

Community Dermatology

At the Rainbow's End: Public health and dermatology in the Republic of Palau

Wingfield Rehmus, MD MPH

Clinical Assistant Professor, University of British Columbia Department of Pediatrics, Associate Member Department of Dermatology and Skin Science

The Republic of Palau is a nation in transition. Having gained political independence from the United States in 1994, this Western Pacific island nation is young as a political entity, yet has a tradition and people which date back thousands of years. At the same time that Western influence continues to change basic institutions such as family structure and customs, Palauans are fostering "Kle Belau," a sense of pride in their cultural heritage and tradition. Within the health arena, the nation is experiencing a common health transition with a shift of illness typical for underdeveloped nations such as malnutrition and infectious disease toward those illnesses typical for developed countries such as obesity, heart, disease and kidney failure. This leaves the country at risk on both fronts and places strain on the limited health resources. The health infrastructure in Palau was largely developed by the various foreign powers that have occupied the country and was designed to fit their needs and perceptions. Today there is increasing desire to remake the health system to fit Palauan needs and to realize a Palauan vision of health.

In the 1977 Comprehensive Health Plan for Palau, diseases of the skin and subcutaneous tissue were listed as the leading cause of outpatient visits to the hospital. With improved sanitation, clean water, and access to care, skin disease dropped from the list of leading causes of outpatient visits and the rates of conditions such as pediculosis and tinea corporis have declined significantly. Still, skin disease remains a significant concern for many patients. Superficial fungal and bacterial infections remain common and rates of atopic dermatitis appear to be increasing in this region as in many other parts of the world. Leprosy remains a small but persistent problem and emerging infections such as dengue threaten to take hold in the country.

It was within this context that I had the privilege of joining the Bureau of Public Health both as a dermatologist and as the facilitator of the public health planning process in 2006. The planning process was slow, occurring over a 2 year period, during which time we worked to gain input from many groups in an effort to write a plan that developed from the grassroots rather than being dictated from the top down. While my roles as dermatologist and public health planner were entirely distinct, working concurrently in the two arenas reminded me that the medical care I provide must fit within the larger context of health care delivery. Challenges faced by the health care system impact everyday practice and the care I provide can be a part of the larger effort to improve health. I was also reminded that while medical advances have certainly contributed to health improvements, many gains for the community health have come through public health measures such as provision of clean water and improving social conditions.

Broadening the Definition of Health

Planning within the Bureau had been taking place for several years, but a comprehensive plan, which addressed all aspects of Bureau functions had not been carried out in many years. The Ministry of Health had adopted a mission statement, "Healthy Palau in a Healthful Environment." The first step in planning was to take this mission statement to the public to

learn just what Palau would look like if we achieved this mission. Based largely on those discussions, the first strategic direction of the Bureau is to “foster a broad definition of health that includes physical, mental, social, spiritual, family, community, and environmental health.” (1). The WHO defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” (2). In Palau, a society in which the individual often is secondary to the larger clan, this definition is taken one step further to include the spiritual health, family health, and community health.

Thinking broadly about health in a dermatology clinic is not always straightforward when a patient presents with a single skin issue they would like to have addressed. Still, family dynamics do come into play when treating conditions such as scabies and healthy families are more likely to be able to cope well with severe eczema in a baby. Lifestyle modifications are now more clearly important in treating psoriasis; stress reduction can play an important role in minimizing acne; and fostering adaptability and resilience will help all of our patients with chronic skin problems to live fuller lives. In the Palauan view of a healthy community, stigmatization of disease does not exist and given the visible nature of skin problems any decrease in stigma has the potential to make an enormous difference in the lives of our patients. In many ways, steps we can take to improve all aspects of health, not only in our clinics but also in our communities, will have positive benefits for our patients with skin problems.

A second component to broadening the concept of health within the community became evident through the planning process. Traditionally, health was “owned” by the community and decisions regarding health were made by practitioners within each hamlet or village. Public health messages were passed down as part of the oral tradition and dictated such things as extraordinary care of pregnant women. With the coming of Western influence and Western medicine, some responsibilities for health began to shift from the community to the institutions designed to address health concerns such as the hospital and Bureau of Public Health. At the same time, the Western concept of health as the absence of illness became more visible. The focus on illness began to neglect many culturally important components of health and did not give weight to the health of the community as a whole.

The goal of the Bureau is to provide the education and resources necessary for individuals to take control for their own health and for community norms to play a larger role in health advocacy. For example, seeing the increasing challenges due to alcohol abuse and a rising incidence of underage drinking, the alcohol abuse prevention program at the Bureau worked with school groups to paint billboards encouraging other teens not to drink and worked with the traditional leadership to institute a “bul” on underage drinking. In a bul, poles are placed at the entrance to each hamlet and anyone passing into the hamlet is responsible for learning what the poles signify and following the dictum of the bul. In the bul on underage drinking, not only teens found with alcohol, but also their families could be fined for not respecting the instructions of the chiefs.

Working to improve decision making about skin health outside of the dermatology clinic largely took the form of public education. At health fairs, a booth was set up to discuss skin disease, disease prevention, skin care and basic hygiene, often with school children whose classes attended the gatherings. On local television an hour-long talk show with an active live audience was focused on skin health and had such positive reception that we later filmed short segments on skin issues that could run during commercial breaks from other programming. Weekly dermatology cases were sent via email not only to the doctors, but also to the entire health community and even the head of the kitchen-staff later commented that he’d saved all of the

cases and had looked back through them to learn about scabies when one of his staff was diagnosed with the infestation.

Creating a Healthy Work Environment

The second strategic direction of the Bureau is to “Create a work environment that supports all aspects of the health of Bureau employees.” The Bureau of Public Health is one of the major employers in the country. As such, it has an obligation and an opportunity to simultaneously work to improve the health of its own employees as it works to improving the health of the community through its programs. By building the systems to support the health of its own employees, the Bureau can serve as a role model in bringing the sort of changes necessary for the wellness of the community. When patient hear the health messages provided by the Bureau, they also look to see how these messages are incorporated into the lives of those who are giving them. In public discussions, it was clear that when Ministry of Health employees are saying one thing and doing another, it diminishes the impact of the health messages being provided.

Since the time of implementation of the strategic plan, the Bureau has been working to improve the working environment, opening channels of communication, providing exercise groups after work, forming a Ministry of Health choir, and instituting an annual ecumenical prayer service in the hospital chapel. A major step taken this year was to make all Ministry of Health facilities chew free. Chewing betel-nut (*Areca catechu*), mixed with the leaf of the creeping vine *Piper betle* and lime is a very common practice in Palau and tobacco is often mixed into the quid. Betel nut, particularly when mixed with tobacco has been linked to oral, throat and stomach cancer in addition to various less well defined cardiovascular symptoms. Despite the known health risks of chewing betel nut, the practice is not only widespread, but also often considered an important part of culture. Making the hospital “chew-free” is a clear indication of the importance being placed on creating a healthy environment, free of spit and discarded chew, and of striving to be a role-model for health. With time, the healthy changes made within the Ministry may begin to diminish acceptance of unhealthy behaviors, even those that have long been culturally important, but are now known to be harmful to health.

Building Self-Reliance

A third strategic direction of the Bureau of Public Health is to become more self-reliant and to prepare for possible changes in the funding stream. A high percentage of funding for both clinical and public health activities comes from outside sources, in particular the United States. Under the Compact of Free Association with the United States, programs within the Bureau are eligible to apply for US Federal Grants in the category of US territory or state. This is in addition to significant funds provided to the nation as a whole under the compact, many of which are appropriated to health. The total expenditure for health was 10.8% of the GDP in 2008 with a total per capita expenditure or \$957 USD. At a Compact Review Commission Economic Symposium, it was estimated that in order to be fully fiscally self-sufficient, the government would need to decrease expenditures by 40%. Even coming close to this goal will require streamlining of efforts, cost-saving mechanisms, and avoiding duplication of effort.

Costs of running a health care system in a remote location are high and with a population of only 20,000 in the nation many services are not cost-effective to be run on the island. Additionally, the transition from communicable disease to non communicable disease places increasing burdens on the health system. As the WHO reports in its Country health profile, the “transitional status has led to pending issues that need to be evaluated, such as the cost of off-

island medical referrals, the cost of hemodialysis and intensive care services, and the financial sustainability of a secondary health care facility in such a small island community.” (3). Hemodialysis for fewer than 20 patients has been estimated to account for a third of the clinical/hospital budget each year. With increasing rates of obesity, hypertension, and diabetes, there is great concern that renal disease will have a significant impact on the financial stability of the Ministry of Health. Addressing the underlying causes of renal disease may be crucial to sustainability of the health care system as a whole.

There is no health insurance available in Palau. Palauan citizen’s pay for their services on a subsidized sliding scale when accessing care at the National Hospital or at community health clinics. Private clinics charge different rates for their services and do are not compelled to follow the sliding scale. The population of Palau includes about 5000 foreign workers, many of whom are low-wage earners, primarily from the Philippines. These workers pay a higher rate for their care at government sponsored care facilities than Palauan citizens and often choose to obtain care from the private clinics. All prescriptions are \$5 USD to fill at the hospital pharmacy and are priced according to cost at the private pharmacies.

In a clinical setting, working in an environment of limited resources presents many challenges. The formulary of the Belau National Hospital was designed to match the recommended formula of the World Health Organization, but medications are not always available at any given time. While doxycycline is on the hospital formulary, prescribing this medication for one teenager with acne for 3 months may require the entire national supply of the medication. Other drugs such as isotretinoin are simply not available, and there is no mechanism for bringing liquid nitrogen into the clinic for treatment purposes. Betamethasone dipropionate is available in a 45gm tube for the same \$5 as triamcinolone, which is available in a 15gm tube. In order to save patients significant costs, betamethasone dipropionate may be prescribed with instructions for compounding down to a lower concentration with petrolatum ointment at home. Private pharmacies do increase the availability of most medications for those who can afford them. Remarkably, even infliximab can be obtained through the private pharmacy, though with an average per capita income of \$7000 (4), few could afford the treatment.

Laboratory testing is also impacted by financial constraints. Reagents may be out of stock or not available. Biopsies are sent off-island for review and are sent in batches for cost-savings. This can lead to a several week turn around between the biopsy being taken and the results being received. Clinical dermatology skills as well as proficiency with KOH preparations and Tzank smears are invaluable in a setting lacking the availability of diagnostic testing. While testing may be available for confirmation of the diagnosis, often the time required to receive the results makes the testing nearly irrelevant in the moment of clinical decision making.

Self-reliance extends not only to fiscal sustainability, but also to work-force issues. The Bureau of Public Health would like to have the internal capacity to meet its needs without needing to bring in costly consultants and expatriates for short term contracts. Palauans ideally will be treated by and cared for by Palauans; however, “there is a critical shortage of health workers, especially among nurses and allied health personnel.” To increase the supply of health workers within the country the Ministry of Health is working in conjunction with the Ministry of Education to steer high school graduates into health careers through marketing, mentoring, and making the Bureau of Public Health an attractive potential employer.

There are currently 29 physicians, 2 pharmacists, and 112 nurses for a population of approximately 20,000 residents. These physicians cover general practice, internal medicine, pediatrics, psychiatry, pathology, anesthesiology, obstetrics and gynecology, general surgery,

and orthopedic surgery. Each of these physicians takes time working in the outpatient walk-in clinic and covers shifts in the emergency room. While many of the doctors are Palauan or have been in Palau long enough to be adopted into the culture, others are foreigners in the country on shorter 1-2 year contracts. Specialty care is provided either through expensive off-island referral or through episodic trips from visiting specialists.

Efforts by visiting specialists are crucial to the medical system that cannot afford to hire such personnel full-time. In a remote island nation, the population density is not large enough to support most specialty practices and episodic visits are important in filling the void. When the specialist is not in the country; however, the local physicians must have the capacity to fill in the gaps. Education of the local physicians and development of programs to support care between visits helps to build the self-reliance desired. Educational programs are most effective when setting appropriate, focusing on diagnosis and treatment within the resources available.

During my years in Palau, we instituted a case-of-the-week series as mentioned above. The cases were sent via hospital email weekly to all hospital staff on Monday and answers were accepted through Thursday. On Friday, answers to the case questions were emailed. All who participated were entered into a draw for a small weekly prize and at the end of each 6 month series, a prize was given to the person who answered the most cases correctly. Throughout the week, questions frequently arose about the cases leading to discussions in the halls about dermatology care. More traditional educational activities such as lectures to nurses and doctors were given and a dermatology primer was comprised based on cases seen over a 2 year period. Hopefully through these efforts, Palauan physicians and nurses are now better able to care for their patients with skin disease.

These are three of the six strategic directions identified as part of the planning process. In addition to drafting strategic directions, the planning process also identified priority health concerns for the country including obesity, alcohol abuse, tobacco use, emerging and re-emerging infections, depression, and gaps in immunization coverage. For each of these concerns, coordinated programs are being created that address the problem from many angles and engage multiple divisions of the Bureau of Public Health.

The Public Health Strategic Plan was never intended to specifically improve the skin health of Palauans. Still, many of the efforts outlined through the plan will have a positive impact on skin health and the health of people with diseases that manifest on the skin. Efforts to decrease emerging and re-emerging infections will help to lower rates of dengue that is threatening to increase on the island and to carefully track and treat cases of leprosy. Emphasis on making healthy lifestyle choices, addressing obesity as a public health problem and making the built environment more conducive to good health will benefit patients with psoriasis known to be at risk for co-morbidities as well as lowering risk factors for renal disease, a key component to long-term fiscal sustainability of the system as a whole. Broadening the definition of health reminds the medical community to ask about family issues, to foster adaptability in our patients, and to empower the community to make good decisions regarding health. Efforts of the medical community to improve its own health can begin to shift social norms as have been seen with smoking in the United States and sun-protection in Australia. Finally, through education and efforts toward fiscal responsibility, the community can make strides toward building the self-reliance and begin to address some of the vulnerabilities that threaten the sustainability of the entire medical system.

References

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