

When I reflect on my elective experience at Mulago Hospital in Kampala, Uganda, the main things that come to mind are people: my new friends; Ugandan medical students, and other International students also on elective, but also the Ugandan patients, and ALL the people in Uganda! One of the medical students there told me that on average each Ugandan woman will have seven children – and I would be inclined to believe him! But I'm getting ahead of myself ... I'll start at the beginning, last August 2009. My friend and classmate, Aafia Hamza and I were talking about Med IV and about doing an international elective together. We had both been to Tanzania with the International Health Office after our Med I year and were interested in learning more about International Health and also, admittedly, interested in a little travelling. In talking to other friends who were a year ahead of us in medical school and had been to Uganda, we thought this would be a good fit; we were both interested in infectious disease and tropical medicine, and were excited to return to East Africa! As we talked more about the elective, one of my other friends, Lauren O'Malley, expressed interest in joining us, and later still we discovered that a fourth classmate, Kaila Rudolph, would also be there at the same time, and so our group was set!

To set up our elective, we found Makerere University online, and contacted Susan Nassaka Byekwaso, the Education Programme Support Officer for the Faculty of Medicine. She asked us to fill out forms stating the departments with which we were interested in completing our electives. Although I filled out Pediatric Infectious Disease, she initially assigned me to Adult Infectious Disease. However, on my first day of the elective I spoke with her about my interest in Pediatrics and given the number of students interested in Adult Infectious Disease, it was actually better that I attend the Pediatric wards. I was taken to one of the General Pediatrics Ward and asked by the Head of the Ward which year I was in in Medical School. Answering "fourth", I was assigned to join a team of about eight other fourth year medical students from Makerere University. Medical School in Uganda is a total of five years with years four and five their clerkship years – I was happy to join this class. With respect to my learning on this elective, joining the class was probably the best thing that could have happened to me! The Ugandan medical students were very friendly and very welcoming, and I quickly became a member of their "class" attending Problem-Based Learning (PBL) sessions with them, early morning lectures, ward rounds, field trips and even doing a night "call".

My personal and academic goals and objectives for this elective were to learn more about tropical medicine, specifically about diagnosis and management of Infectious Diseases common in East Africa, and also to gain perspective on health-care in an under-resourced area. I wrote and decided on these objectives when I was under the impression that I would be completing my elective in Adult Infectious Disease. However, given that I had applied only to Pediatrics for residency, it's fair to say that in reality my personal goals were to learn about tropical medicine as it pertains to children in East Africa.

### *Disease Diagnosis and Management*

I really feel that my Ugandan elective experience surpassed my goals and expectations in terms of learning about tropical disease management and diagnosis in children. I was extremely fortunate in

being able to join my “class” of Ugandan Med IVs and participate in all their learning sessions for the three weeks I was in Uganda. Luckily, their Pediatric Blocks are four weeks, so I was able to attend nearly a complete set of their lectures/ teachings. The students were wonderfully hospitable and ensured that I never missed a lecture or PBL session. Consequently, attended morning sessions at the Malnutrition Clinic, two PBL sessions on Malnutrition, PBL sessions on pneumonia, HIV and TB, teaching on seizures, two class field trips (one to a School for the Disabled and one to a School for the Deaf), and daily ward rounds. During a couple of the days when my classmates were reading or working in the library, I spent time in the Acute Pediatrics Ward. This ward is a sort of in-between from the Emergency Room and the General Pediatrics Inpatient Ward where children are sent for assessment after being deemed “non-surgical”. Following assessment, they are either sent home directly or kept overnight for observation prior to either admission to the ward or discharge home.

As part of the teaching that Makerere University offers all visiting medical students, we had the opportunity to attend two lab teaching sessions on hemoparasites, learning mainly about malaria but also trypanosomes and microfilaria. We attended lectures by visiting professors (from Yale) on leishmaniasis and leprosy, and also grand rounds on schistosomiasis. In our final week, we attended a lecture comparing clinical teaching at Yale and Makerere Universities. I found this lecture, by an Infectious Disease clinician from Yale, incredibly interesting as many of his observations were similar to ones I had made when comparing Dalhousie to Makerere. Mostly they were related to the structure of teaching, learning and responsibility with respect to medical students, interns, residents and attending staff, underlining that the level of responsibility interns and residents have at Mulago Hospital is certainly much greater than that of their American counterparts.

Although I did not in fact spend time on an Infectious Disease ward, I feel that I had many opportunities to learn about infectious diseases common to East Africa, such as malaria, HIV, TB, schistosomiasis, and therefore was able to realize my primary objective. Additionally, because I was on a General Pediatrics ward, I had the opportunity to learn about other illnesses common to children in Uganda, such as Sickle Cell Disease, pneumonia, malnutrition, tetanus and seizure disorders.

One example is a little girl on the ward who became “my patient”. A four-year old, this little one presented to hospital with a stroke. Her mother easily recognized her symptoms as a stroke because she had had one previously at eighteen months of age. Because her mother spoke English quite well, I was able to take the history, and do the physical exam myself while on “call”. I had read that children with Sickle Cell Disease are at risk for having strokes, but in my time on the Pediatrics Ward in the IWK in Halifax, I had never met a patient with the disease and had never seen a child with a stroke. On presentation, this little one had incredible pain precipitating complete right-sided paralysis. Interestingly, because of her previous stroke, she had neurologic findings on the left side indicative of a stroke recovery. She and her mother had been attending the Sickle Cell Clinic at Mulago Hospital, however, as she became increasingly anemic, her hydroxyurea treatments were insufficient in preventing a vaso-occlusive syndrome leading to pain and stroke. Luckily, though, she did quite well

following transfusions, and with diclofenac to treat the pain. By the time I was to leave my rotation (three days after the stroke), she was walking well and her smile was symmetrical.

### *Resources in an under-resourced system*

My second main objective was to gain insight and perspective on health care in an under-resourced country. During my time in Uganda, I recorded some of my thoughts in the form of emails home. The following are a few of the stories that I think best describe some of the things I saw that opened my eyes to the state of health care in an under-resourced country, and also some of the differences between Uganda and Canada:

[This morning] ... we watched a horrific lymph node removal from a three year old. In Canada they would do this in the OR under general anaesthetic, but here they just gave the child some morphine by mouth and used local injected into the armpit (where the node was coming from). It was quite awful and the child was in a lot of pain ...

The resident told us after the procedure that they would have preferred to do it under general anaesthetic, but it just wasn't possible – there wasn't the Operating Room space, and they couldn't get an anaesthetist. She said that if they wanted the results in any kind of reasonable time, they would simply have to do it themselves. Worried about TB of the Lymph Nodes, the resident felt that extraction under local anaesthetic was the best option.

The [Acute Care] emerg is crazy every morning ... between the moms and babies there have to be over 200 people waiting to be either sent home or to the ward ... the system here is quite different - you're seen when you come in, and then they decide if you go home or stay for treatment ... so you stay in a ward in the Acute Care overnight during which time the med students that are on call "clerk" the patients ... it took me a while to figure it out, but "clerking" is simply taking the history, doing a physical exam and then trying to come up with a diagnosis. And, being on call happens as the whole group together and doesn't mean staying overnight for the med students - they were horrified when we told them we stay overnight! They clerk a couple patients and then go home, sometimes as early as 6pm or as late as 11:30 if they're really keen! And, it seems that if they don't want to go in they don't have to ... they just have to clerk a certain number of patients during their rotation. So anyway, the morning after call, the patients from the day before are admitted to the ward and then it begins all over again. In the morning the room smells of the sweet stench of urine that has stained all the beds ... babies here don't seem to wear diapers ...

The Emergency Room was crowded and smelly. There were more cribs and children in there than I could count each morning. One of the residents told me one morning that over half of them had malaria, and they would probably be sent home unless they were so sick they required IV antimalarials.

The system of clerking and seeing the patients only at the end of the day was also very different and initially a bit confusing for me. Given the volume of patients, though, this seems to have been the most effective way to get the work done!

This excerpt is from one of the weekends that we spent in a rural community. We had gone gorilla trekking, (a wonderful once-in-a-lifetime kind of experience) into the Bwindi Impenetrable Forest, and were on our way back to the start hut when the following took place:

After lunch, we had to climb up another mountain (out of the jungle to get back to the gate where Robert and our truck was) and we walked by a couple villages. Then, one of the trackers told us that there would be a woman coming by on a stretcher, who was in labour. I guess she had been in labour for a day or so and was having trouble, so the villagers decided she should be taken to a hospital (the nearest one being 30km from the top of the path/road which took us about a hour to walk up!) ... it was crazy ... four men were caring this stretcher made out of I think banana leaf or something like that ... and the rest of the village was walking ahead or behind it. We just let them hurry past us - they could walk much faster than us ... I guess they're used to the mountain! But then, as we came a little further along the path, they had put the stretcher down and there were a bunch of women using material to make a curtain and the woman in labour was apparently trying to have the baby right there ... we told them we were doctors (we thought that would be easier than trying to explain that we probably would be in three months ... and we rationalized that we probably won't learn much more between now and then!!) and we could help - that we had all delivered babies ... but they declined and told us to keep going so we did ... but then as we were walking along a couple men went running by telling us that she had had the baby and was bleeding now ... again we asked if we could help but they said no ... I hope that everything went well ...

We were told by the gorilla trackers that were with us that once the men got that stretcher to the top of the mountain, they were expecting a car to be there to drive the woman to the hospital. Had this not been the case, they were prepared to have to continue to carry her the 30 km to get to the nearest clinic, which is a clinic quite different to those that we see in Canada. In fact, this clinic would have been far different from the hospital in Kampala even. At this time, we were a ten-hour drive from Kampala, high up in the mountains near the border with Rwanda.

With each medical elective experience I have had in an under-resourced country, I have been struck by the adaptability and the creativity of physicians and patients alike. There is a resilience that comes with having very little to begin with and I think we stand to learn a lot from observing and participating in health care in the third world. I continue to be amazed at the conditions patients stay in and physicians work in, and reflect on how lucky we are in Canada to have rooms of only two or four patients, and access to resources, human and material, that cannot even be dreamed about in places like Uganda.

*Ugandan Medical System*

Throughout my three weeks at Mulago Hospital, I was able to observe their system of medical education and had the opportunity to talk with some of the medical students about the Ugandan system for post-graduate medical education, and also their expectations for their own practice. The undergraduate medical degree is taught in a manner very similar to the Canadian system; as I mentioned, students participate in PBL sessions, and have didactic lectures. The textbooks are the same, although there are far fewer in Uganda and the majority of learning is done in the library on campus or at the hospital. Ultimately the governing principles of good history taking and an effective physical examination are still impressed upon the students. Investigations available do differ in that all imaging must be paid for out of pocket, and some blood work as well. Management is again more difficult because although Mulago is a public hospital, not all medications are covered. After spending the three weeks with my “class”, I really do feel that the theoretical education they are receiving is quite similar however, the commonest diseases are different and there are considerable limitations when it comes to treatment.

After graduation, like us, Ugandan medical students complete a residency period. However, similar to the American system, they are required to complete an Internship year after which time they can choose to specialize or to practice as a General Practitioner. Those who choose to specialize then complete residency in (usually) three years and then go into practice. Practice, however, is quite different. Because physicians in the public system are so poorly paid, they all have private clinics as well. So, a typical work day entails attending ward rounds and then as quickly as possible (according to the students) going to their private clinics, in other buildings at other hospitals where they are no longer available for consultation until the following morning (again according to the students). In the evening, an attending might have another private clinic as well. Consequently, interns and residents seem to have a great deal of responsibility and autonomy. I can't recall ever being aware that one was calling an attending throughout the day!

A final passage that I would like to share is an experience that didn't specifically take place during our elective time, but did give me a new perspective on what a two-tiered health care system really is. On our first weekend in Uganda, while traveling on an outing to go white-water rafting on the Nile the following took place:

... it was raining that day, and on the way to Jinja our bus got in an accident. Everyone is ok now, but it was a pretty bad accident. There was a petrol truck that was jack-knifed across the road, and it was just after a blind hill, and because of the rain, our bus driver couldn't stop in time so we hit the truck. A few people needed stitches, including Lauren and Deanna, and I hit my face and have some very tiny scratches and a bruise but really, we're ok now.

(You'll appreciate that in this email home, while I touched on the important pieces, I attempted to down-play the extent of the accident to mitigate unnecessary worrying!) Following the accident, which

was on one of the major highways in Uganda, we were taken to a private clinic called “The Surgery” in Kampala. One of the girls was quite badly injured, with a huge laceration extending from nearly her knee to ankle on her left leg. She required sedation for cleaning and suturing. At The Surgery, we met a very pleasant British physician who had been practicing medicine in Uganda for thirty years, initially as a missionary in rural Uganda, and more recently in this private clinic. This clinic was a stark contrast to the acute care wards in Mulago Hospital. There was no question as to whether or not the instruments and sutures used were sterile (this statement is not meant to imply that they willingly use un-sterile instruments routinely at Mulago, however the degree of sterility is somewhat questionable), and there was certainly better pain management. There were no crowds at all, and the facilities were clean and tidy. It certainly made us all reflect on the differences between the publicly funded Mulago Hospital and private clinics, a dichotomy that we expect when reflecting on the Ugandan and Canadian systems, but one I hadn’t really thought about existing within Uganda as well.

### *Concluding thoughts*

I began my reflection thinking about and alluding to the people I met while in Uganda. East Africans have proven to once again be a friendly, welcoming and hospitable people. The Ugandan medical students that I met really shaped my elective experience and ensured that I was always a part of the group. I knew I was “in” when, towards the end of my first week, some of the guys were poking fun at me just as much as they were the other girls! They love to laugh and have fun! Two of the medical students really became good friends of mine, and I hope that we might keep in contact (we did exchange mailing addresses!). The other international medical students were an equally interesting part of this elective in that we were able to learn from one another; there were students from the US, Norway, and Holland there at the same time we were. They were sometimes assigned to the same wards we were, and our discussions on rounds about diagnosis and management were often all the more interesting. Through talking with these students, I think it’s remarkable that we are all learning similar curricula, similar lists of differential diagnoses (albeit in a different order!), investigations and management. It truly underlines the potential for what “Global Health” can be and where things have come in the era of the “global village”. The differences that remain are in the availability of resources; ultimately financial but in the form of human resources, pharmaceuticals and technology. These are the gaps – not knowledge, or intelligence.

So what can I say I have taken with me, besides my new friendships? I have learned a lot about malnutrition, malaria, HIV, TB, pneumonia, Sickle Cell Disease, and touched on many other diseases more common to Ugandan children. Although difficult to quantitate, I do think I have gained added perspective on health care, learning about the Ugandan system and also those of some of the countries represented by the other visiting international medical students. And will I return? Most definitely!

Respectfully submitted,  
Jeannette