

Cynthia
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ER in the Mountains: Emergency Medicine & Wilderness Elective at Cornell

The emergency medicine elective was broken up into a 2-week subinternship component at the Weill Cornell Campus of NY-Presbyterian Hospital and a 2-week wilderness medicine component. The wilderness component consisted of one week of lectures, workshops, trips to the Bronx Botanical Garden (Botanical Medicinals), the Bronx Zoo (Reptile House), and principles of Disaster Response taught by the EMS Special Operations Team. The final week took place in the backcountry of the Adirondacks involving High Peak and Lake Champlain ecosystems.

Most of my courses in medical school have centered around spending long hours at the library or more recently on the hospital floors. When I am on the floors I spend many hours looking up lab values, calling for consults, and writing notes. The actual practice of medicine, well at least for medical students and interns unfortunately involves much more clerical work than I thought. When you think of interns in any other field you think of young professionals dressed in suits shuffling papers around, typing reports, and doing whatever it takes to make a good impression on their superiors. Unfortunately for medicine interns and soon-to-be interns it is not much different for us. But, we jump through this hoop, like the many other hoops we have jumped through in the past, to get to that almost tangible place in our career where we dream of. Sometimes through this process we encounter moments that inspire us and renew our interest in medicine. We find those key pertinent findings on physical exam that affects their diagnosis and treatment, we are often the first to read a lab report or an imaging study that will forever alter our patients' lives, we educate them about their disease, and we hold their hands when they are in pain.

On rare occasions we are given opportunities to practice and study medicine outside of our usual elements. We have the opportunity to see and help treat diseases we only learn about in textbooks, we are placed out of our comfort zone and gain knowledge that not only changes the way we will practice medicine but also changes our core. Usually these opportunities are only available far away from our medical school and local hospital. For example, I have had opportunities like this in South America and in the Caribbean, my roommate in Tanzania, my other classmate in Thailand, etc, etc. But, when I heard I could have a similar experience right in my home school I was surprised. A classmate told me of an Emergency Medicine and Wilderness course taught at Cornell Medical School. "Where", I first thought, "in Central Park"? Actually, it was in the Adirondacks.

The Adirondack Park and Forest Preserve in Northern New York at 6 million acres is larger than Yellowstone, Yosemite, Grand Canyon, Great Smoky, and Everglades National Parks *combined* and is the largest park in the nation outside of Alaska. "The Adirondacks shall be forever kept as wild forest lands" and with these words, written by the New York State Legislature in 1885, the Adirondack Forest Preserve was born. Nine years later, the Adirondacks became the first and only wild land preserve to obtain

constitutional protection through the inclusion of Article VII, Section 7, the "forever wild" clause, into the state Constitution.

The elective was started by Jay Lemery, an ER physician at New York-Presbyterian who has been described as "a rising star in the field of wilderness medicine, whose fondness for the wilderness is matched only by his unrelenting sense of humor." Jay recruited good friend and fellow emergency medicine colleague, Flavio Gaudio, whose impressive knowledge in botany and medicinal plants inspired me to read up on plants and even make my own nature flash card set. Finally, there was Todd Miner, a true outdoorsman who is the head of the Cornell Outdoor Education Program in Ithaca and could probably write a book series about knot tying. The three of them with the enthusiasm of a handful of other emergency medicine physicians whose passions include botany, insects, venomous animals, international medicine, marine medicine, aerospace medicine, backcountry rescue and survival were our teachers. As our textbook we had the bible of all wilderness textbooks, Paul S. Auerbach's Wilderness Medicine. This book weighs 10.8lbs, 2316 pages long and has chapters entitled "Animals, Insects, and Zoonoses" and "Dehydration, Rehydration, and Hyperhydration" as well as "Ethnobotany: Plant-Derived Medical Therapy." Our very own Jay Lemery is the author of the Aerospace Medicine chapter. The book makes Robbins' Pathologic Basis of Disease seem wimpy. I borrowed the book from the library and after two overdue emails I'm still having a hard time returning it back. I love the thing.

This fall nine students from around the country came to Cornell to act as emergency medicine subinterns in the New York Presbyterian Hospitals and as wilderness emergency medicine responders in the Adirondacks. The subinternship experience of the elective was great. I was given the opportunity to close scalp lacerations, stitch wounds, reduce joint dislocations, and even attempt a lumbar puncture. I rode in EMS ambulances, pulled all-night shifts alongside my attendings, and for the first time in medical school I felt I actually became friends with my attendings. We even had nicknames for each other by the end of the elective. I being a Dominican from Queens became "Shanana", Jay became "Jam Master J" and Flavio became "Flava Flav." I can write a book about the connections I made with the other medical students. We only shared one month together, but it was an amazing one and I truly will remember them and hopefully will stay connected with some of them for years to come.

Our wilderness experience was filled with various clinical scenarios where we rotated from being "doctor in charge" to being the "victim of the day." We had scenarios on acute mountain sickness, high-altitude cerebral edema, venomous snakebites, bear attacks, various limb dislocations, spinal injury, hypothermia, near-drowning, anaphylactic attacks, lightning injuries, and emergency airway management. We learned things like how to evacuate someone using just sticks and our rain jackets or some rope, how to make splints with just about anything, the many uses of duck-tape, how to perform a cricothyroidectomy in the field, how to manage asystole on the field s/p lightning strike, and what to do with an amputated limb or a dislocated eye s/p bear attack. We learned other general wilderness skills like how to make a fire, disinfect field water, use a compass, read all sorts of maps, avoid bear attacks and also be able to survive them, how to send out a search & rescue team, and how to canoe in not-so-nice conditions. The last skill ended up being more necessary than I thought after Jay and Flavio had to do an unexpected midlake canoe retrieval rescue scenario one rainy and

windy day where my partner and I were the “victims of the day,” but unfortunately my canoe partner and me we were not acting. I learned the importance of knowing my limits then.

Throughout the course, I also found some of my favorite quotes, such as “all bleeding stops eventually,” and “in wilderness medicine... we bury our mistakes.” The practice of emergency medicine, especially in the wilderness, necessitates an ability to make quick independent decisions and to be able to adjust your approach to the patient as their condition evolves often without the aid of imaging studies or lab values. The emergency medicine physician has much fewer diagnostic tools available than the internist, specialist or the surgeon. On the floors I often hear complaints from nonemergency medicine personnel like “Why in the world did the ED make this diagnosis?” or “why didn’t the ER attending do this” or complaints like “another useless admission from the ER.” Earlier this week, I even had a neurologist sway me from entering emergency medicine by describing the physicians as “triage nurses.” During this elective and my experience in both the hospital and in the wilderness I developed a new appreciation to the challenges ER physicians face every day. Because of insurance reasons ER physicians have become the primary care providers of the community. However, they must be able to retain their role as emergency medicine physicians and respond to life and death situations quickly. They cannot wait for those MRI results or specific lab values. Medicine is practiced at a purer level. We diagnosis and treat patients with a good history and physical exam, the aid of some quick and easily assessable technologies like EEG, x-rays, and ultrasound and most importantly with the knowledge we have learned from our studies. These skills should be fundamental in all fields of medicine. Studying these skills outside of the hospital and far from access to any fancy technologies only sharpens our history and physical techniques and forces us to realize the treatments that will save lives.

Nelson

Excerpts from the Journal of a 1/8th master

Day 0

We are heading out into the wilderness today. If I am to be realistic, I don't think we will all make it back.

We do what google maps says should be a 5 hour trip in a little over 4. I am not sure what it says about this group that I am traveling with that everyone is in such a rush to the unknown. Along the way we pass innocent families out for the long Columbus day weekend attempting to recreate his pioneering spirit. But none of these families is with us as we pass the point of no return.

Camp is beautiful. But so is a crotalid pit viper as it coils to strike. We find ways to entertain ourselves as the sun sets and the stragglers roll in. Veggie hamburgers and brownies a la mode have never tasted so good. I have to go now to prepare for Cynthia and my presentation (entitled Aren't you Glad(io) for Dr. Gaudio - this is the more PC name) on toxic and medical plants. We are taking this very seriously as what we teach

today may mean the difference between life and death tomorrow. I hope my colleagues take it just as seriously. A razor's edge my friends. A razor's edge.

Day 1 is tomorrow.

p.s. A few of us went hunting for Champ the Lake Champlain Lake Monster at night. We saw stars, shooting stars, and the moon 2 days from full but Champ has eluded us this night. Or maybe, we eluded him.

Day 7 -

Early AM - Everyone else is asleep. Tomorrow, or later today rather, everything resets.

Sitting here after the final celebratory night of fooseball, ping-pong, and stupid card games, things don't feel quite real.

Tomorrow I leave this comically disaster prone group and this world where even if 10 minutes pass like an hour, people do magically heal. Broken C-spines will be cleared and AMS/HAPE/HACE resolve if you manage to hold on for just a few more minutes. (ed note: not to give anything away, but this was before the final scenario...)

Speaking to the doctors on the trip, it wasn't necessarily encountering disasters in the wild that makes a wilderness physician. Its the study of wilderness medicine which has improved their preparedness for the world around them.

In my personal statement for EM residency I say that medical school has changed language for me. Words like "inspiration" have shifted in their primary indications. When I hear the word now, its reflex to count a person's breaths and note any respiratory distress. It may be a bit cheesy, but on this trip at least, I remembered what I used to think of first when I heard the word. There was so much that I learned and still hope to learn from the physicians, staff, and fellow students on this trip. From the proper way to set up a camp to the proper way to perform an emergency cric in the wild I think I've gained a lot in a week. Mostly though, whether it was demonstrated through expertise on camping, wilderness procedures or botany, I was most taken with the passion that these people have for the environment and wilderness medicine.

The Saranac 9. What can I say about my fellow students. You all are crazy. That about sums it up. You all have shown me another way to look at life. I'm glad we did this together and I would definitely go to "war" with you (not literally of course just to clarify for any of those who take offense at the word...you'll notice it was in quotes). I would stand side by side with you in an emergency any day of the week. When the scenarios got crazier and crazier, we pulled together. We struggled together. And we got better together.

So where to things go from here? What happens tomorrow? Well, I'm not really sure how this story ends, but I am ready to find out...

Kelly

1. What was the most difficult situation for you during the trip?

I believe the most difficult situation was the very last scenario. In the last scenario the group encountered three victims who were struck by lightning, one of whom went into asystole. I applaud Scott's performance and his mature decisions to continue our CPR efforts for a limited amount of time. Once the time limit hit, he announced the death and told us that we needed to move on. There was an intense moment of silence where I reflected on the limits we have and the realization that sometimes our best efforts are futile. This was a difficult moment for the group, but was planned at the perfect time. At this point in the trip we were pretty confident in our abilities. Even though I was not the doctor-of-the-day, I learned just as much by observing such a great leader.

2. When you had to lead the island near-drowning scenario what were some of the challenges you faced as doctor in charge? What do you think you did well? What do you think you would have done differently?

So, the island scenario started off bad when I found out that I was only allowed to take 2 other students with me to the island. By this time I was comfortable working as a team of 9 and the idea of cutting it down to a team of 3 was worrisome. At this time, I had no idea what to expect on the other side. When I finally arrived to the island (in my rowboat), Tim and Scott (who were in a canoe) already had both victims out of the water. I immediately jumped out of the boat to help them when I encountered the second major challenge...the rocky terrain was COVERED in bird poop. For those without prior experience of this mixture, water and bird poop is very slippery, especially when applied to rock. We managed by being very careful in our footing and positioned ourselves on dry areas as much as possible (dry poop is not as slippery).

The next challenge we faced was how to get two victims on the boats while maintaining c-spine. Dr. Edelstein, who had a Sam-splint c-collar and a therm-a-rest sleeping pad backboard, was loaded first in to the rowboat without incident. Unfortunately, the transport of Dr. McStay, who only had his head braced (tightly) with a lifejacket, posed a bigger problem. We were out of supplies at this point and were running out of time. Both victims were wet, freezing and needed to be brought back to Camp Dudley so we can utilize the rest of our team and supplies. The decision was made to put Dr. McStay in the canoe sitting up with the life jacket still strapped to his head. Regrettably, there were no pictures of this comical scene. On the way to Camp Dudley, Dr. McStay's true calling of life was revealed- acting. He became somewhat combative, minimally responsive, and overall uncooperative. This behavior still continued after reaching the camp, which posed challenges to his doctors, Cynthia and Lindsay. They did a wonderful job controlling him and getting him warmed up efficiently.

The last challenge I was faced with was what to do now. We had the victims warmed, a fire built, and the scene controlled, or so I thought. Towards the end of the scenario one of the other instructors, Anthony, literally fell into the fire that we built. I turned around at the last moment just in time to see him pulling his foot out of the fire. My first thought was that we actually had someone hurt and one of the 10 board-certified

licensed EM physicians who were watching us would take over. I quickly realized since they were just standing there, it was part of the scenario. It immediately became a non-issue when Nelson jumped up and attended to him and his injuries.

Overall, the challenges were faced and controlled. There is no way I would have been able to handle this scenario with out the other students. I had to stop many times and ask for help brainstorming ways to deal with these challenges. Since it was such a large scenario with multiple victims, I believe each person took on a huge role and preformed very well.

As for what I would of done differently... COMMUNICATION!! We were given 2 way radios so that the island team could communicate with the camp team. Sound like a great idea and it was till I lost the radio for at least 20 minutes while on the island. Jessica, the scribe/communications director, was incredibly patient with me. The only way we were able to find it was when she radioed back to ask us to see how we were. I heard her pleasant voice muffled under about 4 backpacks. Even after finding the radio I could of given her more updates about the victims so that the base camp could have been more prepared. One of the major flaws happened while we on the island. The call needed to be made on whether to clear Dr. McStay c-spine or not. I reluctantly did neither. Instead I did something in between which caused us to waste precious time on the island. Looking back, it would have cut 10-20 minutes off the island time if I would of just made the call that his c-spine was fine. In the end, I learned a lot from this scenario and my mistakes. I was impressed with the performance of the other students and with Dr. Edelstein and Dr. McStay patience. This scenario took about 2 hours and they were wet and cold for about 1 hour and 45 minutes of it, there is no question about their dedication to teaching wilderness medicine.

3. How did this course impact you as a medical student and as a person?

This rotation was amazing. I have been back for about a month and I am still going around showing my pictures to everyone I can. Yes, all 500 of them. Annoying, probably, but I am doing what I can to promote wilderness medicine especially to other students interested in EM. This course coaches you on how to approach any situation in a systematic fashion, it teaches improvisation, and most of all demonstrates the importance of teamwork...All essential skills in medicine.

Barry
Adirondacking...

First sight of Camp Dudley and I feel like a kid again-strike that (I always feel like a kid)- a big person amongst a huge field of green, mini bunk beds and doctors sans steths and grimaces. Todd Miner arrives with the biggest auto ever and it's full of gear, unfamiliar knickknacks and even some beer. Enter Beth, the wizard of C.O.E magazine and author of various mystery books (her most recent under a new and improved pen name). Per her request she will become the wizard of the kitchen during her few days here...

At this point my journal got wet s/p coffee spillage and I put it away for a few days... To sum up the rest of the trip, on my now last day, in some sentences or less- scenarios (lots of them). People got bitten by imaginary bugs, tripped over disappearing rocks, and got struck by Zeus rods. In fact, I think I'm in a scenario right now or at least aware of the fact that one can occur at any moment (I am currently taking a bath in an undisclosed location)... Canoeing, climbing, eating, climbing, falling, falling, scenarioing, et al. All in the rain. Sucks (thanks suckup five). There's definitely not enough coffee on this trip. Todd Miner is the new Chuck Norris... Jay and Flavio always look for each other during their scenario roles-its really cute (I can say that word because I'm currently wearing cargo pants in the mountains and I just wiped by glut hole with a dead animal hide)... And now for some commencement msgs: Cynthia and Lindsay--please desire some meat. I saw my 13th rib this morning (I didn't know we had that many)... Scott and Justin-thanks for letting me join your group and eat some meat (my kidneys are yours whenever you need them)... Jessica-I just got an update on new Lyme disease treatment protocol (our presentation should conclude before the release of Chinese democracy)... Nelson and Tim-the tent smells surprisingly good given the amount of feet and socks inhabiting it... Kelly-thanks for the band aids, gauze, and ace bandage (you get the point, my stem cells thank you for their continued preservation)... camp counselors aka docs--thank you for getting me home alive (actually, that message is from my mommy).

cheers.

spit.

Barry

WCMC EM/WM Blog Fall 2008

Lindsay:

Wilderness Medicine Day 2

We arrived at Camp Dudley yesterday, where we were happy to find beautiful grounds and a cozy lodge for our stay- Real World meets Lost meets Grey's Anatomy. We enjoyed some free time playing sports and barbecuing, all to be followed by botany charades.

Cynthia and Nelson gave a fireside presentation on botany, and had us acting out the identity of different plants, including the willow tree, ricin, ginseng, ginkgo, belladonna, rhododendron, and opium. And you know we're med students because we really did enjoy it.

Anyway, today was the start of our scenarios and "Doctor of the Day" assignments. First we hiked, took care of some "injuries" and then in an attempt to learn how to make a litter for an unstable c-spine... I had a questionable broken neck. Yes, I was the victim to be carried off our hike by a stretcher, man-made out of sticks, ropes, and sleeping pads. It was not all that comfortable, but I have to say my colleagues did an impressive job and carried me out without any iatrogenic injuries. Later in the day I was the "DOD," and had to manage a minor trauma scene. It was a great opportunity to be in charge, because students don't usually manage emergent situations. It was a good simulation to portray the gravity and reality of being injured out in the wilderness.

