GHANA EXPERIENCES
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This February, I traveled to Ghana, West Africa for a two week medical mission trip with the Christian Medical & Dental Association (CMDA). Our group consisted of 3 MD's, 2 DO's, 1 PA, 1 dentist, 2 medical students, 2 nurses, 1 pharmacist, and 2 support personnel. We set up clinics in school buildings in two small villages in Southern Ghana, Adutor and Agorta. The trip was coordinated by CMDA and the Fellowship of Associates of Medical Evangelism (FAME) in Ghana, so that we had Ghanaian contacts to help us every step of the way. About 40-50 Ghanaian pastors and health care workers worked along side us to translate the tribal languages into English, to explain to patients how to take their medications, and to offer spiritual counseling and prayer for those in need. The Ghanaian people responded in droves. There were hundreds of patients lined up each morning, ready for treatment, and there were hundreds more waiting in line at the end of each day that we simply could not treat. We were able to see over 4000 patients in 9 clinic days, and handed out over $100,000 worth of medications and vitamins. Every single child in two schools, grades K-12, received Albendazole and multi-vitamins.

In Ghana, I was introduced to a very different culture and a third world way of life. The villages where we worked, of course, have no electricity, running water, or sanitation system. Most people live in mud huts with grass or tin roofs. Their diet consists of mostly fruits and vegetables grown on their land, and very little protein. Despite this fact, we did not see very many cases of kwashiorkor. We attribute this to the fact that there is a decent supply of tilapia fish in the area. The Ghanaians are spiritual people, and this affects every aspect of their lives. The tribal chiefs and fetish priests/priestesses have great control over what goes on in the villages. Most physical ailments or misfortunes in life are attributed to spiritual or moral causes. People often feel that their medical conditions are caused by a curse placed upon them by an enemy, or by God as a punishment.

Access to health care and financial resources is one of the biggest problems in Ghana. There are excellent clinic and hospital facilities in existence, though sparsely distributed, and there are good public health initiatives available as well. However, most people are unemployed or make just enough money to pay for food and clothing, and are unable even to afford transportation to a clinic or hospital. The health care facilities are so under-staffed and lacking in financial resources that even those that are fortunate enough to make it to a clinic/hospital may not receive the care they need. FAME is working to make health care more accessible by building clinics in rural areas and providing resources for patients to get treatment. Additionally, they are actively recruiting physicians and nurses to provide care in these facilities.

Another major problem is lack of health education. Most public health ads and pamphlets are in English, the official language of Ghana. However, education is not a major priority in the villages, so many adults cannot read or understand the public health information that is available. With the help of our translators, our patients and the local healthcare workers were educated about the most common causes of disease and discomfort, and practical tips to reduce these in daily life. For example, one of the most common complaints was "waist pain." This is what we would call "low back pain" or "lumbar strain." This problem is due to the everyday work the villagers do. They spend hours at a time bent over in the fields, and lifting heavy loads from the ground to carry on their heads. It was simple to teach them how to lift with their legs to spare their lumbar spine, and a small dose of ibuprofen went a long way. Another common complaint was that of "palpitations." Instead of rushing to get an EKG, as an astute third-world clinician, I learned to simply investigate the history further. These palpitations were found to occur during a long day of working outside in 90-100º temperatures. When asked how much water they drank, most patients admitted to drinking only 1-2 cups in an entire working day. The diagnosis was, of course, dehydration. Two very simple solutions were available for them: drink more *(clean)* water, or drink the milk from a green coconut (unripened coconut milk serves as an excellent oral rehydration solution). Clean water was yet another problem in this area. Schistosomiasis was rampant, especially in the ponds and puddles where children play daily. We taught people to bathe or play in areas with *moving*, not stagnant, water. We also taught them that boiling water before drinking or cooking, and collecting rainwater from a tin roof were good ways to get clean water.

The rare tropical disease was perhaps the most interesting part of my experience. I was able to see many tropical diseases and many late findings of common diseases that I will never see in America. It was fascinating to see so many of the strange things I had learned about in Microbiology come to life. As a resource, I used CMDA's *Handbook of Medicine in Developing Countries*. I read about malaria, schistosomiasis, typhoid fever, amebiasis, and various other parasites, and then I was able to put this into practice. I had to rely more on my physical diagnosis skills and medical knowledge than ever before. I functioned as a real MD, seeing 40-60 of my own patients per day. When I was uncertain about a diagnosis or treatment, or when I felt my exam was inadequate, I requested the help of the MD's and DO's on my team. Otherwise, I felt confident and capable to diagnose and treat most of the patients I saw. Because we had no lab tests or imaging studies, I utilized my critical thinking skills tremendously with each encounter. I learned that terminal hematuria is a sign of schistosomiasis, but hematuria throughout the stream is a late finding of malaria. I was able to examine massive hepatosplenomegaly caused by chronic malaria, and a few cases of elephantiasis. I diagnosed and learned about the causative organism of Buruli ulcers, *Mycobacterium ulcerans*. I also learned how to diagnose and treat typhoid fever. I may never see these diseases in my practice in the U.S., but I will never forget their existence.

Overall, my trip to Ghana was an eye-opening adventure. I am grateful for the opportunity provided to me by both UT and CMDA to participate in such a worthwhile project. I hope to be able to be a part of many international medical mission trips in the future.