

**Honduras Trip Report – May 2011**  
 Department of Family Medicine, University of Rochester

<b>Participants</b>	
<u>Faculty</u> Lorie Carpenter, FNP Douglas Stockman  <u>Residents</u> Sergio Alvarado (R2 from Texas) Zach Borus Megan Locher Liz Terragnoli Robbyn Upham	<u>Dentist</u> Lina Vega (UR faculty) Catalina Morales (UR dental resident)  <u>Medical Student</u> Brendan O'Connor  <u>Interpreters</u> Alex, Alex, Daniel and Joshua  <u>Shoulder to Shoulder Representatives</u> Marvin Cacho

**Introduction**

The Department of Family Medicine at the University of Rochester operates a Global Health Program. This year-round program offers didactic training throughout the year and travels twice a year for two weeks at a time to rural Honduras. The Department has partnered with an NGO called Shoulder to Shoulder and a rural community called San Jose San Marcos de la Sierra in the Southwestern state of Intibuca, Honduras. The needs of the target community are great and go beyond curative medicine. By listening to the concerns of the local community members and performing qualitative community assessment, we are creating interventions designed to address the common problems. Below is a report from our May 2011 trip.

**Travel and General Comments**

There were no problems with travel. The majority of the group remained healthy throughout the trip. Insects did cause some problems for the group. One in particular caused a skin rash that was similar to a burn. One member developed a leg infection following an insect bite. Both problems were successfully treated. We enjoyed the good food of a new cook, Carolina from another Shoulder to Shoulder site. When we arrived in San Jose, there had been no rain for six months and water was not available. We had to purchase and truck in water from another area so that we could bathe. It did start to rain 2-3 days after we arrived so water was less of a problem and personal hygiene resumed at a normal level.

**Meetings**

Much of our time in San Jose is spent in meetings. We work very hard to ensure excellent communication with San Jose residents. We want to understand the important issues for the San Jose people and work closely with them. The Sunday on which we arrived in San Jose was spent meeting with representative from the villages. This three hour meeting helps define what projects will be pursued during our two weeks in Honduras. Then throughout the two weeks other meetings that address specific projects occur. It is not uncommon to have 2-3 meetings a day on various topics.

## Water Projects

### *Piped water projects*

Our fourth piped water project is nearing completion. The Guanacaste people have dug over 5 km of trench to lay the pipe. The 4,500 gallon water tank is complete. The only thing remaining to do is build and install pressure relief valves and associated micro-tanks. Given the mountainous area, changes in elevation are so great that pipes burst due to high water pressure. Special equipment is needed to address the high pressures. We anticipate Guanacaste will have a functioning water system within 3 months.



*Guanacaste water tank wrapped in plastic to cure*

The government-sponsored water project that will bring water to many villages in the region continues to have problems with broken pipes. Guanacaste will get its water from this project. Our part in the Guanacaste project is to build the distribution tank near the main road and then create a network of pipes to deliver water to each home in Guanacaste. The government gets the water to the main road only. Three other communities in our project area, San Jose Centro, parts of el Horno, and Mangal will get their water from the government project.

We met with members from the distant community of Las Delicias about a new piped water project for their community. Although highly motivated, much work needs to be done by the villagers before we can even know if the project is feasible. Much of our meeting times were spent educating the Las Delicias people about what information is needed to design the water system.

### *Water Filters*

The ceramic Potters for Peace water filters remain in high demand and we continue to sell heavily subsidized filters to interested people. Elia, one of our community health workers (CHW), is in charge of education and distribution of water filters. She sold out of the filters we purchased last October and feels the demand remains very high. We purchased 75 more filters to be distributed over the next six months. Elia feels that diarrheal rates in children are much lower than the pre-filter and piped water baseline.

### *Latrines*

Elia also oversees latrine construction. 21 latrines have been completed since we were last there six months ago. We bought enough materials this trip to build another 25 latrines. We taught local skilled people how to build a Ventilated Improved Pit (VIP) latrine. The skilled workers and Elia then hold classes where people interested in getting a latrine build a latrine at one community member's house. We do not charge money for latrines at this point, but require sweat equity. The latrine recipient must dig the latrine hole which is about 2.5 feet by 4.5 feet by 10 feet deep. Then they must provide the unskilled labor



*Las Delicias latrine nearing completion*

during construction. Latrine recipients must also complete two days of communal labor. The communal labor is usually bigger projects that benefit the community such as working on a water tank for the school and leveling land for the clinic.

## **Education & Schools**

### *First Unitarian Church Middle School Scholarships*

The Scholarship meeting was attended by all 24 scholarship recipients. Not all parents were able to attend, but did follow up with the brigade later during the brigade. Erin, Brendan, Lorie and Alex collected all paper work required for the scholarships, except the report cards. Unfortunately, the teachers had been on strike for approximately 60 days. Grades were not available from the school, but attendance records showed all students did attend classes when school was in session. Grades are to be emailed to Barbara Gawinski next month. 8 of the 24 students/parents had not completed the volunteer hours of community service required to receive their scholarships. The parents/community together had decided to increase the volunteer hours from 10 hours for the children to an additional 3 days' work by the parents. Elia, our community health worker, had kept careful documentation of these hours. Marvin, the Honduran Shoulder to Shoulder representative, gave a long presentation to the families on the importance of everyone working together and completing volunteer hours for the improvement of their community. Several parents expressed their agreement with Marvin that working together in volunteer hours and their children's education was important for the future of their community in San Jose. The parents and children lacking volunteer hours came later during the brigade and were able to complete the hours needed. All scholarships students received their second installment of money for the rest of this academic year. All students plan to continue with their education. One parent expressed great pride that his daughter was to be one of the first "professionals" in the community with an education and was very grateful to the brigade for this opportunity.

Many of the students graduating from the San Jose elementary schools are ill prepared for middle school. We have implemented a tutor program to help the scholars succeed. Two tutors have recently been hired and begun meeting with the students to help them better understand the materials and complete homework. A parent committee will monitor student and teacher attendance sheets for these sessions and report back to the brigade in October 2011.

### *First Aid Kits for Schools*

More than one year ago we put together First Aid kits for the schools in our area. These kits allow teachers to treat minor conditions such as small cuts and fevers. The kits have been well received by the teachers and they have asked for education on common conditions they see in the school. This trip we restocked the first aid kits with supplies and gave handouts in Spanish about puberty and menstruation: information that had been requested by the teachers. They were very grateful for the new supplies and teaching topics.

### *Teacher Education*

12 teachers from 4 of the 5 area schools attended a "teach the teachers" session with Brendan, Liz, Sergio, Lorie, and Josh. A sock puppet curriculum from the Unitarian Church was reviewed and demonstrated with the teachers. The teachers enjoyed the creative process of making their own puppets using socks, yarn, buttons, felt and other



*Liz works with the teachers on making sock puppets*

accessories provided by the curriculum committee. Much laughter and fun was observed as teachers and brigade members demonstrated puppet use to enhance creative learning in the classroom. Review of English was also done at this time as the teachers are required to teach their students English, but do not speak English themselves.

The teachers expressed their gratitude to the brigade for the curriculum and education sessions. They enjoy these sessions, learn a great deal and would like them to continue. Near the end of the brigade, the teachers held a ceremony to formally thank the brigade and presented the group with a wall plaque which will be placed in the Honduras room at the Highland Family Medicine Center in Rochester.

The teachers, as a group expressed their concerns that the El Horno teachers have not participated in brigade's scholarship meetings or teacher education sessions for the past 2 brigades. They do not feel this is fair and would like this addressed. They stated the El Horno community will not allow the teachers the time to attend the meetings. The teachers stated that the El Horno community remains more isolated and does not participate in the larger San Jose community activities. They recommend the kindergarten in El Rancho receive the benefits of curriculum, school supplies and scholarships instead of El Horno as these teachers routinely attend the teacher's meetings. On the next brigade, we will meet with representatives from el Horno to discuss the situation and make a determination.

#### *Laptop for San Jose Centro school*

The Avon Rotary Club was kind enough to donate a refurbished laptop which was given to the San Jose Centro elementary school. They had requested two computers one year ago. Time was spent educating the teachers on basic computer skills. As the teachers become more proficient with computers, the goal is to help teach the children these same skills.

#### **Microfinance**

With the financial support of individual donors and the First Unitarian Church, the Microfinance group gives very small, low-interest loans to start and expand business ventures in the San Jose community. This year, local entrepreneurs showed a lot of interest (excuse the pun) in the project. During our May brigade, two meetings were held with more than fifteen people in attendance at each. There were four outstanding loans, two of which were paid in full, one partially re-paid, and one unfortunately in default. At the meetings we presented short teaching topics, such as: "What is a profit?", "How do I calculate a profit?", and "Keeping personal money and business money separate.". After the interactive teaching time, we heard individual proposals for business loans, assessing them for their likelihood of success and helping develop the plans. We heard many excellent proposals this year, and funded six new loans totaling over \$560 for projects including bread baking, fruit and vegetable distribution, and tamale making! It will be exciting to see how these six individuals are doing when we return in six months.



*Microfinance meeting*

### **Medical care**

The medical clinic was a bit busier this trip than last. Fortunately, there seemed to be less serious illness. Cases of diarrhea (8) and scabies (2) were way down. Although we cannot prove it, we like to think our interventions that have improved water availability and quality have reduced these two water-related diseases. Upper respiratory infections, epigastric abdominal pain, intestinal worms, pneumonia and musculoskeletal pains remain the most common diagnoses. There have been a number of tuberculosis cases and even deaths in the community. Not surprisingly, we saw a number of patients who we referred for TB testing because of concerning symptoms. The mayor of our region allowed us to use the newly built government clinic for our two week brigade. This was much nicer than the dark adobe community building we normally use.



*Liz and Alex seeing a patient*

### **Community Health Workers**

We now have two Community Health Workers overseeing both medical care and rural development in the San Jose area. Elia has been working in San Jose for almost three years while Carolina just started in April. We helped pay for the training of these two women, so they need to work at a reduced salary for two years as payback. Elia has decided to stay on in San Jose. In addition to seeing patients, she is responsible for the school-based fluoride program, folic acid distribution, and organizes latrine construction, cookstove building, education and distribution of water filters and baby weighing in San Jose Centro. Carolina was just placed in charge of the microfinance program, fish farms and agricultural projects, in addition to her patient care responsibilities.

### **Building**

The volunteer house is nearing completion. We find that having a highly capable individual can really accelerate development in the San Jose area. Having a place where a volunteer can live in safety makes it more likely to attract high quality candidates. The small house also has a number of added benefits. Half of our group was able to occupy the house this Brigade, which means we only needed to take over one school building (instead of the usual two), thereby making it easier for the San Jose teachers to teach their students. The building also makes it easier for short visits outside of brigade times. The entire building was funded by a private donor and by the Unitarian Church.

### **Patient/Community Education**

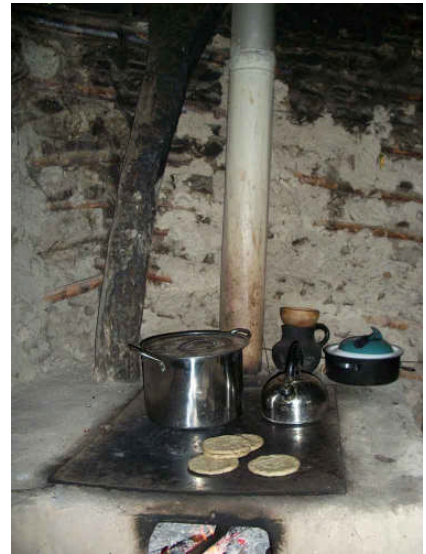
Brendan led the patient education skits with the help of Sergio, Zach, Robbyn and Erin. Hand hygiene and cover your cough was performed several times as community members waited to be seen at the medical and dental clinics as well as in the classroom for the students and teachers. The community members enjoyed the educational entertainment. Brendan really loves acting so it was great watching him embrace the project.



*Volunteer house nearing completion*

## Cookstoves

The improved cookstoves we designed remain a very desirable “appliance”. 17 stoves have been built since our October trip and all the materials we left at that time have been used. This trip, we started experimenting with different flat metal plates that comprise the cooking surface, or “plancha”. One small change involves welding reinforcing bars to the bottom of the plancha. We found a welder 1.5 hours drive away who can provide the welded planchas for less than we have been paying for un-improved planchas at a store. Another plancha design will have removable inserts to allow the use of a large round-bottomed pot or the ability to bring the contents of small pots to boiling faster. We hope to have two test homes try the new plancha over the next six months. If the improved plancha works well, it will be an option for all future stoves. We presently require that interested villagers pay about \$6 for the stove that costs about \$45 to build, along with attending classes and providing all locally required materials. The advanced plancha will increase this cost slightly.



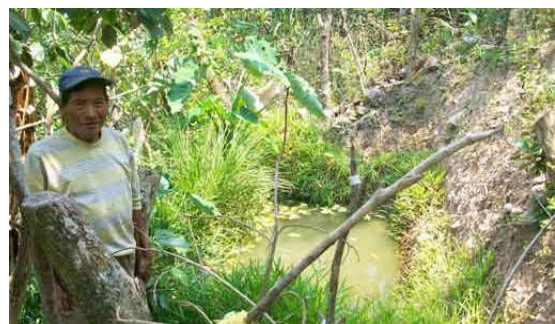
*Improved cookstove. Note the blackened walls caused by the smoke from the prior traditional cookstove*

## Agriculture

We started supporting the creation of small tilapia fish farms more than 18 months ago. The concept is really starting to take off. We have helped build four fish farms and all four are producing enough fish for home use. 2-3 of the farms make enough to sell small amounts of extra fish. The largest fish farm has decided to build another fish farm to expand production. This trip three more families came for a meeting to learn about growing tilapia and hope to start fish farming soon. One of the hardest concepts for the villagers to accept is the need to limit the number of fish fry. When a fish pond becomes overcrowded, the fish never get very big. Given the people eat the entire fish, they seem to be content having 400 fish that never get more than about 4-5 inches long. In addition to knowledge, we provided the pipe and connectors to bring water to the fish ponds, and barb wire and chicken wire for farms that have animals nearby that may disturb the fish farm. The owners have to dig the pond by hand. This can take many weeks of work with a pick ax and shovel. The main limiting factor to universal expansion of fish farming is the need for a year-round water source.



*Fish farm meeting with prospective new fish farmers*



*Established small tilapia fish farm*

Given the constant supply of water that the fish farmer's enjoy, we also distributed vegetable seeds to be planted downhill from the fish ponds. The overflow water coming out of the fish ponds has many

nutrients (fish excrement) that can help fertilize the vegetable plants. The main barriers to growing vegetables in San Jose are limited water, poor soil and insects. Fish farmers can already address the first two barriers of water and fertilizer. We helped educate the farmers about judicious use of insecticides with specific examples. We also suggested they try growing vegetables both in the rainy and dry seasons. During the dry season, there are less insects and produce sells at a much higher price in the markets. One of the biggest challenges for agricultural interventions is the time necessary for experimentation and the fact we are not always there to see the results.

### **Dental Program**

For the 2011 trip we had a dental team of one dental resident and one dental faculty from the Department of Dentistry at the U of R. Although the need for curative dentistry is great (extracting teeth and draining abscesses), we made time to perform dental surveys of school children and educate on oral hygiene. School children in three different communities, San Jose Centro, Guanacaste, and Delicias were surveyed using a WHO scoring tool. Since introducing the fluoride rinse in San Jose Centro, the rate of children with no dental disease has risen from 17% to 89%. We consider this a great success. We had briefly introduced the fluoride rinse program to the teachers of Las Delicias 6 months ago so were excited to see how things were going. Based on 212 exams, the percent of children with a disease free mouth rose 8%. Through better engagement of teachers and CHWs, we hope to make further improvements in dental health.



*"Modern" San Jose dental clinic with Catalina, Erin and Lina cleaning instruments after a busy day*

The temporary dental clinic in San Jose Centro was very busy. We completed 179 dental emergency visits; we performed 246 Extractions, 25 ATR using Glass Ionomer Fuji (fillings) and 58 Fluoride Varnish applications. Given that we presently perform all these dental procedures using a plastic lawn chair and sunlight for illumination, we hope to one day get a portable dental chair and associated power drill and water to expand the services we offer.

### **Madreguias**

The May 2011 Meeting with the Madreguias and Parteras centered on two main themes: 1) a discussion of how we have been helping and how we can continue to support the services they are providing to their communities, and 2) lots of discussion and sharing of ideas about prenatal care sparked by a generous donation from the Monroe Plan (insurance company helping the under-served of Rochester) of eight copies of their Baby Basics book in Spanish, one for each of the Madreguias and Parteras.

We distributed tape measures to measure fundal heights and restocked their supply of folic acid which is distributed to all women of reproductive age to reduce the risk of birth defects. Pregnant women receive prenatal vitamins from the government clinic, but the Parteras felt most pregnant women have anemia and that iron tablets would be helpful. On a previous brigade, we gave flashlights to help them find their way during night time deliveries/emergencies. The flashlights have been used so heavily they are hoping we can replace



*Zach working under Catalina, learning the basics of curative dental care*

them in the future. They prefer the wind-up flashlights that do not require replacement batteries.

The Baby Basic books were well received by the Madreguias and Parteras. We were thrilled to learn that the majority of the Madreguias and Parteras are literate. We began to read through the book together, which sparked all sorts of discussion about many topics regarding pregnancy – nausea, cravings, urinary symptoms, miscarriages, placenta previa, and premature rupture of membranes. It was interesting to share ideas about how we treat different problems in pregnancy – we learned as much from the Madreguias as they learned from us! We anticipate the Baby Basics books and the exchange of ideas we had will enable the Madreguias and Parteras to expand their care of pregnant women.

### **Domestic Violence**

Domestic violence remains a significant problem in rural Honduras and is closely tied in with alcohol abuse by men. It remains a very difficult problem to address and there is significant stigma even to talk about it let alone acknowledge a history of personal abuse. Six months ago, the villagers asked for a meeting with the police. A few people came for the meeting but the police did not make it. This time, the police came for the meeting but the villagers did not. However, we learned more about the legal rights available to an abused person and how the police can help. We will be using this newly acquired knowledge to better assist abused people in the future. We will continue to address this issue in an effort to reduce the significant personal and community level damage.

### **Las Delicias**

We are expanding our interventions to a remote community called Las Delicias. The township is composed of 7 villages and is a 3-5 hr mountainous walk from San Jose Centro. Six months ago we introduced a few of our interventions on a small scale to identify successes and areas for improvement. Over the past six months, 5 latrines and 13 cookstoves have been built and 3 water filters dispensed in the Las Delicias communities. As expected, there are a few minor issues that need to be addressed to achieve the best results possible. Below is an update.

A group of five people walked the five hour journey to Las Delicias Centro. The group included two family medicine residents, two dentists and a translator. The goals of the trip were to get an idea of how the current projects (latrines, cookstoves and water filters) were going in the community, discuss perceived needs in the community, talk about potential future projects and perform some dental surveys in the schools.

The trip started with two meetings in Delicias Centro. There were 22 people in attendance at the meetings, representing Coyolar, Mesitas, Almendro, Acehunas, and Delicias Centro. Overall the current cookstove and latrine projects were very well received. The people from Mesitas seemed especially interested in initiating projects in their town, but understand the challenges involved since their community is quite remote. The government has been working in the area and has built 24 latrines in Delicias Centro, but the people at the meetings felt that there was still a need for more latrines in the surrounding community.

Four home visits were completed in Centro, for a total of three cookstoves, one in-progress latrine and two filters. All were very happy with the projects and felt that they had enhanced their lives, but a couple of the cookstoves were not built to specifications. The process we created previously for educational meetings to learn how to build the latrines and stoves were not followed correctly so interventions were put into place to correct this issue.

In Coyolar, we visited three homes, two of which have a cookstove and a filter and one of which had a latrine. There was great interest and excitement there as well. Many more people want cookstoves, filters, and latrines, and they were all referred to Elia in San Jose. Elia is the main contact person for applications as she is the one who helps to set up the demonstrations, community service and supplies needed to build the latrines and cookstoves.

A dental survey was performed in Coyolar. The fluoride program is going very well, with the teachers doing a great job. The survey data suggests an 8% improvement in children with disease-free mouths.

Themes that came through were a great desire for access to scholarships and a microfinance loan program. The teachers at Coyolar school expressed interest in latrines (as they have government-provided flush toilets, but no water to operate the flush toilets). Once the cookstoves, latrines and water filter projects are going well, we hope to introduce scholarships and micro-loans. These two interventions are heavily dependent on donations.

### **Clothing for the children**

Most Rochester-area children have at least basic clothing to wear, and often request \$100+ sneakers and other less essential clothing. It may be hard for many Americans to realize that a large percentage of the world's inhabitants lack clothing adequate enough to cover the body. Many children in the San Jose area have only 2-4 sets of clothing and most of that clothing is thread bare and full of holes. A group of volunteers in the US called "Angels of Mercy - Dress a Girl Around the World" create dresses from pillow cases and donate them to young girls around the world who lack decent clothing. They were kind enough to donate dresses to the San Jose people. We brought 50 dresses this trip to gauge cultural acceptance. The young girls loved the dresses and the dolls that go in the front pocket of the dresses. Based on the positive response, we hope to bring more dresses next brigade.



*Girls from the San Jose Centro school with their new dresses*

### **Evening Educational Program**

Every evening, our entire group gets together to review the events of the day and then one member teaches the group about a pertinent topic. We have a nice mix of both medical and cultural talks. The topics this trip ranged from tuberculosis and malaria to Honduran religion and basic Spanish lessons. These evening meetings are probably most useful for team building. Everyone learns each member's strengths and personality traits to allow the group to function better as a team. The end result is a highly effective team that greatly improves day-to-day function.

### **Your Help is Needed**

We believe in low cost, simple technology solutions that the Hondurans can learn and maintain on their own. We are doing a great job in this respect. However, even simple interventions cost money. To continue the exceptional work we are doing in Honduras, we need more funds. If you have the financial ability and appreciate the great improvements our activities are bringing to rural Hondurans, please take a minute and donate to our project. Donations are tax deductible if you itemize your taxes. We are very

fortunate to have the assistance of the Department of Family Medicine and dedicated volunteers to almost eliminate overhead expenses. Therefore, your donation will reach the Hondurans and not be spent on less helpful expenses such as rent for a dedicated US office or US-based secretarial support. If you would like to donate to the San Jose project, please make a check payable to “ HH Foundation – GH Fund HFM”. Mail the check to “ Highland Family Medicine 777 Clinton Ave, South Rochester, NY 14620 Attn: Dr. Stockman”.

### Summary

The greater Rochester Family Medicine community has touched so many lives in Honduras and the Hondurans have enriched so many of our lives. This cross-cultural project is realizing huge benefits for everyone involved. Seeing the smiles and appreciation as people display their running water, new cookstove, or water filter is so rewarding. Through these very intimate person-to-person exchanges we maintain hope that a better world will become a reality one community at a time. Thanks to everyone for their continued support to make this project such a great success.

Douglas Stockman, MD  
Director, Global and Refugee Health

Barbara Gawinski, PhD  
Associate Director, Global and Refugee Health

Thanks to other trip members who wrote parts of this report.

