HAITI
HEALTH INITIATIVE
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HHI Medical Report
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Timo is a remote rural community in the mountains of Haiti, about 2 hours from Port au Prince. The villagers there have no immediate access to medical care. The nearest hospital is over an hour away and many don't have the means to travel or pay for medical services. Our hope in the medical clinic was to provide basic medical treatment biannually to this community. We tried not only to treat acute conditions, but to prevent disease through improved nutrition, better education, more access to clean water, and vitamin supplementation. We were engaged in research and treatment of two common chronic medical conditions in Haiti; anemia and hypertension as well as providing referrals, setting up home visits, and educating in prenatal care. We are studying how our interventions impact these conditions.

Activities in Haiti

While we were in Haiti, our activities consisted of clinic consultations, avoiding anemia, preventing hypertensions in adults, providing patients with referrals, teaching prenatal care, and developing home visits. In the clinic consultations, we see patients of all ages. Currently there is no cost to be seen. People come from the local community of Timo, but also from far away communities. Some travel for hours during the night to arrive when the clinic opens in the morning. Unless they are sick, all patients have to pass through the education tents first. While we were there, there were 6 education stations, taught mostly by Haitian community health workers. Topics covered were newborn care, breastfeeding, nutrition, anemia, dental health, sanitation, adult health, hypertension, and shoe education and distribution. Each patient was given a Patient Medical Record, onto which is recorded their personal information, vital signs, lab results, diagnosis, treatment, and medication given. These records were collected at the end of clinic and entered onto spreadsheets on laptops for data collection and research purposes. The diagnosis, treatment, and medication formulary has been standardized to prevent errors. The back side of the Patient Medical Record listed over 30 of the most common diagnosis along with the recommended drug treatments, with dosing for both adult and pediatrics. At each station of the clinic we had excellent Haitian Creole translators. The clinic flowed as follows:

Education
Registration
Triage (vitals and initial assessment)
Nursing station (Vitamin A and Albendazole)
Lab station (hemoglobin tests, urinalysis, blood sugar check, and pregnancy tests)
MD station (patients seen by one of 3 physicians)
Ophthalmology station (vision screening and consultation by 1 ophthalmologist)
Pharmacy (medications dispensed)
Data Entry (patient medical records collected and recorded onto laptop spreadsheets)

Anemia

Another activity we were involved with was avoiding anemia. Anemia is very common in Haiti, especially rural Haiti. We chose to focus on two of the many likely causes: nutritional deficiency and intestinal worms. We gave Vitamin A to all kids 6-59 months of age to reduce anemia, promote growth, improve vision, decrease mortality due to serious infections like malaria and measles, and decrease overall mortality. We received a generous grant from Vitamin Angels for the Vitamin A. We gave Albendazole, which can be given with Vitamin A to further prevent anemia by preventing intestinal blood loss from worms like hookworm, to all kids 12-59 months of age. HHI has done 5 trips now to Timo, and we collected data on whether or not our intervention leads to higher hemoglobin levels and thus less anemia. The hemoglobin is the measure for detecting anemia, and all kids 5 and under were tested. We received a generous grant for the hemoglobin machines from Hemocue.

Hypertension

While anemia is a major chronic medical problem among children in Haiti, hypertension is a major problem in the adult population. This was our 3rd trip for studying and treating hypertension. All adults over 40 had a blood pressure check. High blood pressure was defined as >140/90, on 2 separate readings, one in triage and one by the MD. Severe hypertension was defined as >160/100 on 2 separate readings. All those defined as having severe hypertension were given education by the physician about the significance of it, and how it is treated, both with lifestyle changes and medication. We chose to give Norvasc 10 mg once daily. This medicine was chosen due to its effectiveness in this population and relative safety and low cost. The patients got further education at the pharmacy where they were given a 6 month supply of the medicine with instructions to return in 6 months when the next clinic is held. HHI designated one local from Timo named Junior to check blood pressures on as many of these patients as possible. He was taught how to use the blood pressure machines and demonstrated competency and accuracy in his blood pressure checks.

Referrals

Another activity we were involved in was providing referrals for alternative care for patients whose needs would best be met elsewhere. Most of the patients we saw in clinic were well, since for many this is their only opportunity to be seen by medical professionals. However, a small percentage of those who came had either a serious acute or chronic condition. Many of these conditions we treated by providing wound care or antibiotics for infections. Some other conditions required a higher level of care that we were not able to provide in our mobile clinic. If there was an acute emergent condition, we transported those patients to the closest hospital in Leogane, the Ste. Croix Hospital, which has an ER, pediatric and adult wards, and some surgical services. There were other patients who have serious chronic conditions that are not immediately life threatening. We provided them with a letter stating who we were and what condition they had. We then gave them resources on where they may be seen for their condition.

Prenatal care

Prenatal care was another area we worked in. Most of those who live in rural Haiti deliver at home with a lay midwife. These midwives don't receive any formal training. Our goal was to train these midwives and give them basic tools to provide better care. HHI recruited labor and delivery nurses for doing special education classes for these midwives. The focus was on prenatal care, newborn resuscitation, breast feeding, basic vaginal deliveries, and how to deal with certain complications. Funds were raised to purchase a maternal pelvis manikin for the purpose of teaching the midwives some of these principles. A curriculum was developed for teaching. All the midwives were also given delivery kits to assist them and provide them with basic necessary equipment for deliveries. In the clinic there was a protocol for each pregnant woman seen. Each pregnant woman got a blood sugar check, a urinalysis, and a hemoglobin check. All were screened for pregnancy induced hypertension by getting a blood pressure check. Once at the MD station, their estimated date of delivery was determined based on their last menstrual period as well as fundal height measurements. Fetal heart tones were obtained using a hand held fetal Doppler. All pregnant women were given a 6 month supply of prenatal vitamins as well as a newborn kit. Lactating women were also given prenatal vitamins.

Home visits

We also created home visits in Timo. There are some in Timo who were unable to come to the clinic, especially the elderly and those with disabilities. One of the local FPF leaders of Timo put together a list of such patients. This list was divided among 3 small teams made up of a physician, another team member, a translator, and a guide. Each team visited these patients. These visits were typically a positive experience both for the patients who were visited and the

team members who went. There were not a lot of medical treatments during these visits, but there was a lot of goodwill, and the patients were very appreciative and touched by the visits.

Results

We were able to accomplish much and had many positive results from the trip to Haiti. In the clinic consultations, 1122 patients were seen in 7 days of clinic, 255 of which were kids under 6. The total number of prescriptions given was 1187, which includes the vitamins. The top 20 diagnoses were as follows: URI, headache, GERD, hypertension, back pain, anemia, tinea capitis, vaginitis, tinea corporis, arthritis, well, worms, eczema, gastritis, knee pain, otitis media, asthma, dizziness, allergies, and UTI. We saw many skin infections and treated them with antibiotics. The most common were impetigo and tinea capitis. We also saw several serious wounds which were treated and followed throughout the week. There were no needle sticks in clinic during the trip. Universal precautions are observed, however if there is a needle stick, HHI is prepared to deal with that. We have received a generous donation from Alere North American for rapid HIV kits. If there was a needle stick in clinic, the patient was tested for HIV. If that patient was positive, then they were referred to an HIV clinic in Port au Prince, and the team member was treated with a 2 drug regimen for HIV post exposure prophylaxis. Details from our eye care in clinic will be found in a separate Ophthalmology report. In short, patients had a vision screen, individual exams with a slit lamp, reading glasses were given, as well some prescriptions glasses. There were some patients treated with glaucoma drops, and others were found to have cataracts that need surgery.

In our efforts to avoid anemia, we tested a total of 454 patient hemoglobins. Of these, 216 were our target population of kids 5 and under. Of the 216 kids tested, 165 were found to be anemic, which is 76%. Anemia is defined as 2 standard deviations below the mean for age. The average hemoglobin in kids 5 and under was 10.2. We now have data from 5 trips, which are as follows:

March 2011 average hemoglobin: 9.7
October 2011 average hemoglobin: 9.66
March 2012 average hemoglobin: 10.0
October 2012 average hemoglobin: 9.5
March 2013 average hemoglobin: 10.2

There were a total of 179 doses of Vitamin A given to kids 6-59 months of age and 152 doses of Albendazole given to kids 12-59 months of age. There were also many children over 5 who received chewable multivitamins. Finally, kids were fitted for shoes in the education area, which may also help anemia, as hookworm may enter the body through the feet. Much of the population, especially kids, goes without shoes.

The hypertension activities resulted in a total of 377 adults over the age of 40 who had a blood pressure check. Of those, 149 had high blood pressure, which is 39%. There were 85 who had severe hypertension, which was 22.5%. A total of 59 people were treated with blood pressure medicine; 53 got Norvasc, 4 got Hydrochlorothiazide, and 2 got Labetolol. The patients were well educated on hypertension and the medication used to treat it. They first received general education about hypertension in the education station. They then got one on one education from the doctor in the MD station. Finally, the education was reinforced in the pharmacy station. All patients were instructed to return to clinic in 6 months. Junior will be given the list of hypertension patients who received medication and will monitor blood pressures between clinics.

There were 2 referral patients who were transported to the Ste Croix Hospital in Leogane who both had serious, potential life-threatening conditions. The first was a boy with a leg infection. He appeared to have an abscess in the front of his lower leg. He was given injectable and oral antibiotics and had an incision and drainage procedure done. He returned to clinic each day, but it became apparent that the infection was getting worse rather than better. We suspected Osteomyelitis. He was admitted to the pediatric ward at the hospital. The second was a little girl seen our last day of clinic. She presented with weakness, dehydration, and an inability to swallow. We gave her IV fluids and antibiotics in the clinic, which seemed to help; however, she still was not able to swallow. We suspected she may have a serious throat infection such as bacterial tracheitis, retropharyngeal abscess, or epiglottitis. She was also admitted to the hospital. We saw the elderly man with elephantiasis back wearing his custom made shoe fashioned by an Ogden podiatrist and an orthotics specialist. He was very proud of the shoe.

We saw 90 pregnant women, along with 50 lactating women. There were 189 prenatal vitamins given out to pregnant, lactating, and some other child-bearing age females. The number of hemoglobin checks given to pregnant women was 86 and the average was 10.7. There were 46 lactating women who had a hemoglobin check and the average was 11.6. We did not find any gestational diabetics or any pregnant women with preeclampsia. We did have a delivery that occurred early our first morning. After hearing the screaming, we arrived at the home where clinic is held and found the baby had already been born, a healthy baby girl who appeared to be at term. All the pregnant women left clinic with a due date based on their last menstrual period, a newborn kit, valuable education, prenatal vitamins, and a doctor's assessment of the pregnancy, including head position and fetal Doppler. For the home visits, we sent 3 teams out and saw a total of 19 patients in their homes. Several of these had hypertension and were treated with blood pressure medicine.

Over the years the local residents of Timo have become more involved, which is the way it should be. Security, gatekeeping, and registration are done almost exclusively by our Haitian partners. They are also involved in translation, and many of the technical aspects of the clinic such as doing vital signs, administering vitamin A and albendazole, vision screening, education, medication dispensing, and data entry. This more intimate involvement can also been seen with the dental, water, and agriculture teams that go separately from the medical group.

Problems and Challenges

Although there were many accomplishments on the trip, there were also some problems and needs. The noise and chaos in clinic has always been a challenge. Another worry was safety. In trips past we have seen several needle sticks. In March 2013, there were no needle sticks. This is a trend we hope to continue. Clinic lines and wait times were always a challenge. Another challenge experienced was in data collection, trying to compare the data from trip to trip. Names may be misspelled, or last name listed first, and some may not know their actual birthdate. Currently the clinic is free, which has many advantages including the ability to see all comers. However, this also created less of a sense of ownership and we have been told that Haitians themselves believe “free care” may be subpar to care requiring a fee. Our biggest limitation was that we are still a biannual mobile clinic.

Our biggest challenge with working to avoid anemia was being able to compare individuals from trip to trip. Currently we are comparing averages between trips, but there was a different patient population that comes each time. We were essentially comparing apples to oranges instead of apples to apples. Still, we have collected data over 5 trips, and hope to identify those who have come to more than one clinic to compare their hemoglobin numbers to see if there is improvement with our intervention. We are not currently conducting randomized controlled trials, which would be logistically very difficult, but also would assess the effectiveness of our intervention best.

During the work with hypertension, accurate blood pressure checking was a challenge in our own health care system, and even more of a challenge in a mobile clinic in rural Haiti. Patients may be standing in a crowded line for hours with kids and be exposed to hot humid weather and sun. This environment may overestimate a patient’s true average blood pressures. A second challenge was making sure the patients were adequately educated about taking a medicine long term. In the past we withheld the medicine until they attended a class held the last day of clinic. This placed an undue burden on the patients to travel back to the clinic on another day, and many we not able to do so. Our first trip we used Hydrochlorothiazide, with is effective and cheap. There was however a concern about not being able to monitor electrolytes and kidney function. The one group of patients we did not give Norvasc to were pregnant or

child-bearing age females. For them we have Labetolol. We have Junior doing blood pressure checks, but this is a large burden given the number of patients we have treated with hypertension.

We found that managing referrals was a much more difficult task than we imagined. Also, the prenatal care that we provided in clinic was limited and not sustainable, as we were only present 2 weeks out of the year. The challenge was the lay midwives who lack sufficient training and were not licensed to do what they were doing.

Future Solutions and Recommendations

As we encountered problems and needs, we came up with some recommendations and solutions. For patients with conditions that we didn't have resources for, we created a referral list, which we hope to find resources for after the trip. As we expand our knowledge of resources in Haiti and form more partnerships, we hope to provide patients with more options. With the many serious conditions that were not as emergent as others – such as seizure disorders, kidney disease, torticollis, lip clefts, uterine masses, breast masses, keloid masses in ear lobes, schizophrenia, bladder extrophy, limbal and dermoid – we hope to work with our local partners in Haiti to help find help for these cases.

To solve the problem of chaotic clinics, two changes were implemented that has made a big difference. One was to separate the medical and dental teams into two different weeks. This freed up a lot of space in the clinic. Second was moving the education station to the tents located outside the clinic. This led to more working space, and less noise and chaos in the clinic. To improve clinic lines and wait times, we used a ticket system that had to be adjusted during the trip. Some did receive preference, such as pregnant women, small children, children who could only be seen at certain times due to school, those who were sick, and locals who were involved in helping in the clinic, as well as our FPF partners. We worked together with the FPF leadership and made daily adjustments in our system during our nightly report meetings. Our goal is for more and more local residents of Timo to participate and take ownership of the clinic operations. This promotes sustainability.

In an effort to more effectively catalogue data, we used some other methods in March to identify patients, including ID cards, birth certificates, and electoral cards. In the future we hope to create a more comprehensive EMR (electronic medical record) with patient ID numbers where each patient's data can be retrieved and viewed from all previous clinics they attended. Because the clinic is now free but we don't want to cause dependency, we will explore the idea of charging a small fee with certain exceptions such as pregnant women and children.

One of our goals in the future is to build a clinic and have it staffed with community health workers and part time Haitian medical providers. This will serve their community year round and will be a more sustainable and effective health care system. We hope in the future to help arrange for cataract surgery to be done for patients residing in Timo. We also hope in the future to do more extensive testing in those found to be severely anemic. Currently we are just doing hemoglobin tests. In the future we hope to test those with severe anemia with a full CBC, malaria screen, sickle cell test, vitamin A level, stool samples for worms, and an HIV test. To accomplish this we will likely have to contract with the Ste Croix Hospital lab. We hope to maintain our relationship with Vitamin Angels who donates our vitamins.

We tried to improve accurate blood pressure readings by placing tarps over clinic areas for shade, making sure the patients are seated and comfortable before checking the blood pressure, and having a system for doing at least 2 separate blood pressure checks at different stations of the clinic. We switched to dispensing the medicine from clinic at the time they were seen, and did the education directly with them in clinic. This seemed to work better. We switched then to using Norvasc, which was also very effective in our patient population, because it was relatively cheap and did not require lab monitoring. In the future we hope to train more community health workers in doing blood pressure monitoring.

Referrals were more difficult than we originally thought. In most cases, we tried to refer to local hospitals and providers. The key was to know where to refer and where the resources are in Haiti. As we expand our knowledge of these resources and form more partnerships, our referral system will improve over time. We had a pediatrician and a faculty member of a medical school in Port au Prince on our Haitian Board. They were both great resources. We spent time each trip networking with local officials and the Ministry of Health with hopes of forming more lasting partnerships and assistance. This will become even more important once a permanent clinic is built.

Our greatest strides in improving prenatal care in Timo were with the education of the midwives. Our goal is to educate them and equip them with the best tools possible, which we believe will lead to better care. The future goal is to sponsor a local young person from Timo to get trained in nurse midwifery and then return to the community in the future to provide care. There is also a chance that once the clinic is built, we could recruit part time Haitian OB providers through the Ministry of Health to work at the clinic.

Personal Reflections

People have often asked me if I think we are making a difference in Timo. I believe the answer is clearly “yes”. One of the most rewarding times was seeing all the gardens that had been set

up by local residents. They were obviously very proud of their accomplishments. They are invested in these gardens because they created them. If HHI had just shown up and planted all the gardens, there would not be the investment and same sense of ownership that exists now. The old proverb that it is better to teach a man to fish than to simply give him fish is certainly true, and is the underlying goal of HHI. This is why education is so important to what we do. I don't see much reluctance of the locals to be involved, in fact just the opposite. They seem very engaged in learning drip irrigation systems, helping install and maintain water systems, and assisting education and clinic operations. Life is not easy for people in Timo, nor will it ever be easy. But I believe many in the community are committed to improving their own lives as well as their communities. Ultimately, they need to be more committed than we are in order for this work to be sustainable. I am always impressed with two things in particular in Haiti. One is how happy they seem to be despite conditions that for us would seem to lead to despair. The other is how resilient they are, how they seem to be able to make a living with so little. I believe our team members come away from these trips more inspired by them than vice versa. I also believe that while in the process of trying to build this community in Timo, we find ourselves to be the recipient of riches that can't be measured in dollar values. This is why we go back despite the sacrifices.