

Haiti mission January 15 – 23 2010

H. Stephen Fletcher, M.D., K.M.

This is the chronology of our medical mission to Haiti in the aftermath of the earthquake.

For the past ten years under the auspices of the American Association of the Knights of Malta and the New Jersey Knights of Malta I have been travelling to Milot, Haiti with a surgical team from St. Barnabas Medical Center in Livingston, New Jersey where I am an attending surgeon on staff. We actually send two teams, soon to be three, for a week each. The teams alternate between a General Surgery team led by me and a GYN team led by Dr. Ladocsi.

My team was regularly scheduled to be in Haiti the week of January 15-23. On Tuesday, January 12th at 4:53 in the afternoon an earthquake of magnitude 7.0 on the Richter scale struck Haiti. The epicenter was situated 15 miles west south west of the capitol, Port-au-Prince. Virtually the entire city and much of the surrounding area were destroyed. This included all of the medical facilities some eight hospitals and most of the government buildings. Some 70,000 or more people died in the quake and later of injuries suffered. Most of the medical personnel in the hospitals and clinics were also killed. The port was also destroyed as well as the airport terminal and the control tower. The earthquake lasted slightly less than one minute. It would be eight days before any meaningful medical help would arrive in Port au Prince. Ironically the first effective team on the ground in Port au Prince would be the Israelis who brought an entire "mash" portable hospital ready to go. Milot is a small town ten miles west south west of Cap Haitian, the second largest city in Haiti. Milot is 70 miles north of Port-au-Prince. The quake was felt strongly there but there was little or no damage to Milo or Cap Haitian. Actually there was a Urology team in Milot when the quake hit. We were scheduled to replace them. At first we didn't know if we were going to be able to get there but we managed to be on the last commercial flight to be allowed into Cap Haitian on Saturday January 16. The urology team, somewhat shaken, went home the next day by a private plane.

Our team consisted of three general surgeons (me, two chief residents, Dr. Scott Sundick and Dr. Melissa Alvarez-Downing), an anesthesiologist, (Dr. Richard Pitera), a cardiologist (Dr. Charles Dooley) and two OR nurses (Carol Myers and Elita Exil) Both nurses were trained in Orthopedic procedures, a skill that would prove valuable in the days ahead. We arrived at 2:30 in the afternoon and were met by Ray Delnadus, one of the Haitian managers of the hospital and driven the ten miles to the hospital. There was no discernable damage that we saw on the way. The hospital was intact and functioning with only a few cracks in the walls. Hopital Sacre Coeur is normally a 75-bed hospital with two operating rooms and clinics as well as a small delivery room for Obstetrics. There are 1200 deliveries, 1500 operations and some 70,000 clinic visits per year. There are two residences for visiting staff with beds for 27 people. There is also a small dining hall and a chapel. Electricity is supplied by a large diesel powered generator, which runs from 7Am to 11PM and also charges banks of batteries, which supply power after hours. The entire budget for all of this is 1.5 million US dollars per year. Most of this comes from donations including from The American Association of the Knights of Malta. There are some 70 Haitian staff including Haitian doctors and nurses employed. The medical director is Dr. Harold Previl who in also a n OB-GYN on the staff. The director of the hospital is Dr. Bernes Chalimot who is a gastroenterologist.

We arrived without most of our luggage and equipment that proved to be too much weight for the small airplane in which we had to travel. Some of us (me) had only the clothes we wore and had to borrow toilet articles and even underwear from those who brought those things in a backpack, a mistake I will not make again! We changed into scrub suits, which were on site and immediately went to the hospital about a block away. A Coast Guard helicopter had landed in a soccer field next to the residence at about the same time and brought six seriously injured patients to the hospital. At least three of these people had gangrenous limbs from crush injuries and the others had various open fractures and large flesh wounds. The odor upon entering the hospital was unbearable. We immediately assessed these patients and that afternoon and evening we had to perform three amputations that were lifesaving. We set up the others for operations the next day. On Sunday morning we did several more operations and then ran our usual surgical clinic for the local people and people from Cap Haitian. We saw some 70 patients and set up an operating schedule for the week. We did this because we did not yet know how many patients we would be getting from Port-au-Prince. At that time we were the only functioning fully equipped hospital in Haiti and had the only blood bank. There is a hospital in Cap Haitian, Junstinian, which is a government hospital and nowhere near as well equipped. Sunday night we went back to the hospital and took apart and cleaned all of the operating room lights. This made a big difference in the lighting.

Early Monday morning we were informed that the Coast Guard would be bringing several helicopters with patients and things began to get hectic. We managed to get through the Monday schedule by pushing all of the operative cases into the morning. Then the patients started to arrive. By mid afternoon we had a dozen more badly injured men, women and children who needed operations. Fortunately, in mid afternoon, a team of three orthopedists and nurses arrived by private jet from Florida. Dr. John Lovejoy and his son John, a pediatric orthopedist from Washington, D.C. led them. None of us had ever met but we quickly got together and came up with a plan to divide the labor. The orthopedists spent the rest of the day operating on setting fractures with external and internal metal fixation with the equipment that they were able to bring with them. Many of the fractures were compound meaning the bone had broken through the skin and these had to be washed out, cleaned and dressed at least every other day until the incisions could be closed. The general surgeons did wound debridement, washouts and closed some of the open wounds in the patients who did not have a fracture in that area (although they may have had a fracture of another extremity). We also did our share of the amputations.

It became apparent Monday afternoon that we didn't have enough operating space. Rick Pitera hit on the idea of converting the delivery room into a third operating room. We knew that there was a spare anesthesia machine in adequate working order in the storeroom and Rick set this up. He also cleaned the room with Raphael (the superman Haitian orderly who was everywhere and did everything). We were now able to give general anesthesia in three rooms. The third room had no OR lights and after dark we used a gooseneck lamp and flashlights. Across the hallway

from the two main operating rooms were three rooms that were used for medical consultation. Rick and John Lovejoy realized that we would need a place to change dressings and wash out additional wounds so these three rooms were converted into procedure rooms (After we left one of these would become the fourth operating room with general anesthesia capability). Each room had oxygen and equipment to give conscious sedation. That day we did 26 operative cases and procedures that required anesthesia or conscious sedation. Rick kept going between three to four rooms supervising the three Haitian nurse anesthetists. By general consensus we shut down the operating rooms at 9PM because everyone, Haitians and Volunteers alike were exhausted. The other factor involved in this decision was that the helicopters at that point did not arrive at night.

Monday night we found out that we would be getting several more orthopedists on Wednesday and two anesthesiologists. The Coast Guard was now bringing several flights a day and the U.S Navy had started to bring in patients. On Tuesday morning the gang decided that we needed a proper heliport so at 6:30AM everyone went to the soccer field and painted white circles with an X in the middle and a large M for Milot. An attempt was also made to paint a smiley face but this didn't work out too well. Whether or not the Navy and the Coast Guard appreciated our efforts we never found out but the effort gave us all a brief bit of comic relief. The hospital was becoming crowded. The mayor of Milot gave us permission to use a school across the street as a makeshift hospital. Actually it was perfect. The grounds were laid out in a U shape with a basketball court in the middle. This became the staging area for all new patients. In consultation with Dr. Previl, Ray Delnatus and Tim Traynor (a civil engineer who has been working with Crudem off and on for over a year and is a hands on person for everything) we decided that one side of the U would be post op and the other side would be admissions and Triage. The bottom of the U was for staff and also pediatric post op patients. There was also a small area for laundry and cooking. School desks were arranged so that the benches faced each other. A mattress was placed across the benches and thus created a patient bed. Local Milot residents who really opened up their homes and hearts for their fellow Haitians prepared all the food and beverages for the patients. As one enters the main hospital there is a large room with benches that serves as a waiting area for clinic patients. Once we decided that all new patients would be admitted to the new space at the school (Now called Hotel Milot by everyone) this area was then turned into a pre-op area. Chuck Dooley took up residence in Hotel Milot and helped all week with triage and immediate care (there was not much cardiology) The recovery room remained the same with capacity for about ten patients but these would now be transported across the street to the new post op area as soon as they were stable. A new route was opened around the back of the hospital to allow patients to be brought to the only x-ray room without going through the main hospital. All of this now gave us a capacity for over 200 patients. It would be needed and then some.

The additional patients required additional staff, at night nurses were now caring for 24 patients each. More medical staff continued to arrive including some very capable ER and Medical Critical Care docs and more nurses and nurse practitioners.

Carol and Elita were joined by more OR nurses which took some of the load off but they still worked like dogs. By the end of the week there were 50 volunteers on site. Wednesday morning saw the arrival of more patients. There were fifteen helicopters received that day with three to six patients each. The hospital had an ambulance, which was used to transport the patients from the field to the hospital. The drivers delighted in using the siren. I suspect it was the first chance they ever had to use it. The volume on the soccer field was such that we had a team down there to meet each helicopter or pair as it sometimes occurred. The number of patients with fractures was incredible. The most common fracture was a fracture of the femur. Many of the lower leg fractures were compound and had received little or no care except for a makeshift dressing and a splint made of anything available. There was some triage going on in Port-au-Prince however. On Wednesday patients began to arrive with either tags indicating the severity of the injury or a piece of tape across their foreheads with the location and type of the injury. Most of the operations were now of an orthopedic nature and the general surgery was limited to washouts and emergencies. We did have two perforated bowel cases not related to earthquake that we did and two C-sections, which were handled by the Haitian GYN docs. The chief residents were now scrubbed with the Orthopedists and Rick had some anesthesia help with the arrival of two anesthesiologists from New Jersey. I helped with the logistics of the new arrangements with Rick and Tim Traynor. Wednesday also saw the arrival of Dr. Peter Kelly, the board chairman of Crudem and an ophthalmologist. Peter took charge of the overall effort with Harold Previl and Tim. No doubt he was a little surprised at how much had been done in two days. There were now 30 to 40 new arrivals per day. Two of the procedure rooms were being used for washouts with conscious sedation and Rick even used drop Sevoflurane to put one child asleep. That is a technique you won't see in the textbooks! On Wednesday over 30 cases were done. Things were getting crowded in the hospital and also in the residence. Some folks were bunked in local missions and some even put up mosquito nets on mattresses on the porch. We ate in shifts because there was not enough room in the dining hall. On Thursday we received word that the mayor was giving us access to a second school next to the residence compound and preparations began to convert this into a second alternate "hospital".

Thursday was more of the same. Another 30 -40 patients arrived by helicopter and patients were now starting to arrive by car (a five hour drive from Port-au-Prince). A miracle also happened on Thursday with the arrival of at least \$500,000 worth of top of the line monitors and respirators donated by Phillips Electronics. Two Phillips technicians also arrived with the monitors. Thursday afternoon and evening Tim, Rick, the techs and I worked to set up monitors in the recovery room, the three procedure rooms and the three operating rooms. Only the two main operating rooms had previously had any monitors. We even changed out the old monitor in one OR while the Orthopedists were doing a case.

Prior to Thursday morning the hospital was rapidly running out of supplies and the Coast Guard was only able to help us a out a little. However, on Wednesday the airspace ban was lifted enough for supplies to begin arriving by private charter the next day. We rapidly went from not enough supplies to "where are we going to put

this stuff' but it was a nice problem to have. The pace of work continued as more and more patients arrived. We realized that we were going to need more equipment such as anesthesia machines, OR tables, beds, tents, another x-ray machine and even view boxes (we had been using the sun and lights at night to read films). Efforts began to try to locate and get this equipment. We all tapped into our contacts at home in this effort and over the next week it paid off to a great extent.

Wednesday afternoon the hospital ship Comfort arrived in Port-au-Prince harbor and began taking patients. This did not diminish the number of patients we were delivered but it did give us a place to take patients that we did not have the capability to handle such as paraplegic and major burn cases. We did not have many but it was nice to be able to get care for them.

By Thursday the intensity and pace of the week was beginning to get to all seven of our team. We had seen some horrible injuries, especially to children. There were countless compound fractures with open dirty wounds. Many of these could have been saved if they had received earlier medical attention but now, four to seven days out from the earthquake, there was no alternative but to amputate. Even then some of the below knee amputations had to be revised above the knee. There were several children under ten years old that lost a leg. There were many who needed fasciotomies or wound debridements on a daily basis. Inevitably there were some we did not save. Two young adults had apparent pulmonary emboli after amputations and died in the post op area. We did not have any anticoagulation capabilities until the following week. One very large man had a massive heart attack after we revised a below to above knee amputation. We saw a child who had relatively minor open wounds come down with tetanus. All of this was getting to us and everyone of the team had at least one minor breakdown. The man who died of the heart attack was my patient. By the end of the day on Thursday everyone on our team was burned out. There were now enough medical personnel on the site and they insisted that the original orthopedic team and we take a break. And so on Friday some people went up the mountain to see the Citadel and our team elected to go to Labadee which is the cruise ship beach owned by Royal Caribbean. Even though we felt a little guilty about this it turned out to be fortunate. We met the Royal Caribbean port manager who introduced us to the nurse on site, Gabriella. They had just delivered bottled water to Justinian hospital transported from the ship by UN trucks. They had been trying to contact Crudem when we showed up. We were able to link up with contact numbers and e-mails. The gist of this was that anything that we could have shipped to the Royal Caribbean office in Ft. Lauderdale would be put on the next ship to stop at Labadee. There are three ships per week. This arrangement has been solidified and was especially helpful two weeks later when the hospital ran out of food and rice was delivered by the cruise ships. They also gave carte blanche to any medical volunteers who wanted to use the beach. We returned to Sacre Coeur late that afternoon and most went back to work. Rick has elected not to go with us because there were more monitors to set up and he wanted to help with that. He even did a couple of more cases. Our luggage had arrived on Wednesday night and except for clean clothes we gave most of it away including mosquito nets. On Friday night everyone stood down having turned over the

operations to the newer arrivals. Crudem had arranged for us to be flown out on Saturday morning the 23rd and although all of us in our hearts wanted to stay it was time to go. Given what we saw and cared for during the week I can only imagine how bad it must have been in Port-au-Prince. Unfortunately, at 6AM just before we were scheduled to leave for the airport, the little four year old girl with tetanus had a cardiac arrest. We were able to resuscitate her but she later died on the hospital ship USS Comfort. This was a truly sad end to the week.

There were so many great people that were thrown together in those few days that I hesitate to mention anyone lest I leave out many. Everyone got along together and worked well as a team. Some people do deserve special mention however. Raymond Delnatus was a tireless prince. He was everywhere running interference for us and arguing with the locals when it was needed. He was not afraid to speak his mind and would even stand up to Tim Traynor on occasion. Tim is another extraordinary person. Over the past year he has taken on the task of reworking the guts of the hospital from the generator and the batteries to the plumbing to anything else. He and his team electrified the school in a day! Most of all he was the liaison between Crudem and the Coast Guard, US Navy, UN and the media. He even did an interview by Skype with ABC news and pointed out that Sacre Coeur was on the ground and functioning to the rest of the world. John Gilbertie who among other things doubled as the official photographer assisted him. They were set up on the porch of one of the residences and by weeks end had six computers up and running with Internet connections. It was also the place where you could always get a cigar (even Cuban). Dr. Anthony Karabanow and his ER/Critical Care colleagues devised a medical record system to keep track of all of the patients. Dr. Mark Perlmutter arrived with Peter Kelly and took charge of all of the non-surgical personnel. He rapidly made order out of what could have been chaos. But the most impressive individual all week to me was Rick Pitera. He was everywhere. He managed three to four rooms at a time with the nurse anesthetists; He came with the idea to transform the rooms. He was involved in setting up the monitors. He even put a kid to sleep with drop Sevoflurane, which would be the modern equivalent of ether technique. We all owe him a great deal of thanks. Not surprisingly, at the end of the week he was the most affected by the overwhelming nature of things. Rick will become a Knight of Malta this November and I cannot think of anyone more worthy to carry on the 900 year tradition of the Knights of Malta.

In reflecting, now that we have been home for two weeks I think you train your whole life to be ready to step up to the plate in a time like this. This time we were the ones to be in the heat of the action and we were privileged to be able to do it.

Steve Fletcher