Humanities

Reflections on a Haitian global health experience

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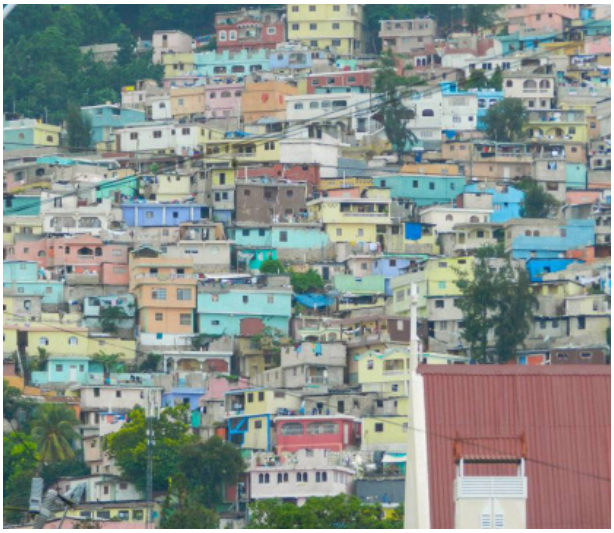
Bougez s'il-vous-plait! Bougez s'il-vous-plait! "Move, please! Move, please!" We cry out to the families sleeping on the concrete slab at our feet as we move through the courtyard and push up the ramp to the small, square room containing the hospital's sole X-ray machine. It is dark and the moon is out in the sky above us. The bed has a broken wheel that continually catches. "Keep bagging him, hold the monitor steady, hold a finger on the pulse." We slide up and into X-ray and I wonder whether the decision to make this road-trip was, in fact, the right one.

Haiti: translated from its indigenous Taino dialect to mean, quite literally, 'land of high mountains'. Seemingly appropriate, for as low-lying valleys accompany mountainous peaks, the ever high-reaching spirits of the Haitian people are faced with the stark reality of healthcare delivery in a country riddled by poverty and natural disaster. In October 2016, I had the opportunity to participate in a medical relief mission to Haiti, in my role as a senior internal medicine resident, with Team Broken Earth Halifax. Personal experiences and observations from this first time, eye-opening, global health experience are recounted in this narrative.

Haiti is situated in the Greater Antilles archipelago and occupies the Western third of the island of Hispaniola. With a population over 10.9 million distributed across a total geographic area of 27,750 km^2, it ranks 32nd in terms of global population density.[1] Average life expectancy is 63.7 years, with a 30% probability of mortality prior to age of 60. The infant, children under-5, and maternal mortality rates are the highest in the Western Hemisphere, and the total median age is only 23.[2]

Despite the general youth of its citizens, the history of Haiti is one of particular significance. A successful slave rebellion in 1804 resulted in Haiti becoming the world's first free black nation. Subsequently, France demanded massive reparation for lost properties and Haiti became globally ostracized. A cycle of poverty and government corruption ensued, and Haiti currently remains ranked as the poorest country in the Western world.[3]

A major influence in Haiti's post-millennial development has been a predilection for natural disaster and the resultant hardships of a poverty stricken nation. The 2010 Haitian earthquake was the country's most substantial and deadly disaster. Approximately 316,000 people were reported as killed or missing, greater



than 300,000 were injured, and more than 1.3 million persons were left homeless.[4] The 2010 earthquake is considered the most destructive event any country has experienced in modern history, when measured as a proportion of persons killed in relation to total national population.[5]

Most recently in October 2016, Hurricane Matthew struck with devastating force, predominantly affecting the southern coastal region, Haiti's agricultural heartland. The death toll in the initial period following the storm is estimated to be greater than 1,000 persons.[6] In total, an estimated 3.2 million people have been affected and a cholera epidemic has ensued with greater than 41,000 cases reported.[7] With the devastation of the agricultural sector, there are problems related to food scarcity that are anticipated to continue. Overall, this represents yet another major blow to a country still rebuilding from the 2010 earthquake in a climate of ongoing political instability.

Team Broken Earth is a non-profit Canadian volunteer task force composed of physicians, nurses, and allied health professionals, established after the 2010 earthquake to provide front line medical relief to the Haitian people. Recognition of the need for sustained medical relief and assistance with rebuilding the nation's healthcare system has led to the regular deployment of Team Broken Earth missions from across Canada over the last six years. Teams are involved in not only the acute care treatment of Haitian patients, but also work alongside Haitian healthcare personnel to assist in the development of further skill-sets and training of best practices.[8]

Team Broken Earth Halifax deployed a group of twenty-five individuals whom spent a week in Haiti from October 29th to November 5th, 2016. In total, the team consisted of: three orthopedic surgeons (a staff, fellow, and senior resident), an anesthesiologist, three operating room nurses, two adult emergency department physicians, four adult emergency department nurses, two advanced care paramedics, one pediatrician, three pediatric emergency department nurses, four critical care nurses, a respiratory therapist, and one senior internal medicine resident.

Undoubtedly, one of the most important advanced planning measures was the acquisition of donated medical equipment. While connecting between flights, our team had the appearance of something like a group embarking to an Everest base camp. Large duffle bags, packed to the absolute weight and size limits, contained basic medical supplies. In retrospect, I personally did not fully appreciate the importance of bringing our own supplies, as I was naïve to the day-to-day challenges encountered in a resource-scarce environment. Intravenous sets and tubing, sterile flushes, suction catheters, appropriate endotracheal tubes, central venous catheter sets, suturing equipment, and acute care life support medications are all basic commodities which we, unknowingly, take for granted.

Our team was situated at Hospital Bernard Mevs (HBM) in Port-au-Prince, where we both worked and were lodged. HBM is a Haitian hospital operated in conjunction with Project Medishare, a non-governmental organization present in Haiti since 1994, founded out of Miami University. After the 2010 earthquake, Project Medishare helped transform HBM into a 50-bed trauma, critical care, and rehab hospital that has neonatal, pediatric, and adult intensive care units, adult and pediatric emergency rooms, in-patient wards and operating rooms, as well as an orthotics lab on site. A small pharmacy, laboratory, and diagnostic imaging (consisting of a single X-ray machine, an ultrasound machine, and a computed tomography (CT) scanner that was dysfunctional during our trip) are also located on the compound.

Unfortunately, a substantial proportion of HBM's inpatients are Haitian police officers or soldiers who were injured in the line of duty. Due to this, along with its location in a particularly poor area of Western Port-au-Prince, the hospital is heavily guarded. Soldiers armed with automatic weapons are situated at tall, reinforced gates at the hospital's sole entrance/exit. These soldiers seemed to have an unofficial role in initial 'triage' as they would stop and question patients, families, and ambulances before allowing entry. Due to clear safety concerns, volunteers were not permitted off the HBM compound except for an evening meal for which group transportation was provided.

From the hospital's rooftop, a nearby marketplace and the neighbouring row houses were readily viewable. The houses consisted of concrete walls with bare openings for windows and metal rooftops, many of which were weighted down by stones and loose debris. The houses were without indoor plumbing and electricity, thus creating rows of darkness after sundown. Between shifts, some team members would drop candy or small toys to children in the alleyway below, whose shouts and cheers were audible throughout the hospital compound.

Given our team's multi-faceted scope, a broad range of acute and chronic medical and surgical pathology was encountered during our week. From an adult perspective, there was an abundance of blunt and penetrating trauma, most of which was incurred due to hazardous driving conditions. Our orthopedic team usually started their days with pre-arranged cases, but was also kept busy late into the evening treating acute trauma cases.

High rates of smoking, diabetes, and cardiovascular disease gave rise to acute presentations of underlying and poorly managed chronic medical conditions. The familiar emergency room presentations of chronic obstructive pulmonary disease, congestive heart failure, diabetic ketoacidosis/hyperosmolar hyperglycemic state (DKA/HHS), heart disease, pneumonia, and stroke were all encountered. We did not see the direct effects of the cholera epidemic, given our location in the northern part of the country. Our team of emergency department physicians, nurses, and paramedics worked tirelessly and collaboratively alongside local Haitian staff in the emergency department.

The emergency department itself was a dingy rectangular room, smaller than a single QEII trauma bay. The sickest patients were aligned side-by-side on a series of stretchers, tables, and mattresses. On one occasion, we ran three simultaneous resuscitations within twelve feet. Those 'less sick' scrunched into corners on random pieces of furniture, while others simply lay on the dirty floor. The open space was collectively shared, and all present were obligatory observers of the emergency department's various activities.

As national health statistics would suggest, our pediatric team seemed to encounter the greatest mortality on a daily basis. Without access to basic prenatal care, there was a host of gestational complications and many severely premature neonates. Sequelae of untreated hydrocephalus were evident in older infants and toddlers. It was challenging work and our pediatric team consistently stepped-up in all aspects.

I was situated predominantly in HBM's adult intensive care unit (ICU). The attending staff for the

five-bed ICU was one of two Haitian internists whom provided day coverage from 0800-1600. Thankfully, my seemingly long-forgotten French bilingualism returned at a reasonably functional level. There were often medical students or residents present for daily rounds and I was able to help them and engage in some teaching, a significant departure from the medical teaching unit.

As the emergency department and ICU were usually both very active, my work alongside the daytime Haitian internists often flowed into night-float coverage for the ICU as well.

Our QEII critical care nurses provided 24-hour coverage so that the nursing needs of the unit were met. We treated septic, cardiogenic, and neurogenic shock, polytrauma, respiratory failure, and DKA/HHS amongst a host of other pathology. We helped and supported each other, most notably during a few of those early morning hours, and worked with our Haitian counterparts to problem solve and treat sick patients. It was a particularly special experience to share with my wife, whom worked as an ICU nurse.

The most challenging aspect of my experience in Haiti was adjusting to the reality of working in an environment of dramatic resource scarcity. It was frustrating and saddening. Though some basic blood testing was available, most often results were not available until the following day. The ICU blood-gas machine was usually broken, leaving no means to monitor acid-base status. In an area afflicted with infectious disease, most microbiology testing was essentially unavailable, and antibiotic selection was limited. Diagnostic imaging consisted of occasional basic X-rays, and multiple patients with closed head injuries died without access to CT scanning. The pharmacy supply relied on donations and we would run short on medications as simple as potassium replacement.

As Haiti has no means to support a publicly funded health system, families are left to pay for the treatment of their loved-ones. Given an average annual income of $640 USD, even the limited tests and treatment options that were available were usually not a realistic possibility. Families are also responsible for the provision of food and basic personal care. These are challenges of which we are so fortunate to be unfamiliar with.

This represented my first global health exposure and the overall experience was eye opening and challenging, but certainly rewarding. I hope that it is not my last such experience and would encourage others considering similar endeavors to carry through. For a country that has experienced almost unfathomable misfortune, the spirit of the Haitian people continues to persevere and push forward. Volunteer medical organizations such as Team Broken Earth will continue to play an important role in supporting the ongoing recovery of a country whose spirit will continue to rival the height of its mountains.

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