

In Celebration of NP Students

The nurse practitioner (NP) profession is continually enriched by students completing their education and moving into practice. This column celebrates NP students whose contributions to the profession or to health care are making a difference, even while they are still in their educational programs.

—*Phyllis Arn Zimmer, MN, FNP, FAAN, Contributing Editor*

Learning about Global Service in the Peruvian Amazon



By *Ada Otter, BSN*

Over 5 years ago, I embarked on a life-altering career change from ocean mapping to health care, driven in large part by my passion for global health. As a Doctor of Nursing Practice (DNP) Family Nurse Practitioner (FNP) student at the University of Washington in Seattle, I received funding from the *R. Hunter Simpson Global Service Learning Fellowship* that allowed me to spend 3 weeks in September 2009 working with Amazon Promise (AP), an established non-

profit organization that collaborates with communities around Iquitos, Peru, to provide healthcare services to the underserved. This was my vision of international practice. As I flew above the clouds from Lima to Iquitos and watched the Andes give way to endless fields of green jungle, I felt content, as if everything was falling into place.

Our Mission

AP multidisciplinary teams, including both local healthcare providers and international volunteers, work to provide direct patient care to people living in remote Amazonian villages and urban slums, who have no other access to health care. I began my Peruvian experience with one week in

Iquitos, a jungle-bound city of over 300,000, working in three different neighborhoods within the riverside slum of Belén. Makeshift “clinics,” often just a collection of desks and handmade benches under a plastic tarp, were set up in each neighborhood. During the clinics, teams composed of a Peruvian physician, one or two volunteers, and a translator saw and treated patients, who often presented in family groups of six or more. At various points during the day, community health promoters presented talks on dental hygiene and HIV/AIDS to waiting patients and curious community members. During this initial week, the eight visiting team members—five British medical stu-

dents, two physician assistant (PA) students from Yale, a surgical PA from Oregon, an experienced emergency department physician from New Mexico (and returning AP volunteer), and I—got a chance to know one another, while also exploring local ethnobotany traditions and visiting the local tropical medicine laboratory. Members of our volunteer group worked well together, and the diversity of our national and professional backgrounds afforded many opportunities to learn about differences in healthcare education and the provision of services among the countries represented. The team then moved along Amazon tributaries into the jungle, where we lived and worked for the

Trash along the riverbanks in Belén

remaining 2 weeks. I personally worked with at least 163 patients; as a group, we served over 1,200 men, women, and children.

Where We Worked

Not surprisingly, the Amazon jungle is very river-centered, and communities cluster around local river tributaries. The rivers provide sustenance through hunting, fishing, and agricultural cultivation; are the avenues for transportation and commerce; and play a role in indigenous spiritual belief systems. Belen is a slum area within Iquitos, located directly on the riverbanks, where all of the houses are designed to float because the year is divided into two seasons: low and high water. During yearly flooding, the entire neighborhood floats on buoyant wooden logs, with individual shacks and homes anchored to the ground below and connected by plank walkways. Drowning becomes a major issue for young infants and children who cannot swim. Come low water, such as during my time with AP, the river level drops and all the homes settle back onto the dirt. Soil-borne contaminants, including bacteria and parasites (especially ascariasis), are actually more prevalent during the low-water season, when the river water is more concentrated and stagnant. As a result, there are seasonal trends in the incidence of parasitic and bacterial gastrointestinal (GI) infections, with the burden being slightly less during high water compared with the low-water season.

During our 2 weeks in the Amazon jungle, we lived near the entrance to the Pacaya Samiria Reserve, travelling each day by riverboat to neighboring villages to conduct clinics. For most of our time in the jungle, our team lived in a wood-and-screen hut that usually houses visiting field researchers. Since we were located 10 minutes outside of the village, we would gather before dusk every evening—armed with flashlights and using a buddy system—and embark on the walk to our temporary home. Upon our arrival, we used flashlights to help each other check the beds and bathroom, including the buckets of river water used for showering, for spiders and scorpions. Tucked under mosquito netting in simple wooden bunks, we fell asleep at night to a cacophony of insects, amphibians, birds, and animals of the night. Dawn's arrival was announced by a fading away of the natural background noise to the silence of day.

We learned never to go any distance without knee-high rubber boots due to the rain, mud, and extremely pruritus-inducing chiggers that inhabited the grass in villages (but not the jungle itself). AP teams are supported by a wonderful cook, who created feasts (often composed of river fish, white rice, plantains, and spicy relishes) for dozens without access to electricity. On days off, we hiked through the surrounding jungle with village guides and played impromptu soccer and volleyball with local villagers on an expansive sand bank at

sunset. I remember catching glimpses and hearing the calls of pink dolphins alongside our wooden boats as we travelled the river tributaries and reveling in memorable rainbows that arched over the jungle after afternoon rainstorms.

The Challenges—Often More than Medical

While we encountered many uniquely “tropical” medical conditions, such as piranha bites, machete injuries, malaria, and GI parasites, the majority of patients presented with primary-care problems. In spite of their commonplace nature, these supposedly simple primary-care issues presented a multitude of challenges. In an environment with few or no resources, we faced the question of how to ethically and effectively diagnose, treat, and manage acute and chronic diseases without the tools that most providers are trained to rely on. In the Amazon, there are few labs, no imaging, a limited supply of short-term medications that have been donated, virtually no support for chronic medications, and minimal systems for follow-up. In short, as in much of the world (and pockets in the United States), the communities were extremely limited in resources.

For acute infections and chronic diseases where long-term medications are indicated (eg, stage II hypertension or heart disease), we had access to a “pharmacy” of donated medication that was stored in a few Rubbermaid® tubs. At most, we had a 30-day supply. What happens when the medications inevitably run out? In some cases, it was more dangerous to start and abruptly stop pharmacological treatment than to not give medication at

all. For example, it simply wasn't safe to initiate beta-blockers or even many antihypertensive medications when there were no providers around to monitor patients, assist in case of a hypotensive episode, or adjust the dosage. In general, any drugs requiring carefully tapered discontinuation instead of allowing abrupt termination were automatically off the table because of safety concerns. Most patients have no money to buy prescription medications. Even if they did, there might not be a place to refill them—the nearest pharmacy often being days away by boat—or access to needed transportation.

Parasitic infections are rampant in these urban and rural jungle communities, which have no waste management systems. Local water bodies are the single source for drinking water, bathing, and washing clothes, as well as the depository for human waste, either directly or through runoff. The water contamination issue was an ever-present problem throughout all of the communities in which AP worked. We observed that so much of an individual's health is dependent on social determinants beyond his/her direct control, such as poverty, pollution, lack of infrastructure, and gender inequity. As a healthcare provider, I had to recognize and somehow mentally process the relatively small role of medical care within this larger scope. One can treat children with antiparasitic drugs to temporarily relieve their suffering from intestinal worms, but the infection will undoubtedly recur because the entire village obtains drinking and cooking water from the same body of water used for waste disposal and washing. The real “treatment” for fecal-oral parasitic infec-

tions in this situation is not albendazole, an antihelminthic that is one of the most common medications prescribed during our trip, but rather the establishment of a sustainable sewer or other waste disposal system that would prevent contamination of water sources.

One of many children we met is typical of these problems. This 6-year-old boy, who was underweight and of small stature, was brought in by his mother for an ongoing history of bloating and loss of appetite of 5-months duration, as well as recent blood and mucus in loose stools. His siblings all had similar symptoms. Their last dose of antiparasitics had been 8 months previously. Since the mother suspected “bichas” (worms), she had come to our clinic specifically to request antiparasite medication for all her children. The boy's abdomen was distended and taut on exam. A stool sample was positive for ova and parasites, as well as WBCs and RBCs, under microscopy. Based on a likely diagnosis of GI parasite infection, the patient and his siblings were treated with 400 mg of albendazole during the clinic visit. We gave oral rehydration salts and bar soap for future home use, counseled the mother about boiling all water used for cooking and drinking, and discussed hand hygiene.

Parasitic GI infections such as experienced by this little boy are a poignant illustration of how individual health is impacted by social policy. At its root, parasitosis is an environmental health and justice problem, not just a parasitic contamination problem, although both

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Well baby exam outside clinic



AP staff doing dental hygiene education in Belen

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aspects should be addressed in prevention and treatment efforts. Patients can be treated with benefit for 3 months (ie, the duration of albendazole efficacy) but then will be recontaminated by the very same water source that infected them in the first place. The chronic, recurring nature of parasitosis results in long-term health problems far beyond the physical discomfort and GI upset experienced by the infected individual. The constant parasite burden has a profoundly negative impact on GI absorption and general nutritional status, resulting in anemia, malnutrition, physical stunting, and cognitive delays. Unfortunately, affected people tend to have limited resources and very little political power and to live in remote areas. Parasitic infections are intimately tied to poverty, and they contribute to further social marginalization.

A regularly scheduled deworming provides at least a temporary reprieve from the parasite, creating windows of opportunity for GI healing and improved nutrition. Over time, intermittently lightening the disease burden increases school attendance through reduced absenteeism and has been shown to improve cognitive ability. Correspondingly, the World Health Organization has set a target of treating 75% of all school-age children at risk of morbidity from soil-transmitted helminth infections and schistosomiasis by 2010. However, deworming is not curative. A truly long-term cure is dependent on factors beyond the healthcare arena, such as the development of a government-supported and maintained infrastructure for the safe disposal and treatment of human waste to ensure a clean water supply and minimize fecal contamination. The raw waste that is the source of initial contamination could be handled through the creation of sustainable sanitation facilities, even in remote areas. Urban areas can feasibly institute city-wide drainage systems and waste processing facilities similar to those used in the developed world. In rural areas, strategically located brown-water drainage fields and plant-based decomposition areas can help filter human waste and prevent it from entering local water sources. The other approach is the filtering or boiling of water by the end user. These endeavors necessitate institutional support for population-based prevention and treatment at both local and national levels.

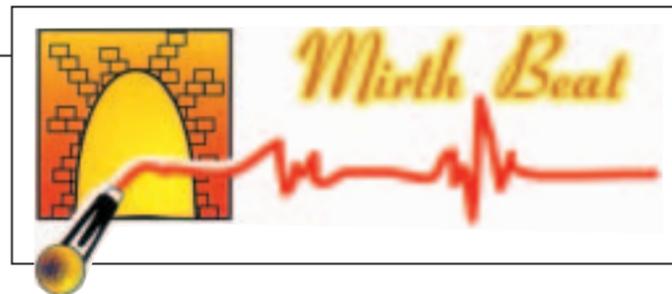
Thoughts upon Coming Home

On reflection, I would like to have learned more about traditional ethnobotany and indigenous healing traditions. Many Amazonian ethnobotany remedies have become the focus of a growing body of scientific research, and non-allopathic care is often what many patients want or need. This learning component would have been particularly valuable because local remedies that do not require formal money and a pharmacy may be more sustainable over time. In addition to pragmatic considerations of resources, traditional remedies have the benefit of cultural appropriateness since patient beliefs about the causes and viable solutions for their lack of wellness may extend beyond the bounds of the allopathic healthcare model. Unfortunately, the shaman who usually works with AP was unable to participate during my trip.

Ever since I first switched to health care, I have envisioned global health as the centerpiece of my FNP practice; however, this type of work is actually quite rare. As time passed and the personal and financial challenges inherent in career changes and graduate study mounted, the likelihood of realizing a balanced domestic-international FNP practice seemed increasingly improbable. These 3 weeks of intensive international clinical experience occurred at just the right time to reinvigorate my passion for health care and to provide a taste of what

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Family Tree Picnics

By *Kevin Lee Smith, RN, FNP, MSN*

I recently read a newspaper article recommending that as we gather for large family reunions during the summer and fall months, we shouldn't squander our time talking about Auntie B's killer creamy coleslaw recipe, baseball standings, or how much you *love* family reunions. We should implore all those relatives attending to report their family health histories. Yes, ask the whole gang to chronicle their health stories as far up and down the genealogy tree as possible for the benefit of the remaining family members.

Thanks, but I would rather volunteer to serve as a human horseshoe stake. "Go for another ringer Uncle Bob. Really, I don't mind at all. It's a good sort of pain."

According to a survey reported by the US Department of Health and Human Services, 96% of Americans agree that knowing their family health history is essential; yet, less than a third have congregated at reunions to compile their health histories. Why? Because the three-legged-race is a much more appealing activity than discussing the morbid details of what might cause your demise!

Certainly it is important to know your family history. But taking a health history at a family picnic is not for me. First of all, as a nurse practitioner, I spend enough time asking people about their health histories as it is. Going through a checklist of maladies with the relatives is not my idea of a party. Secondly, I know from experience that when you ask someone about their health history, they will tell you...and tell you...and tell you. Third, you know the old saying: family, yard games, and beer do not mix well with genealogy. I made that last part up...but it will surely be an old saying someday.

Family reunions have a rhythm to them. There is the early phase of the get-together when you put on the nametags and exchange pleasantries and small talk. You



touch on the typical topics such as gray hairs, kids growing up so darn fast, scholarships, and prison records...the routine stuff. The pre-event jitters subside, and it looks like fun. The teenagers and young ones hover about waiting for the sloppy joes to be served. Someone worries out loud that the potato salad with mayonnaise might poison everybody. So is this when you start asking family history questions? You don't want to talk about psoriasis or syndromes while eating, do you? What about the children? My daughter can't stand hearing the word "bunions," and you know that this will be the least of the unsavory health terms uttered once the adults get going. Did grandma just say "severely inflamed hemorrhoids?"

Perhaps one could gather most of the family health history using astute observational skills. Let's start with the mental health history. You look around. Yep, we are all a bit nutty. Got that one covered. Next, great-uncle Frank

has a bit of a hitch in his step when he goes over to his truck to get his cooler. Probably arthritis, but he is 69 years old so most likely not a big deal. Then you may encounter some touchy subjects. Does grandpa have a dark mole on his ear? Nope, just a baked bean. We are really making some progress.

Now it's time for the relay races—also known as the cardiovascular health test. I am guessing that a potato-sack race for the over-60-year-old contingent would give as good a picture of family heart health as an angiogram. Let's just hope that the picnic shelter has an automated external defibrillator device close by.

Seriously now, obtaining a full family history is a great idea that can help you and future generations of your family. Incorporate this undertaking into your family reunion if you like. But I guess that most of us will continue to get this information from the best sources of all—our mothers and grandmothers who have the knack of cataloging this information along with Auntie B's killer creamy coleslaw recipe.

Now somebody tell grandpa about the baked bean. 

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global health clinical service can look like. It gives me hope that my professional path can expand beyond the conventional boundaries of what is expected of primary care providers. Now, I am left with the question of how to integrate global health experiences like this into my professional career. In an age of production-oriented health care, I must continue to explore how to find a paid position as a primary-care clinician and still have time to

explore and contribute to the rest of the world. My never-to-be-forgotten experiences in the Peruvian Amazon renewed my determination to utilize my DNP preparation not only for advanced-practice clinical care but also to have a role and a voice in global health policy, research utilization, and advocacy. I am deeply appreciative for the support that made all of this possible. 

World Health Organization. *Report of the third global meeting of the partners for parasite control: Deworming for health and development.* Geneva: World Health Organization, 2005. Available at http://whqlibdoc.who.int/hq/2005/WHO_CDS_CPE_PVC_2005.14.pdf. Accessed 5-10.

Let's Celebrate NP Students!

Faculty—do you have a student with a special story to tell? Students—are you making a difference in your community, in the United States, or abroad? Do you know of a student who is making a special contribution to our profession, to health care, or to patients? Please let me hear from you! Send information or an article (e-mail in Microsoft Word format) to Phyllis Arn Zimmer, MN, FNP, FAAN, at pzimmer@nwlinc.com. Please provide your name, address, phone number, fax, and email information. If you have questions, please call 425-861-0911.

Starting an NP Practice the "Wright" Way

Don't miss Wendy Wright's informative article on starting an NP-based practice in the fall issue of *Practice Management*. See our website at

webNPonline.com

