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Global Health Scholars Program – Micronutrient Deficiencies in the Eastern Region of Ghana
Koforidua Ghana
June 4, 2016 – July 4, 2016



My Experience

I was most impacted by my observations of the Ghanaian people's way of life. It was so different from what I was used to. These short interactions and awkward introductions were one of the most enjoyable parts of the trip for me. It was through these interactions where I gained the most knowledge about what life is like in the Eastern Region of Ghana.

Overall the trip went well. We were able to complete our project concerning micronutrient deficiencies. However, doing so was not easy and we had to overcome many setbacks. The expectations I had for this trip and what actually happened were very different. It was my understanding that through our partnership with Mount Crest University we were going to complete our research project. I had assumed that we had permission to do so and that all the necessary translators, transportation, and sampling locations had been worked out prior to our arrival. I was wrong to make these assumptions. The first half of our trip was spent organizing the research project and acquiring knowledge about the area. We had to gain permission from leaders of different communities to administer the survey, we had to ask the Eastern Regional Hospital to pull people from their staff to help us translate, and then we relied on the translators to help us pick sampling locations. We were not able to access any maps or demographic data and as a result we did not have the chance to randomize our sample or ensure that

we were gathering strictly rural data in one area and urban data in another. We did a lot of waiting around during the first half of the trip because we needed so much assistance there was not much we could accomplish on our own.

All of these set-backs are not necessarily bad. It did delay the start of our research and made most of us very frustrated in country. However, through this experience I learned about how many moving parts that need to be considered when trying to carry out research in a foreign country. I realized that it is not only necessary to have strong partnerships, but it is also important to have genuine interest in the project from the people you are working with. The lack of interest and collaboration on the project from our in-country partners at the Eastern Regional Hospital and at Mount Crest University, which was expressed to me, is my only real criticism I have of this experience. It seemed as if each institution had a different idea of the purpose of our presence. Additionally, I think each of our partners would have liked to see us take a slightly different approach in assessing the micronutrient deficiencies. I believe the Eastern Regional Hospital would have appreciated a more clinically directed survey and I think Mount Crest University was expecting us to learn more about people's motivation and education. While we did attempt to cover all these bases with our survey, it was too much to accomplish in this trip. I think focusing on one micronutrient deficiency in the future may be a better approach.

While not completely satisfying any of our in country partners, our large survey did reveal some fascinating results. We learned that a majority of caretakers of children did not know any of the benefits of iodine, iron or vitamin A. Furthermore, assessing household salt samples revealed that a majority of salt was not iodized sufficiently, even among samples in which the owners were convinced they contained iodine. We uncovered that affordability of micronutrient rich foods and living in an urban versus a rural environment were factors affecting nutrition of children under the age of five. I am excited to use these results to help shape the work of future global health scholars because I believe we uncovered many potential points for future intervention that could have enormous benefits.

During this trip, our entire group shared all responsibilities. We were responsible for being prepared each day with the materials and tools necessary to successfully conduct surveys. We were also responsible for carrying cell phones, so that in case of an event or change of plans we could contact one another and Dr. Fredrick. I believe that our group did a great job of sharing different responsibilities. We ensured that each member of the team had the opportunity to experience all of the components of our project such as taking salt samples, interviewing, scribing, and participating in shadowing days at the Eastern Regional Hospital.

Overall I think that this trip was a great learning experience. I learned a lot about micronutrient deficiencies. More importantly, I learned a lot about the research process. Conducting public health research was new to me and especially doing it in the global setting revealed how much preparatory work is necessary to carry out a successful and meaningful project. I would suggest to next year's Global Health Scholar's that they take a more active role in the work that needs to be done prior to leaving for Ghana. I think this year we were not as involved as we could have been. Furthermore, I think there were several miscommunications concerning our survey and IRB which resulted in us having a final product that none of us were fully happy with. I do not know if it is possible, but I think having Penn State student's



work directly with student's from Mount Crest University or with house officers from Eastern Regional Hospital on a project would change the tone of the project for the better. If there was collaboration on both sides at the level of project creation and then its implementation, I think it would be a more enriching experience for all. I think doing so would enable passion for the project to develop on both sides and encourage a more driven, teamwork oriented atmosphere. Furthermore I would encourage Global Health Scholars to become more familiar with the basic greetings and common phrases in Twi before going to Ghana. There is a great free, "Learn Twi" app on Android phones that I think would be very beneficial to look at before the trip. I would also tell the scholars not be overly concerned about safety or lodging because everywhere we went I felt very safe and the accommodations were adequate. I would encourage each scholar to bring a lot of snacks and meal replacement powder if they know they are a picky eater or have an easily upset stomach. I think 600 USD is plenty to bring to cover food, souvenirs and living expenses for the month in the Eastern Region of Ghana.

Above all else I would encourage future global health scholars to take an active role in their project. I think it is necessary to be fully engaged both prior to traveling and while in country to make the most of the experience. I would recommend that scholars expect changes and setbacks, however I do think that a more active role in planning would prevent them from making a lot of the assumptions I made about this project. I also would just caution future scholars that this is not currently designed to be an incredibly culturally immersive trip. We only met a few people our own age and did not get any opportunities to really talk with people about their lives or what they did for fun. There is a huge wealth disparity in Ghana and I would say for a majority of our trip (besides surveying) we only were able to converse with the wealthier partners of Penn State who do not necessarily live as most Ghanaians do.

In conclusion I am very pleased with my trip to the Eastern Region of Ghana and am thankful for this incredible opportunity. I am excited to continue the evaluation of our research. It is my hope that through our survey data we will be able to identify specific and realistic entry points into the communities in which we worked, to address and further research micronutrient deficiencies. Ultimately, providing ideas for intervention to help alleviate the burden of micronutrient deficiencies in the rural village of Nkurakan and the city of Koforidua.



Spirit of Life Award Recipient Lynnette Lacek (3rd from left) with other first year Global Health Scholar sin Ghana

Learning Achievements

- A. On this trip I learned more about how the Ghanaian health care system works. I also learned all of the necessary components that need to be addressed before public health research can be completed in this setting. I did not before realize that it was necessary to obtain

permission from chiefs to work in their communities. I also did not realize the value that is placed on connectivity in Ghana. It was stressed to us, that all people involved in the Eastern Region and in a position that is concerned with nutrition should know about and have approved our project. I think we did a pretty good job of realizing and fulfilling this, but in the future, their collaboration before the survey is “set in stone” could be helpful.

- B. I learned more about the socioeconomic factors that can affect a person’s health. In the United States we always look at these factors as they relate to affording medications, tests and healthcare visits. However, in Ghana I realized that a person’s socioeconomic status really influences their health on a day to day basis. From our research we know that the foods that people choose to buy are often chosen because of affordability not because of nutrition. In addition, we noticed that people of lesser socioeconomic status are exposed to many environmental health hazards that they wealthier people were not. For example, people living in the rural areas cooking over open fires in closed in buildings where they were inhaling smoke. Some of their homes were bordering a fields where plastic baggies were being burned releasing chemicals into the air. Overall, I am now more aware of all of the different components that can make up a person’s health.



Household survey in rural Ghana

1. Program Strengths:

This experience was very valuable and had numerous strengths – it is hard to define them in words and record them here. However, going through the entire process of initiating a public health research project was a great personal learning experience. I learned a lot about how to structure surveys. It was especially valuable to learn about the importance of having in-country partners who

are as dedicated to the project as you are. In addition to learning the logistics of research it was incredibly valuable to me, and hopefully to future global health scholars and the people of Nkurakan and Koforidua, to learn of the micronutrient deficiencies that persist in their population and what are the factors that lead to them. It is my hope that through this work potential entry points for intervention can be identified and many of these deficiencies can be lessened.

2. Program Weaknesses:

I think the biggest weakness of this project was the lack of communication between the global health scholars and the in-country partners. Each institution that we collaborated with seemed to have a different idea of the ideal project would be for us. Furthermore, each of their ideals was slightly different from our previously established objective. However, I think the project we did complete will provide the ground work necessary to research the topics that each partner institution valued.

3. Impact

- a. I have always wanted to be an approachable physician and I think this quality and its importance was highlighted during this trip. Because of the lack of health care professionals in Koforidua I think that people do whatever a doctor says, without asking any questions, because they know their time is valuable. It seemed to me that patients have very little understanding about their specific diseases or treatments. This made me uncomfortable and reinforced to me that it is important to take the time to talk to patients, explain to them the nature of their illness, listen to their concerns, and respect their autonomy. I feel that many patients would lead healthier lives if they better understood their medical conditions. In Ghana we came across a patient suffering the consequences of uncontrolled diabetes. After speaking with her and the present medical students we realized that she had no idea of what diabetes really was. She did not understand that her diet could potentially have a large impact on her condition. It was strange to me that no one had yet explained this to her. I will carry this experience with me as I progress through my medical career and try to ensure that each of my patient's understands their illnesses or medical conditions and why the treatment that is being suggested is potentially helpful.
- b. I think that this trip has encouraged me to think critically about doing global health work in the future. I have always wanted to, but each of my previous experiences did not have so many logistical issues, nor were my communication skills so poor. Previously, I have traveled to Spanish speaking areas where I am able to hold light conversation with most people. I think that the inability for me to communicate with most of the survey participants showed me the value of communication. I now know that if I am going to do global health work in the future, I would like to pick one place and spend a significant amount of time learning the language. In addition to the language, I am now aware of the importance of understanding the cultural norms, taboos, and beliefs of the region in which I am working. In the Eastern Region these factors had a huge impact on how the local people lived their lives. I was surprised to find that spiritual beliefs even affected what foods they choose to consume!
- c. In addition, learning about how the Ghana health care system is supposed to work and then seeing the stark difference of how it plays out in practice was a valuable educational experience. Before this trip I was very pro-universal health care coverage. However, I have

seen how, in the Eastern Region of Ghana, it is not working very well. I still do believe that everyone should have access to affordable health care insurance but I no longer believe that the government providing it, is a simple fix. Many Ghanaians do not pay into the system and therefore are not covered. This leaves many without the ability to afford basic medical services that they need. A reason for this might be lack of education about insurance in the general public. Moving forward I intend to better educate myself on health insurance options here in the United States. This will enable to better educate my parents, family and friends and future patients about an issue that confuses many.

Trip Journal Entry:

It is 7am and Tara's (my roommate), alarm clock begins to ring. A few seconds later mine joins in, loud and screeching, the room is momentarily filled with noise that does not fit together well. We roll sleepy out of bed and quickly get dressed. We knew breakfast was supposed to be here at 7am but on Ghanaian time that means we will eat around 7:45am (more sleep for us!). We gather all of the supplies that are necessary for a day out in the field completing surveys. We make sure we have the survey tool, a clipboard, pens, iodine testing kits and extra paper. We hastily count the incentives to make sure we will have enough Ghana cedis to incentivize the surveys that we aim to complete today. Someone else in the hostel yells out, "Food is here!" and we rush downstairs. We enjoy a simple breakfast of eggs and fruit and wait for the bus to the Eastern Regional Hospital.

Today we will be completing surveys, concerning micronutrient deficiencies, in Nkurakan, a rural village about 10 minutes away from our hostel. After an hour of waiting for all the right people to be in the right spot at the same time (a common problem here in Ghana) we are off to Nkurakan. The bus driver is excited about our project, he delivers us to the small village despite the bumpy road and pungent odors of burning garbage that we pass along our way. A group of three goes off with a translator to begin asking for participants. The group I am in enters a compound, consisting of four concrete structures a middle common area and two wooden huts off to the side. As the translator converses with the prospective participant I stand back and observe, awaiting an invitation to move closer and take a seat. Goats, chickens, dogs, cats, and children run around. Some of the children point, some move closer and yell, "Obrony!", and others cling to the back of their mom's leg, scared of the foreigners who just entered their territory (Obrony means "white person, or foreigner"). The living conditions are sparse. There appears to be a lot more people gathered in this space than I would guess to be living inside these buildings. Some people sweep porches with homemade brooms and take no notice to us. There is a strong smell of smoke erupting from one of the wooden structures, my guess is that is the kitchen and someone is in there cooking. I think of how awful it must be to be next to a fire in this heat. We are invited to complete the survey and sit down on plastic lawn chairs in the center of the commotion. The knowledge of a 10 cedi incentive grabs the participant's attention. It takes us about 20 minutes to work through the questions, speaking only through the translator and never to the participants directly. I am bothered by this, I want to learn from them. However I am limited by my inability to speak the language. During the survey a chicken comes close to pecking my partner's foot, one of the kids is touching my hair, and another is relieving them self on the concrete. Their stream of urine is approaching my foot and I scooch out of the way. The entire time trying to be attentive to the survey. Amidst all of the chaos, I enjoy being part of the survey. I am able to learn so much about the family's nutrition and their everyday life from our 15-minute conversation.



I notice that despite the poverty everyone is smiling. The children from the different families chase each other around. The mother's seem not to be concerned and are busy completing household chores or preparing food. I am admire their sense of community and their happiness despite their obvious lack of resources and material things. The area is chaotic and loud, people are smiling and laughing and I am reminded of my home where I grew up with my 5 siblings. I realize how different the day to day life is here, compared to my more solitary, quiet, and focused lifestyle at medical school. At the conclusion of the survey we nod and thank the families for their time and participation. We stand and leave. Although sweating and fatigued, we smile and wave goodbye to the children. We hope to complete between 8 and 12 surveys today so we hastily make our way to the next area.