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Due: March 25, 2016
International Experience Reflection Paper
Manguzi, Rural South Africa

KUMC International Health Elective: Reflecting on Rural South African Medicine

"Travel makes one modest. You see what a tiny place you occupy in the world." – G. Flaubert

I stared at it, letting the small snake wind its way around my arms and hands and fingers. The morning lecture over the clinical treatment guidelines for snakebites had just concluded, and now we were invited to touch the real thing. The bag that had shivered visibly during the presentation was full of live snakes, and as the drawstring loosened to let them free for the physical demonstration portion, I realized I was completely unprepared to handle South African medicine. Most of the nursing staff fled the room after seeing them fall onto the table, but I stepped forward and let one wrap around my tentative fingers, traveling rapidly up my arm and then away from me onto someone else. The physician-lecturer grinned at the small group of volunteers who stepped forward for a better look. That sense of feeling out of my depth but ultimately choosing the experience of international medicine – it never left, even on my last day. I never felt prepared, but I also wanted to let my anxiety related to the unknown interrupt an amazing experience.

Enter the medical student team: Meredith Pavicic, our brilliant and motherly presence during the trip; Christina Munford, problem-solver and action-taker; and me, the one who did the dishes. Together, we covered broad spectrum knowledge of General Surgery, Obstetrics & Gynecology, and Internal Medicine. Theoretically speaking. I was fortunate enough to travel with them, as they had prior experiences with international medicine in East Africa. Their perspectives and insights were invaluable, as I had never previously traveled outside of the United States.

Our crack team divided into our respective areas at the hospital our first morning, and I took an active interest in Men's Wards and Women's Wards, the inpatient medical services. I knew that we would be required to do at least one week of Men's Wards, perhaps the most complex and debilitating medicine I would ever see. When selecting an international location, I realized that South Africa offered the unique opportunity to see incredibly complex medicine as well as more unusual presentations of infectious diseases, such as HIV and tuberculosis.

My Academic & Professional Educational Goals & Areas of Interest were as follows:

1. Challenge my own cultural biases, perceptions of international & tropical medicine in a rural setting
2. Explore how physicians adapt their plans of care in regards to medications, imaging, and other medical necessities in a resource-poor area
3. Compare & contrast American medical education compared to South African medical students, International physicians
4. Examine the social, economic, and personal health burdens of communicable infectious diseases such as HIV & TB on the health care systems
5. Improve clinical proficiency with procedures, clinical skills prior to residency, as Manguzi Hospital known for hands-on learning opportunities

Again, as this venture was primarily to be a clinical learning experience rather than a true research project, there was some uncertainty that I could accomplish all five with the brief time we had there. However, I believe that my experiences and those of the physicians I worked with were adequate in exploring these educational aims.

My initial learning goal was achieved almost immediately, as the hospital was much better set up in order to serve patients than I had expected. The wards were dominated by HIV and opportunistic diseases, pulmonary and extra-pulmonary TB, and psychiatric issues. At least 50% of the patients on Men's Wards were HIV+ at any given week. Everywhere we looked, there were zebras – Kaposi's sarcoma, odd lymphomas, tuberculosis. We wore our N-95 masks religiously during rounds, often struggling to breathe comfortably in the heat. TB resources were limited, as there was no isolation available unless patients were MDR TB+, then they were isolated amongst themselves in another building. There was no air conditioning on Men's Wards, and it was summer there, meaning the windows and doors were thrown open to encourage even a tiny breeze. We raced to finish rounds before the physicians had to leave for afternoon clinics. Beds on Men's Wards were all lined up only a few feet away from each other, with no curtains in between them. Privacy was not as rigorously observed here, and HIPPA did not exist either. We used the term RVD+ to indicate a patient had HIV, rather than announcing it to the entire room. Unfortunately, many acronyms are used to quietly indicate HIV status, but eventually patients figure out what physicians are discussing.

Patients all shared one bathroom. Oxygen hook up was only found in two places within the ward. Pulse oximetry was not available. My first day, an attending told me to do a paracentesis on a patient who was actively combative from his hepatic encephalopathy. She smirked when I asked where the ultrasound machine was located. The South African medical student quickly and quietly showed me how to use physical landmarks instead. Their training emphasizes physical exam skills and clinical suspicion, which left her ultimately far better prepared to deal with patients than our test and imaging-heavy training from the United States. Hands-on training was abundant there, too – by the end of my trip, I did three lumbar punctures, sutured, splinted an arm, and placed several catheters. I also read innumerable X-rays and essentially admitted a patient alongside Meredith. Meredith & Christina did much

more, as they worked in surgeries, but as I declined to pursue surgery as a field, there is less need for me to get experience operating.

Unfortunately, there was no HIV Specialist on staff, but physicians could call a hotline for a HIV Specialist consultation. HIV adherence counseling could also be completed the same day it was ordered. It was pleasantly surprising to see that X-rays, Ultrasounds, and many labs could all be ordered rapidly and come back in a timely fashion. However, in many cases, CT scans had to be arranged for and patients could wait days to months for their scheduled imaging, which always involved transportation to an outside facility with the needed equipment. Even in the event of head trauma or CVAs, most of the time immediate CT scans were not available. However, their interdisciplinary team of PTs, OTs, and SLPs often were all incredibly skilled and readily available for assistance. Their care was essential, especially with CVA patients. One PT even caught Pott's disease, a diagnosis previously missed. It was encouraging to see so many colleagues our age doing so well within their respective professions. The physicians were also wonderful to work with, most of them being from foreign countries with a few native South African physicians mixed in.

Perhaps the most profound clinical experience I faced during my time there forced me to face the reality of medicine in rural Africa. I wandered into the Resuscitation Unit, their equivalent of an Emergency Room after morning rounds on Men's Wards, and stopped short almost immediately. The patient in the RU bed nearest the door looked extremely ill; she was a 21 year old girl with ESRD from lupus nephritis, on peritoneal dialysis four times daily. She had presented uremic, anuric, and seizing. She had already coded once that morning. I picked up her paperwork, scanning the values and I heard myself say, "Oh, she's dying." The RU physician nodded, ear still glued to the phone as he worked on trying to get her urgently transferred to another hospital for emergency dialysis. The unit hummed with background noise, at odds with our uncomfortable waiting. All of the physicians who wandered in to check in on things noted she looked terrible, and they commiserated with doctor on call about the difficulty of getting her transferred. Her GCS was 4/15. I eventually left for lunch, feeling disoriented. There was someone dying and there was nothing to do but beg over the phone with other facilities for a transfer. Eventually after lunch we returned and a nephrologist at another hospital had agreed to take her, but only if we arranged a bed for her in the ICU. One final phone call to the ICU revealed that they were full, and couldn't accept the transfer until a bed was available. The doctor hung up and tried a different hospital. Every phone call meant another barrier to immediate care and more time wasted. Outside hospitals had to be convinced, and when they agreed, something always seemed to stand in the way. The process was maddening.

Situations like these aren't nearly as common in the U.S. – here, there always seems as if there is someone to page, or a number to call to orchestrate life-saving care. In the U.S., she would already be on the kidney transplant list with an entire care team aggressively following her case. Eventually, one of the surgeons found her mother, who knew how to do peritoneal dialysis when none of physicians did. She quietly and calmly hung the fluids while answering questions in Zulu and English from curious physicians. I breathed a sigh of relief. It took a physician thinking beyond the limitations of the situation to track down her relative who knew

how to do PD while we waited for hemodialysis and a nephrologist. Feeling strangled by lack of resources meant I could only see one possibility – transfer. I was holding her to a different set of standards, expecting more from what we had to work with. It was both incredibly frustrating and a massive reality check – the same diseases we treat in the U.S. are life-threatening diseases in Manguzi. A lack of access to adequate care means patient death, and expecting differently is foolish. Additionally, there is only the physician on call. If they cannot find a way to save that patient, or find the lab values, or get the transfer paperwork in order - it likely will not happen. Working there often requires immense skill and creativity to find working solutions to situations that lack straightforward answers.

The most profound cultural experiences centered on the stories and experiences shared by a variety of individuals regarding Traditional Medicine, practiced by the Zulu people and other individuals throughout South Africa. Traditional Healers are herbalists or diviners who have existed in South Africa long before Western Medicine, and treat the spiritual and health needs of their communities. However, as so many pts believe in Traditional Medicine and see Healers, there are often barriers to care with disagreements between providers and healers as to what is wrong with a patient and how to best treat the disease. Some healers recommend pts stop their ARVs. In some cases, illness is believed to have been brought on by swallowing a snake, and to become cured, patients must induce vomiting. One woman did so by swallowing muthi, (traditional medicine) consisting of a concoction of paraffin wax and toilet bowl cleaner. Many drug-induced liver injuries (DILIs) from Traditional Medicine were also seen, and ritualistic cutting for patients with edema brought risk of infection and transmission of blood-borne diseases. One new mother brought in her baby to RU with extreme malnourishment and dehydration after giving her infant muthi for several weeks; the baby's weight was lower than it had been at birth. We also discovered during our Kruger Safari that people will poach animals in order to obtain animal parts for muthi. Learning to work alongside these Healers continues to be a challenge for South African providers, but they clearly have a role within African Health Care, as so many individuals turn to them for guidance.

In the future few months, I hope to take a few pieces of wisdom from this trip into practice. The international experience reminded me that a physical exam can be telling, if only I take more time with patients. Physical contact with patients can also be reassuring and therapeutic during such examinations. Identifying the utility of a test before ordering it forces me to consider both the financial costs and the risks or benefits to the patient. Learning the skills for self-reliance now in medicine may one day serve me well if I travel somewhere without full time phlebotomists or nurses staffing the wards 24/7. And considering alternative solutions in times of crisis, even creative ones, allows for a more nuanced practice of the art of medicine.

I'm immensely grateful for the assistance of both Meredith and Christina; I would not have survived the African bushveld without them. I would also like to thank the KUMC International Office for their unwavering support in planning and executing this trip.

It will definitely not be my last.