U.S. throughout the USAPI between 2000 and 2003. A subsequent four-year cooperative agreement between HRSA and the Department of Family Medicine at the University of Hawai'i, John A. Burns School of Medicine established the PACT in 2003.

The HRSA mandate for PACT has been to develop and support CE programs for a broad range of health workers throughout the USAPI, exploring the appropriate use of distance education modalities. Leadership for PACT has been provided by an active advisory board of local and regional health professionals and leaders appointed by the Secretaries, Ministers and Directors of Health of the USAPI jurisdictions. Faculty members from PICCEP have also served on the PACT advisory board. Key support for PACT has been provided by the Pacific Island Health Officers Association (PIHOA). Recognizing the diversity of needs and geographical locations within the USAPI, PACT has organized its activities to focus on ten key locations within the six USAPI jurisdictions, providing separate advisory board representation and resources to each of the four FSM states, as well as to both Majuro and Ebeye in the RMI.

PACT conducted key informant-based needs assessment surveys throughout the USAPI in 2004. The goal was to foster an understanding of the diverse challenges in supporting appropriate, effective and sustainable CE programs for health workers in the region. These reports have been used to guide PACT CE activities and are presented in their entirety in this issue. This summary highlights the key findings of the surveys.

Methods

The surveys collected information on health worker demographics, training and CE needs through questionnaires of key informants, supplemented by on-site interviews of health care leaders and health workers conducted by University of Hawai'i faculty between April and November 2004. Nine reports were developed (separate reports were produced for each of the four FSM states) and reviewed for accuracy by health leaders from each jurisdiction.

Health Workforce Characteristics

There are wide disparities in health workforce training between the Freely Associated States and the Flag jurisdictions. This section summarizes training for nurses, doctors and other health workers. The numbers of health workers identified in this survey are presented in Table 2.

Nurses

Most nurses in the Freely Associated States have been trained in the region through programs at the College of the Marshall Islands. Associate-degree nurses are also trained in the CNMI, the RMI and American Samoa. Practical nurses are predominantly trained locally, on the job. The University of Guam offers Bachelor and advanced degree training for nurses. A shortage of nurses throughout the region has resulted in the hiring of expatriate nurses (typically from the U.S., Canada, Fiji and the Philippines) where budgets allow. There has been a trend for nurses to move to higher paying jobs within the region.

Table 2. 2004 Health Care Workforce Data: Public Health and Clinical Staff

Jurisdiction	Physicians	Nurses (RN, LPN, CNA or Graduate nurses, practical nurses)	Nurse mid-wives	Dentists	Dental Asst, nurses, techs	Extend-ers (Health Assts, Medex, c.health workers)	Lab	Pharmacy	Radiol Tech	Other
Am. Samoa	47	175	0	15	22	30	28	12	13	32
CNMI	30	226	10	8	9	0	7	8	2	14
Guam	280	676	5	53	187	10	28	8	18	12
Chuuk	20	175	4	5	10	97	10	5	6	7
Kosrae	8	35	4	3	1	33	6	2	2	3
Pohnpei	17	83	5	3	16	31	7	5	5	2
Yap	12	39	4	1	7	27	6	5	4	4
RMI -Ebeye	11	27	0	1	3	10	4	2	4	2
RMI-Majuro	21	150	11	4	4	5	13	4	6	8
Palau	25	110	0	4	10	0	11	9	7	56

Compiled from data provided by Human Resource Departments, PACT Advisory Board members and other key informants.

Physicians

With the exception of Guam and the CNMI, where most physicians are licensed in the U.S. or Canada, there is a wide diversity of training backgrounds for doctors in the USAPI. Throughout much of the region a large part of the physician level workforce is composed of graduates of the PBMOT Program, which concluded operations in 1997. Many of these doctors obtained additional specialty training at the Fiji School of Medicine and advanced practice settings in the region. The importance of providing CE opportunities for this crucial cohort of providers was highlighted in the 1998 Institute of Medicine report. There is a small number of prominent U.S. trained indigenous physicians working in the region. Additional skills, especially in specialty care fields, are provided by a larger number of expatriate physicians from the U.S., Philippines, South Asia and elsewhere.

Oral Health Providers

In Guam and the CNMI, only U.S. trained dentists can be licensed. In most other jurisdictions the majority of dentists received their training through the Fiji School of Medicine Dentistry Program, with a small number of expatriate dentists filling the remaining positions. Mid-level dental nurses provide services in the Freely Associated States, but are not licensed to practice in the territories. Dental assistants are usually trained locally.

Allied Health Staff

Except for the CNMI, Guam and Palau, most non-supervisory laboratory, radiology and pharmacy staff have had limited formal training. The Palau AHEC, Palau Community College and the Belau National Hospital have developed a cooperative program to increase recruitment and support the education of allied health staff. There are a number of ongoing health assistant training programs that are active in the region that are primarily focused on developing providers for distant health clinics and dispensaries.

Continuing Professional Development Programs

Throughout much of the USAPI, there are locally developed CE programs for clinical nurses at the local hospitals. CE for nurses is also supported by an active regional society, the American Pacific Nursing Leaders Council (APNLC). The annual APNLC regional conference serves a key educational role to supplement local CE programs. Across most of the region CE credit licensure requirements for nurses serve as a strong incentive for the maintenance of these local and regionally sustained continuing professional development (CPD) efforts. Nurses working in the public health sector, however, seldom have access to the same range of CPD opportunities.

Continuing medical education (CME) requirements for physician licensure were less consistent across the region, with an associated large variation in CE opportunities. In 2004, only Guam, CNMI and Palau had CE requirements for physician re-licensure; doctors in these same jurisdictions had generally good access to CE resources. While most jurisdiction health centers at one time held scheduled local CE sessions for physicians, many locations without formal physician CPD requirements discontinued these activities as of 2004 due to limited staffing and poor access to updated information resources. Currently legislative and other initiatives are underway to develop formal CME

requirements for doctors in other USAPI jurisdictions.

For almost all other health fields, including oral health, continuing training opportunities are extremely limited locally. This situation is especially critical given the lack of formal foundation training for many pharmacy, laboratory and radiology staff in the Freely Associated States. The relatively small numbers of health professionals in each field, along with the lack of local training expertise, have hindered the development of sustained local CPD efforts for allied health workers. Off-island training opportunities are often limited by cost and remain largely dependent on outside donor funding. Laboratory and pharmacy technician training programs through local and distance education efforts are underway in Palau and the FSM, in conjunction with outside partners. In addition to providing basic training and CE for their own staff, health officials in Palau have made efforts to extend these opportunities to health workers from neighboring jurisdictions. With the exception of Guam and the CNMI (which have CE requirements for allied health certification), USAPI jurisdictions do not offer regular support for allied health CPD activities. These opportunities generally remain available only on an ad hoc basis, dependent on outside funding.

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Infrastructure and Distance Education Technologies

The 2004 survey identified significant limitations related to information technology infrastructure for distance education in most USAPI jurisdictions. These included the high costs of international telephone rates throughout the region, difficulties with satellite-based communications and limited computer and internet availability in the health sector.

The Technology and Information Policy Group (TIPG) at the University of Hawai'i manages Pan-Pacific Education and Communication Experiments by Satellite (PEACESAT), a public service satellite program that provides video, voice and data communications at no metered cost for much of the USAPI. Local jurisdictions provide staff to run the associated earth stations, which are usually located in educational institutions rather than in health care centers. TIPG also provides additional support through training, technical assistance and some equipment support. TIPG is a PACT partner and their staff has provided significant technical support for the program, including the technology infrastructure assessment (see e-learning article by Higa in this issue).

In 2004, health worker utilization of PEACESAT for video and audio communications was most active in Majuro (RMI) and American Samoa. Technical and local staffing challenges limited the use for regular health education purposes in other parts of the USAPI. As of mid-2006, additional TIPG projects have been underway to develop increased PEACESAT Voice-over-IP and data connections in the RMI and FSM, and to extend service to Ebeye Hospital and Community Health Center. There has not been extensive use of commercial satellite communications for health information exchange through the region due to costs. A pilot project conducted by PACT in June 2004 evaluated the effectiveness of various modalities of distance education, as well as health worker interest in various modalities, including computer-based training (see the following article by Chen et al.).

At the time of the 2004 survey, most health workers in the USAPI had only limited access to computer stations, and even fewer had internet availability. American Samoa had a number of computers networked through the hospital for their implementation of an electronic health record system. In 2004, computer labs with internet access were being introduced throughout the Western Pacific Region, through the World Health Organization (WHO) sponsored Pacific Open Learning Health Network. That year, Palau, Majuro (RMI) and Pohnpei (FSM) received WHO-sponsored networked computer labs in their hospitals with low bandwidth, but non-metered internet access. Otherwise, most jurisdictions had limited computer resources with minimal or no internet capability for health workers. Available computers were often restricted to physicians only. Although primarily developed as a clinical consult service, web-based and email communications have been used effectively to provide consultation services and triage transfer of patients from the USAPI to the Pacific Islands Health Care Program at the Tripler Army Medical Center in Honolulu, Hawai'i.

Distance education programs for physicians through the region have been active through the Palau AHEC in conjunction with the Fiji School of Medicine. Due to the limited access and reliability of satellite-based audio and video teleconferencing, a model based on telephone conferencing and internet forwarded materials was developed. Unfortunately, the inexpensive Hawai'i-based commercial phone bridge system that enabled this to be conducted was discontinued in 2004. The Fiji

School of Medicine has since transitioned to a primarily on-site educational model with traveling faculty teaching courses directed towards certificate and diploma programs.

Since the 2004 survey, there have been significant improvements in the availability of information technology access for distance health education for health workers in the USAPI. In addition to the hospital-based computer labs in Palau, Pohnpei (FSM), and Majuro (RMI), computer facilities with internet access have also been developed in the other FSM states of Chuuk, Kosrae and Yap. Ebeye Hospital (RMI) has also significantly improved access to computer resources. WHO and local funds have supported these efforts. Although bandwidth remains low in most of the USAPI, limiting the ability to transfer large files or stream video and audio, the overall availability of internet access for health workers has improved significantly throughout the region.

Priority Needs

The key priority needs identified from this survey included developing CPD activities, matching CPD content to local priorities, supporting allied health training, improving information technology access, and developing local technical support to sustain technology services.

At the time of the 2004 survey, few jurisdictions offered regular, local CE opportunities for health workers. Notable exceptions included nursing CPD activities in many jurisdictions and the provision for weekly CE activities for health staff in Palau. Both these groups had CE requirements for professional license renewal. These activities notwithstanding, a strong need was identified to promote and sustain CPD activities for health workers as part of their routine work activities.

Health workers throughout the region expressed enthusiasm for increased CPD activities. This has been complemented by growing initiatives to mandate documentation of CE activities for professional licensure, especially among nurses and physicians. The importance of additional CPD incentives through linking CE to professional advancement and salary increases was noted in many jurisdictions. This issue may be most appropriate for the CPD planning process in each jurisdiction to address in the context of available resources and local priorities. Key content areas were also identified by health workers in many jurisdictions, often based on prevailing morbidity patterns. The surveys suggested other topics in addition to the HRSA mandated priorities of diabetes mellitus, oral health and geriatrics.

The limited CPD opportunities for allied health workers (especially in laboratory, pharmacy and radiology settings) are particularly disconcerting in light of the limited initial training provided to health workers in many jurisdictions. These concerns are especially significant for the Freely Associated States. On-the-job training is commonplace and regularly scheduled CPD activities are rare for allied health workers. The development of laboratory and environmental health technician training programs through the Palau AHEC and the availability of the pharmacy technician program via the University of Alaska–University of Hawai'i (Hilo) partnership serves as a possible model for other jurisdictions. While these programs are made available at nominal cost to workers from neighboring jurisdictions, there remain significant challenges to providing training for a significant number of allied health workers in the region. Transportation costs are prohibitive for most local health budgets, and existing allied health staffing shortages are exacerbated when personnel train off-island. Given the limited formal foundation trainingfor many laboratory, pharmacy and radiology staff outside of Guam and the CNMI, a professional development foundation-level training model may initially be more appropriate than traditional CE offerings.

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Distance education for health workers in the region may help address some of the issues of high travel costs and limited staffing coverage that have restricted access to in-person CE activities. Distance modalities can also facilitate the dissemination of local expertise throughout the region as part of developing local and regional CPD capacity. The increasing availability of information technology resources for health workers in the region over the past several years increases the potential role for distance education in the USAPI. Not all training can be effectively provided through available distance modalities; thus, the need for a range of CE programs remains. The optimal role of distance education as part of a comprehensive CPD model is likely to vary among different health specialties and across the diverse health settings in the USAPI.

Between 2004 and the present, there has been a trend of increased access to distance education resources

through computer technology for many hospital staff in the region. The centralized provision of health care and the associated concentration of health workers in most of the USAPI jurisdictions has allowed for high levels of access to be achieved with relatively small investments of resources. Further development of effective and affordable information technology resources throughout the region is essential to support distance education programs since technical and training challenges remain. In addition to equipment investments, training health workers to optimize their usage of newly available computer and internet resources has been identified as a priority across most of the region. With the increasing dissemination of technology, the accompanying need for improved local technical support to maintain equipment and networks was frequently reported. Efforts to address these needs in the near future will rely on support from local governments, academic centers and the efforts of programs like the WHO's Pacific Open Learning Health Net.

Addressing the needs of health workers not based in the major centers – notably health assistants and public health personnel – remains an important priority especially for states with widespread populations. Often these same health personnel have had the fewest opportunities to improve and maintain their professional knowledge base. An active continuing distance education program for dispensary staff in Yap, FSM may serve as an effective model for other jurisdictions.

Partnerships

Leadership in formulating regional health policy is provided by the PIHOA, composed of Ministers, Secretaries and Directors of Health from each of the USAPI jurisdictions. This group works closely with the regional professional societies for nurses, doctors and dentists (the APNLC, Pacific Basin Medical Association, and Pacific Basin Dental Association, respectively) that are active in supporting CE activities for their members. Coordination with these established organizations is important for developing effective CE programs in the context of promoting capacity development and sustainability.

There are a number of public higher education centers in the region that provide foundation and professional training for health workers. These include the University of Guam, Guam Community College, the Northern Marianas College (CNMI), American Samoa Community College, Palau Community College, College of Micronesia (FSM), and the College of the Marshall Islands. Promoting increased partnerships between these institutions and health care centers may have mutual benefits that promote local capacity development initiatives. In addition to supporting foundation-level and health-specific training, these centers may offer a valuable resource for developing computer and health informatics skills among health workers. The partnership between the Belau National Hospital, the Palau Community College, and Palau AHEC programs serves as a model for a successful collaboration between academic and health care sectors that has helped to address a local shortage of trained health workers.

The needs assessment surveys presented in this issue summarize the state of CE in the USAPI region in 2004 and highlight continuing key priority areas.

A number of international and U.S. agencies promote resources and training activities for health workers in the region, including the WHO, Secretariat of the Pacific Community, and the U.S. Centers for Disease Control and Prevention. Grant funding agencies, such as HRSA, and aid agencies from other Pacific countries support a range of health-related programs in the USAPI. Health workers who participated in the 2004 survey frequently commented on the lack of coordination between various outside agencies despite complementary goals. Promoting increased coordination between funding agencies for resource sharing and design of complementary programs has the potential to improve training outcomes and optimize limited resources. Improved communication between agencies and with local health workers, perhaps through each jurisdiction's CPD committee, may assist in developing effective programs in the context of specific local needs.

Limitations

With our focus on CE needs, an assessment to determine optimal present and future needs in the numbers, type and training of the health workforce in each jurisdiction was beyond the scope of our survey. Clearly, such assessments, ideally performed as part of locally developed human resource development plans, should influence the design of sustainable and appropriate CE programs into the future. Additionally, despite their importance in several jurisdictions, this study made no attempt to include outer island dispensaries in the site visits, thus their needs are under-reported.

Summary

The needs assessment surveys presented in this issue summarize the state of CE in the USAPI region in 2004, and highlight continuing key priority areas. These reports

were developed in conjunction with health workers and health leaders throughout the region and are guiding PACT in working to improve CE opportunities for health workers through a participatory process and with a focus on capacity development. PACT recognizes the dedicated work of generations of Pacific health workers–from the pioneers who returned to Micronesia from training at the Fiji School of Medicine, or in other Pacific nations or the U.S., to the remarkable faculty and graduates of the PBMOT, and the health workers currently pursuing continuing studies. We hope that the full reports presented in this issue help support the efforts of these individuals and the many organizations working for the common cause of improving the health of Pacific peoples.

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