

# Brookline-Quezalguaque Sister City Project

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## Acknowledgments

Brookline-Quezalguaque Sister City Project  
The mayor and town of Quezalguaque  
Dr. Aurora Aragón from UNAN-León

## I. Executive Summary

Beginning in January of 2014, 5 Boston University School of Public Health students and 1 Yale University School of Public Health student worked together to create their public health practicum through the Brookline Sister City Project in Quezalguaque, Nicaragua. They met weekly with members of the organization to discuss and form the projects that they planned on implementing during the summer of 2014.

This trip report will outline this eight-month process in its entirety, beginning with an introduction of how we became involved in this project and ending with a description of the activities that we finally settled upon completing, and the preliminary results we have discovered. Furthermore, I will discuss how these projects lend to our recommendations for future projects within the town and what next steps should be taken.

## II. Introduction

Here, I will provide some background information on the Brookline Sister City Project as an organization, and how I became involved with this practicum.

### A. Description of the Brookline-Quezalguaque Sister City Project

The relationship between Brookline, Massachusetts and Quezalguaque, Nicaragua first began in 1985, when a Brookline resident named Maxine Shaw was teaching in a schoolhouse in Nicaragua. When friends visited her, they immediately recognized the need for simple objects like school supplies and began to send these items to her. Two years later, the official Brookline Sister City relationship was created, and the town of Brookline has continued to support Quezalguaque financially in various projects throughout the years. Their main projects typically revolve around access to education, better housing, and public health.

### B. How I found this opportunity

I found this opportunity through the Global Health Department's email blasts. I knew that I wanted to complete my practicum this past summer, and that I wanted to work in a Latin American country if I decided to pursue an international practicum. My emphasis area within my Global Health concentration is sex, sexuality, gender, and health, so I also wanted to find a practicum that was relevant to these topics. I began to monitor these emails for practicum opportunities that sounded appropriate. When I heard about the information session that was being held by the Brookline-Quezalguaque Sister City Project, I decided to go and learn more about the organization since sexual health was mentioned in the posting. Following this meeting, I

contacted Peter Stringham—a member of the board who was present at the information session—to submit my resume and schedule an interview. Within two weeks, I was offered the internship and gladly accepted. All of this occurred within the month of January 2014.

#### C. Relevant public health issues

During our weekly meetings, our advisors informed us that some of the main public health issues in Quezalguaque were Chronic Kidney Disease of unknown origin (CKDu), dehydration and inadequate hydration methods, and teenage pregnancy.

Last year's student group completed a hydration survey, and found that many people in Quezalguaque were dehydrated, and that they were only drinking fluids once they had realized that they were dehydrated. The survey also pointed out that people were rehydrating with frescos, sodas, and juices—not water. Because of these discoveries, our advisors suggested that we perform a hydration campaign to increase fluid intake among the people of Quezalguaque with a specific focus on increased hydration with water.

They also discussed the presence of CKDu in Latin America. In Latin America (Nicaragua included) there is a high prevalence of chronic kidney disease, but its origins are unknown. There are currently many ongoing studies to figure this out, and there are also many theories among Nicaraguans. Some of these theories include dehydration, poor nutrition, frequent urinary tract infections, alcoholism, and poor working conditions since many of those who test positive for CKD are men who work in the sugar cane fields or farms. We wanted to learn more about perceptions of CKDu among the people of Quezalguaque, so we decided to create a project about this chronic disease, too.

Another relevant public health issue we discussed in our preliminary meetings was teen pregnancy. In Nicaragua, the teen pregnancy rate is elevated. Because of young pregnancy, many female students do not have the opportunity to complete secondary school and move forward with their education. This then perpetuates the poverty cycle, and makes life more difficult for these young parents. Many health officials in both Quezalguaque and Brookline have expressed concern over the increasing number of teen pregnancies, and encouraged us to focus on this within our projects as well.

#### D. Final scope of work

Keeping these relevant public health issues in mind, we finally came up with our scope of work for our practicum. These projects continued to change up until our third week in Nicaragua. We completed the following 5 projects:

1. CKDu and peritoneal dialysis surveys among “cases” (households with a family member in the house with the disease) and “controls” (households in which a family member in the house did not have the disease)
2. A pharmaceutical study on nephrotoxic and medicinal drug use in the community
3. Water sampling tests from various sources throughout the town
4. Reproductive and sexual health education among primary and secondary school students
5. An oral health survey among primary and secondary school students

### III. Activities

In order to complete the CKDu and peritoneal dialysis surveys, we realized that we needed a total of at least 250 surveys from the various comarcas, or neighborhoods, to have a representative sample. Half of these surveys contain data from households in which a family member has the disease, and half contain data from households in which a family member does not have the disease. In this survey, we asked about thoughts on the origin(s) of CKDu, what they believe the symptoms are, and the impact the disease has on the family. We also asked about treatment options. For those who were interviewed as “cases,” we asked additional questions about peritoneal dialysis as a treatment, including whether or not they were aware of it and if it would be a viable option in the community.

The pharmaceutical study was done in conjunction with the CKDu study. With each CKDu survey that we completed, we also asked the interviewee about their pharmaceutical and herbal drug use. We were curious about the town’s nephrotoxic drug use, and if this could be exacerbating the CKDu problem. To gather this data, we created a list of some commonly used drugs that could be nephrotoxic, and asked participants about their use. This included how many days in a month they took the drug, how many times a day, for what reasons, etc. We also asked each person whether or not he or she used herbal medicines, and how frequently.

The water sampling tests were a project that we tacked on toward the end of our practicum. Initially, we had wanted to map the CKDu cases and overlay them with a map of water sources to see if there is indeed any connection between water quality and the presence of chronic kidney disease. However, we soon found out that the municipality did not have a map of all water sources in Quezalguaque. Regardless, we decided to test various water sources since they had not been tested for many years.

To complete our project on reproductive and sexual health education among primary and secondary school students, we edited a Spanish sexual health curriculum to make it more appropriate for the town. We taught this curriculum in a series of 3-week “charlas,” or chats, in 3 different schools. Furthermore, we implemented a

baseline and post-charlas true/false quiz to assess whether or not the students improved their sexual health knowledge after participating in the classes.

For the oral health survey, we questioned students about their current oral health habits. We asked about how frequently they brushed their teeth, if they used floss, how frequently they visited the dentist, what kind of dental work they've had done, etc. We included this survey at the end of our sexual health classes to complete the two projects simultaneously.

#### IV. Observations/Recommendations

While we are still analyzing the results from the CKDu and peritoneal dialysis surveys, and finalizing results from the pharmaceutical surveys, we have made a few discoveries within our various projects. Regarding herbal medicine use, we found that the use of sarsaparilla, a nephrotoxic root used in teas, is almost three times higher among those who had chronic kidney disease compared to those who did not. We are still finalizing the rest of the herbal drug use data, but focused on analyzing the use of this root first since we heard it mentioned multiple times.

Additionally, we found that the post-charlas quiz scores from the two secondary schools in which we adequately gathered data had improved significantly from the baseline quiz scores. Interestingly enough, the students from each school improved on the same exact questions, suggesting the areas in which our sexual health curriculum was strongest, and where it could use some more work and emphasis. The questions with an improved score had to do with the mechanisms of STI transmission and symptoms, various types of romantic abuse, and abstinence. Students did not score higher on the questions asking if vaginal sex between a man and the woman is the only type of sexual activity that can result in pregnancy, and if using condoms has a negative consequence in a romantic relationship. Based on these results, the charlas did seem to help students learn more about STI transmission, STI symptoms, healthy/abusive relationships, and the meaning of abstinence, but it appears that they were ineffective in explaining that vaginal sex is the only type of sexual activity that can result in pregnancy and that using condoms does not usually have a negative effect in a romantic relationship.

Unfortunately, we were unable to gather the adequate data to come to these conclusions in the third secondary school due to scheduling conflicts, and an inability to take the same group of students through the entire 3-week curriculum. Because of this, different groups of students participated in different charlas within this school. We were also unable to access primary school students on a frequent basis, so their data is incomplete.

Overall, I would highly recommend this practicum to other students, and also encourage a continuation of these projects if possible.

## V. Next Steps

It would be best to continue studying CKDu within Quezalguaque since so much about the disease is still unknown. At this point in time, all information—both quantitative and qualitative—is useful to both the Brookline-Sister City Project and the researchers in León with whom we were working.

It would also be a good idea to follow up on the water testing, and retest even more water sources in the town. Many people think that the water is unsafe to drink, and knowing this for sure could help a future hydration campaign. At this point in time, however, we felt uncomfortable in moving forward with this project since there is a stigma against drinking the water and because we did not know if it was truly safe to drink.

Finally, it would be best to continue the sexual health education program since there is indeed a need for this. Based on the baseline and post-charlas data from this year, it would also be a good idea to place more emphasis on what sexual acts result in pregnancy as well as the destigmatization of condom use in a romantic relationship--these are the questions in which students did not improve their scores.

We would also recommend starting the charlas with the primary school students at these schools, if possible. We had the intention to when we started the project this summer, but the plans to move forward never panned out. The teachers at each school also wanted us to work with primary school students, which confirms that there is a need for sexual health education among students of this age group.

In the future, it would also be a great idea to host informal charlas in the more rural comarcas that do not have primary or secondary schools. We also wanted to reach these children and teenagers, but simply did not have the bandwidth to do so.

## VI. Annexes

Here, I will provide other information about this practicum that could be helpful.

### A. Contacts in Boston involved in this project

Peter Moyer: petermoyer@comcast.net  
Peter Stringham: peter.stringham@gmail.com  
Kea van der Ziel: vanderziel@earthlink.net  
Sarah Johnson: sjohnson@msh.org

### B. Contacts in Quezalguaque

Aurora Aragón, CKD specialist in León: aurora\_aragon@yahoo.com;  
aragon@unanleon.edu.ni; 2311-6690

Dr. Luis Blanco, Director of the Health Center in Quezalguaque:  
luiseblanco@yahoo.com

Rolando Osejo Munguia, Head of the Mancomunidad in Quezalguaque:  
rosejo8@hotmail.com; 83509965 (Claro number); 82506098 (Movistar  
number)

Dr. Escoto, Primary doctor at the Health Center in Quezalguaque:  
escotoivan12@yahoo.com

#### C. Key documents used

For the sexual health education project, we edited a 2012 Spanish curriculum created by Yale University School of Public Health students for urban Spanish-speaking students in Connecticut. The Yale student on this trip gained permission to use it from the community health educators who run a sexual education program in New Haven. We then reformatted and edited it so that it would be more appropriate for students in Quezalguaque.

#### D. Budget/Expenses

The personal costs of this practicum were around \$2,000. I received \$1,000 from the Santander Universities scholarship, \$500 from BUSPH, and another \$500 from the Brookline-Sister City Project. I purchased my plane tickets about 2 months before the trip, and this cost about \$600. Room and board with my host family was \$65 a week. The remainder of this amount was spent on miscellaneous items—such as gifts for the family for our arrival, food purchases while in the field, etc.

The Brookline-Sister City Project also provided us with a group fund that paid for any project expenses like photocopies, wages for our local guides, etc.