

Kosrae Assessment for a Continuing Health Care Professional Development Program

Tai-Ho Chen, MD*

Arthy Nena, MPH**

Kun Mongkeya†

Gregory G. Maskarinec, PhD*

*Department of Family Medicine and Community Health, John A. Burns School of Medicine, University of Hawai'i at Manoa;

**Director of Health Services, Department of Health Services, Kosrae State Government, PACT Advisory Board Member;

†Curative Services Administrator, Department of Health Services, Kosrae State Government, PACT Advisory Board Member.

Address correspondence and reprint requests to: Gregory G. Maskarinec, PhD, Department of Family Medicine and Community Health, John A. Burns School of Medicine, University of Hawai'i of Manoa, 95-390 Kuahelani Avenue, Mililani, Hawai'i 96789-1192; gregorym@hawaii.edu.

Abstract

In 2003, the University of Hawai'i Department of Family Medicine and Community Health entered a 4-year cooperative agreement with the U.S. Health Resources and Services Administration to establish the "Pacific Association for Clinical Training" (PACT). PACT's goal is to develop effective distance education methods to improve the education and skills of healthcare professionals in the U.S.-Affiliated Pacific Island nations. To determine the situation existing in 2004, one of PACT's first projects was to perform site visits to each jurisdiction, conducting needs assessments through interviews with key healthcare professionals, hospital administrators and government officials. This article highlights findings of ACT's Assessment of Kosrae State, Federated States of Micronesia. All data were collected in 2004 / 2005 and have not been updated since it was to establish a baseline for future reference.

Key words: Kosrae; Clinical Training; Workforce Development; Distance Education. (PHD 2007 Vol 14 No 1 pp 58-62)

Introduction

This report was compiled from written surveys of key health administrators and personnel in conjunction with interviews and site visits performed by Drs. Tai-Ho Chen and Gregory Maskarinec in June 2004. Additional information was obtained through ongoing communications with PACT partners in Kosrae. Discussions at the November 2004 PACT Advisory Meeting provided additional information on recent activities. The report has been reviewed by the Advisory Board members for Kosrae who provided additional revisions.

Kosrae is the only single-island state in the Federated States of Micronesia (FSM) and is the least populated, although it is the second largest inhabited island in the FSM with a land area of 42 square miles.^{1,2} Because of the rugged mountains in the center of the island,

all communities are located on the coast and are connected, except for the isolated village of Walung, by a paved road. The island is surrounded by low-lying reefs and mangrove swamps. Travel around Kosrae is not difficult. It is possible to drive from one end of the island to the other end in approximately 2 hours. Most government buildings and offices, the high school, and Kosrae State Hospital are located in Tofol, the capital. There are five health clinics scattered around the island. Walung (population of about 200 people), the most remote community, is mostly accessible by boat, but the island circumferential road is being built now to provide quicker access into town. A dispensary will be built in Walung to provide access to health programs.

The population of Kosrae is 7,686 residents according to the 2000 FSM census³ male residents 50.2%, female 49.8%. The median age is 19.2 years. In 2000, there were a total of 1,087 households, of which 1,059 (97.4%) reported some cash income, with a median household income of approximately \$7,528 and a mean household income of \$12,400.^{4,5} Literacy approaches 100%. In 2004, Kosrae had 187 high school graduates, the most ever. A large percentage of the high school graduates enroll at the College of Micronesia in Pohnpei, while some enroll in the local Kosrae Campus. Few students go off to higher institutions in Hawai'i or the U.S. mainland.

The total annual hospital budget is approximately U.S. \$1,000,000. Most off-island referrals go to St. Luke's Medical Center in the Philippines and Pohnpei. Children with orthopedic problems are sometimes sent to the Shriners Hospital in Honolulu and some patients are sent to the Tripler Army Medical Center.

Health Workforce Demographics

Kosrae has 10 physicians; 25 hospital-based nurses, of whom 18 are associate nurses and seven are practical nurses; 10 public health based nurses; one nurse practitioner (family planning); four nurse midwives; three dentists, no dental nurses; one dental lab tech; one dental lab tech assistant; one dental aid; six med lab techs; no pharmacists; two pharmacy techs; two radiology techs; one rehab specialist; one dietician; one health educator; 23 community health workers and no social workers.

Health Workforce Training

Kosrae three dentists and one dental lab technician trained in New Zealand, and the dental lab assistant received on the job training. The office has two computers and there is unlimited access to the internet for purpose of research and continuing education. One dentist is an expatriate American, the other two trained in Fiji, as did one of the lab techs. The dentists, on a rotation schedule, go out to the schools and the communities every week to do screening, sealants and fluoridation varnish for children. The program in the schools has been in place for 4 years and provides sealants and fluoride, offers restorative dentistry with portable equipment, provides instruction on proper oral hygiene, and dispenses toothbrushes. There is a need for a repair specialist to work on dental units and equipment. There is also a need for continuing training and certification of the dental assistants. Appliances for cleft palate patients, prosthetic and orthodontic materials and funds for maintenance is needed. The division also needs continuing training in post-graduate, preventive dentistry and oral surgery.

Most of the 18 more qualified nurses are associate nurses and have had training in the Commonwealth of the Northern Mariana Islands (CNMI), Guam, or the Republic of the Marshall Islands (RMI). The seven practical nurses were trained locally in a hospital-based program. The College of Micronesia has plans to start a nursing program in each of the four states, including Kosrae. Of the four certified mid-wife nurses, three

trained in Fiji and one in Japan. There is no Obstetric Gynecology (Ob-Gyn) physician in Kosrae, so the midwives have a very high degree of responsibility, with 16-17 deliveries a month. Hospital resources include one warmer and an incubator. They are unable to handle deliveries under 33 weeks. Complicated obstetric cases are sent to Pohnpei. The surgeon in Kosrae can do Cesarean sections if necessary.

The one nurse practitioner in family planning studied for 4 months at University of California, Los Angeles (UCLA). One staff member from Kosrae has attended Dr. Gigliola Baruffi's Maternal and Child Health annual training workshop at the University of Hawai'i since 1987. One physician is currently enrolled in the program. Kapiolani Medical Center in Hawai'i sent over nurse midwives to do a practicum in 1987.

The total annual hospital budget is approximately US\$1,000,000. Most off-island referrals go to St. Luke's Medical Center in the Philippines, and Pohnpei. Children with orthopedic problems are sometimes sent to the Shriners Hospital in Honolulu and some patients are sent to the Tripler Army Medical Center.

The pharmacy supervisor had only one year of formal training in 1995. The second pharmacy technician recently came on board but has no formal training in pharmacy. He is a graduate of the College of Micronesia. The pharmacy computer is used for filing and labeling, but is not yet set up for an internet connection. All department staff has unlimited internet

access for research and continuing education. The FSM has plans to standardize its hospital formularies and drug procurement policies, but that has not yet been implemented. Kosrae currently gets most of its medications from New Zealand, Australia, Perry Point, Guam and private clinics in Pohnpei.

No one in the lab has a degree. Some lab techs have certificates from New Zealand. One lab tech went to Fiji 3 years ago to begin a 4-year course sponsored by the World Health Organization (WHO), but he never finished the program and returned after one year. He is expected to take over being groomed to head the lab to replace the recently retired Chief of Laboratory Services. The chief was not aware of the Palau Area Health Education Center (AHEC) lab training program.

The head of Radiology trained in Guam, Fiji, and Japan. The other radiology tech has 2 years of on-the-job training. There is an ultrasound in x-ray that can only be operated by the physicians, who use it for pregnancy exams. The Government of Kosrae and Medpharm Pharmacy, Inc. entered into a preventive maintenance contract recently. A new portable x-ray machine

(Chinese made) that was recently purchased is currently utilized in the hospital. A fluoroscopy machine is expected and training will be required. Currently, the only communication with other radiology departments in the FSM is to obtain supplies from Pohnpei.

Current Continuing Professional Development Programs

Throughout the FSM, neither physicians nor dentists presently require continuing medical education (CME) hours to renew their licenses. A recently established FSM Medical Board will now look into developing regulations on medical practices in the FSM, especially to regulate and establish standards for medical practice. Only nursing has formal requirements; the FSM National Board requires nurses to complete 30 CME hours every 2 years.

Kosrae State Hospital continuing education conferences have not occurred regularly due to staff time constraints. Attendance for sessions that have taken place was very limited. Budget constraints are a major problem for initiating new programs, since the government-mandated work hours have been cut to 64 hours per 2-week period in order to address payroll shortages. WHO is the chief source of funding for training courses. Possible funding sources for professional development programs include the AusAID Scholarships, New Zealand Government aide and others. Staff members are required to teach their colleagues when they return from a training course, but this seems to happen infrequently. The Department of Public Health, through the assistance of Dr. Sitaleki Finau, Head of the School of Public Health at the Fiji School of Medicine, started a certificate course under the Flexible Learning Program in Kosrae to provide training opportunities for department staff. Two sessions were taught in Kosrae by faculty for both undergraduate and graduate students. The possibility of expanding the courses into diploma and degree programs is being considered.

The Canvasback Missions and other charitable organizations have provided a variety of visiting specialists for a week or two every year, including OB, Ear, Nose, Throat (ENT) and other specialty surgeons, who primarily provide clinical services, but have not done much teaching. Other specialized medical consultations in Cardiology and Urology have been retained by the FSM Department of Health, Education, and Social Affairs to provide services on the island over the past

several years. Specialists from medical institutions in Hawai'i, Australia, and Israel have expressed interest in providing short-term medical consultations in Kosrae. Major barriers to continuing education were identified as a lack of resources (educators and materials), inappropriate scheduling, inadequate technology infrastructure for video teleconferencing and audio conferences, insufficient time to attend training, lack of funding for off-island staff development courses, and the absence of incentives to participate in training.

Priority Continuing Professional Development Needs

The major health concerns of Kosrae were identified by the local health workforce interviewed in the needs assessment as diabetes,⁶ hypertension, coronary artery disease, cancer, upper respiratory infections, skin disorders, and mental health issues,⁷ particularly suicide.⁸ A need for education in geriatrics and home care issues was also noted. Priority topics might also be based on the leading causes of death, which in Kosrae are related to cardiovascular disease (35%), followed by diseases of the endocrine system (12%), which are primarily due to diabetes and its secondary complications. The third most common cause of death is infectious diseases (7%), chiefly sepsis.

Other topics include main areas of focus identified by the Kosrae State Preventative Health Plan for 2001-2006: (1) maternal and child care services, (2) immunizations, (3) non-communicable diseases, (4) communicable diseases control and prevention, (5) AIDS prevention, (6) mental health/substance abuse prevention, (7) Sexual Transmitted Disease (STD) prevention, (8) environmental health services, (9) family planning, and (10) community centers.

Doctors expressed an interest in research methods in order to develop their own capacity to utilize local data to publish papers on priority local health issues. There was some sensitivity about the history of outside individuals using data from the local population to publish papers with limited benefit to and collaboration with health workers on Kosrae.

However, even more than these specific medical topics, there is clearly a need for better foundations in math, science, and computer skills for many of the allied health professionals, followed by structured basic training in their assigned specialties.

There was some sensitivity about the history of outside individuals using data from the local population to publish papers with limited benefit to and collaboration with health workers on Kosrae.

Potential Collaboration

Local healthcare provider expertise from Kosrae can be shared throughout the region. Dr. Vita Skilling, from Kosrae State Hospital, has presented at many conferences on diabetes in Kosrae and the region. Dr. Livinson Taulung, Hospital chief of staff, has expressed a strong interest in developing research capacity throughout Micronesia.

College of Micronesia – Kosrae State Campus

The proposed nurse-training program in the FSM would serve as an obvious partner in PACT training activities for nurses on Kosrae. The WHO, in collaboration with the College of Micronesia and the FSM Department of Health, Education, and Social Affairs, has conducted a needs assessment for the nursing program. Additionally, recent developments in computer lab infrastructure and internet access at the Department of Health Services may provide training opportunities for health workers.

Distance Education Technologies

There are very limited functional computer resources for health workers training. The library has been converted into a computer lab to provide CME and research. With unlimited internet access being supported by the WHO and the FSM Bioterrorism grants, staff can now use the computer lab for internet research and continuing education purposes. Telemedicine is currently available through the computer lab. Overseas conference calls and distance education is also now available with the new telephone system being installed in the department. PEACESAT Pan-Pacific Education and Communication Experiments by satellite is available for video teleconferencing and audio conferencing at the Department of Health Services, with free overseas connection capability.⁹

Limitations

Some respondents had difficulty ranking or prioritizing the various barriers or content areas. This occurred for several reasons: varying exposure or access to the different types of information, varying educational backgrounds, varied job duties; however, all uniformly agreed that additional training was essential for better healthcare.

Overall, no assessment was attempted to determine how many or what kind of health professionals are needed in the future to maintain and improve healthcare services in Kosrae.

Finally, the situation is fairly marked by slow change. Consequently, this report was outdated upon completion, however it does establish a baseline for future comparison.

Summary

With a small hospital serving a small population on an isolated island with limited communications infrastructure, Kosrae's health education challenges will be difficult to address through topic-based distance education. The staffing shortages are exacerbated by the departure of experienced staff to other islands for better job opportunities. The severe impact of budget shortages on health staffing and resources are tremendous barriers to health worker training. In order to develop successful long-term sustainable training programs for Kosrae State, the budget situation facing health services will need to be addressed at the FSM national level.

With a small hospital serving a small population on an isolated island with limited communications infrastructure, Kosrae's health education challenges will be difficult to address through topic-based distance education.

PACT should also support development of the basic telecommunications infrastructure including exploring the use of Voice over Internet Protocol technologies to allow for telephone and audio conferencing capability. PACT should explore providing basic computer resources with at least limited internet connectivity to enable distance education. There is interest among healthcare workers in developing the capacity to provide more local training needs. PACT should help develop the research capabilities of interested individuals through training in research techniques and guidance in scholarly writing while addressing concerns over ownership issues.

Acknowledgements

The authors wish to thank Dr. Livinson Taulung, Kosrae Hospital Chief of Staff; Ben Jesse, Hospital Administrator; Matchuko Talley, Public Health Administrator; Clain William, Chief of Pharmacy; Mirrah Palsis, Chief Nurse; Eltrerina Shrew, Nurse Midwife; Arkelus Esau, Head of Radiology; Melani Sigrah, Acting Chief of Dentistry, Dentist; and Nena Benjamin, Head of the Lab, for their participation in this study. Drs. Chen and Maskarinec alone are responsible for any errors that remain.

This project was funded by HRSA Grant #1 U12 HP01064 to the UH JABSOM DFMCH. The Pacific Association for Clinical Training (PACT): A Cooperative Agreement to Plan, Develop and Operate a Continuing Clinical Education Program in the Pacific Basin; Dr. Neal Palafox, Principal Investigator.

References

1. Segal HS. Kosrae: the sleeping lady awakens. 2nd ed. Tofol, Kosrae, FSM: Kosrae State Government; 1995.
2. Hezel FX. The new shape of old island cultures. Honolulu: University of Hawai'i Press, 2001.
3. Investment Guide, Federated States of Micronesia [homepage on the Internet]. Polikir, Pohnpei, FSM: FSM Guide [cited 2007 Mar 30]. About the Federated States of Micronesia: Population [1 screen]. Available from: http://www.fsminvest.fm/fsm/about_fsm.html.
4. Pacific Island Health Officers Association. Health Data Matrix (1999-2001). Pacific Islands Cancer Initiative 2002, Country Assessment. Honolulu, HI: PIHOA; 2002.
5. World Health Organization Country Health Information Profiles (CHIPS): Micronesia, Federated States of, pp 227-242 [monograph on the Internet]. Manila, Philippines: WHO Regional Office for the Western Pacific. c2006 [cited 2007 Mar 30]. Available from: <http://www.wpro.who.int/NR/rdonlyres/CDF5AF3-175E-4471-BBA9-97896AF6D900/0/21MicronesiaFS08.pdf>.
6. Shmulewitz D, Auerbach SB, Lehner T, Blundell ML, Winick Youngman LD, et al. Epidemiology and factor analysis of obesity, type II diabetes, hypertension, and dyslipidemia (syndrome X) on the island of Kosrae, Federated States of Micronesia. *Hum Hered.* 2001; 51(1-2):8-19.
7. Hezel FX. Schizophrenia and chronic mental illness in Micronesia: an epidemiological survey (with Wiley M) Isla. *Micronesian Seminar articles* [serial on the internet] 1992 (Dry Season) [cited 2007 Mar 30];1 (2):329-54. Available from: <http://www.wpro.who.int/NR/rdonlyres/CDF5AF3-175E-4471-BBA9-97896AF6D900/0/21MicronesiaFS08.pdf>.
8. Waldo M. Schizophrenia in Kosrae, Micronesia: prevalence, gender ratios, and clinical symptomatology. *Schizophr Res.* 1999 Jan 11;35(2):175-181.
9. Higa C. Pacific Association for Clinical Training: e-Learning telecommunication infrastructure as sessment in the U.S.-Affiliated Pacific Islands. *Pac Health Dialog.* 2007;14(1):89-97.

There is interest among healthcare workers in developing the capacity to provide more local training needs. PACT should help develop the research capabilities of interested individuals through training in research techniques and guidance in scholarly writing while addressing concerns over ownership issues.