May 2017 Volume 11, Issue 1

Newsletter

Mountain Medicine Society of Nepal (MMSN)

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Courtesy: Sanjeeb Bhandari

Editor's Note

Year 2003 was when like-minded people in Kathmandu, led by their professor, established an organization with the aim of working in the place they love, the mountains, and working for the people living on and traveling to high altitude areas. (23.7% of total land in Nepal lies above 3000m and eight out of the ten highest mountains in the world lie within Nepal). The organization is called Mountain Medicine Society of Nepal. Since its establishment, MMSN members have worked in different high altitude places, at the aid posts established under Himalayan Rescue Association Nepal at Gosainkunda, Thorung Phedi in the Annapurna and Everest Base Camp clinic aka Everest ER. The members have also accompanied many high-altitude experts to help them with many research projects on the lap of the Himalayas. MMSN also has been conducting outdoor activities, and training for medical students and young doctors under the program "Climbing for Fun" with the help of grant provided by Farrar Foundation. We also conduct monthly journal club, and the visiting experts on high altitude physiology, mountain medicine and emergency medicine have been providing excellent presentations for our enthusiastic members.

With this newsletter we have tried to bring out interesting experiences of our members related to adventure, wilderness and research. I hope these articles will help the readers acquaint themselves more with the activities that MMSN carries out and help them find their passion of mountains and wilderness. I hope you enjoy reading this issue. Let us know how you feel about the issue and send us valuable feedback for future issues.

Sanjeeb Sudarshan Bhandari
(Chief Editor)
and the MMSN Newsletter editorial team

Not Just a Bideshi Disease

Buddha Basnyat

For decades we have been saying that altitude illness is not just a "Bideshi" disease as many Nepalese think this way. This is because many of us in Kathmandu sit on our comfortable chairs and read about tourists, trekkers and mountaineers suffering from severe altitude sickness. Most of us don't know about altitude sickness amongst Nepalese. It is vital to fill this gap in knowledge and realize that this is very much a "Sowdeshi" disease.

Nepalese porters, soldiers, pilgrims, government workers and teachers from lower altitude are all at risk of altitude sickness. Many of these have died in their line of duty due to severe altitude illness. Now we have new group of Nepalese at risk of altitude sickness due to easy road access to high altitude. These are young Nepalese high school or college students who go for 'picnic' in the Tilicho Lake area (5000 m). In addition, the hordes of vulnerable Yarsa gumba (caterpillar- fungus plant known for health benefits which grows at high altitude) pickers who are seen in the spring time at high altitude in the Nepalese side of the Tibetan plateau, are also at risk of this disease. Here we will focus on the impact of a new high altitude road.

Roads are already built or are being built that give us direct access to high altitude. Now it is possible to go from Beshisahar (780 m) in Lamjung by a jeep or a van to Khansar (3800 m) in Manang in a single day. Then on, one can continue the trip to Tilicho Lake Base Camp (4100 m) by foot in 4 to 5 hours the next day and the very next day one can reach up to Tilicho Lake (5000 m) in about 3 hours. Many young Nepalese such as college and high school students do this trip since this road opened in 2014. With the earthquake of April 2015, there was less traffic in this area, still this route sees many people going up from 780 m to 5000 m in three days.

This rate of ascent is a recipe for being a martyr to severe altitude sickness. For the prevention of altitude sickness, the recommendation is not to sleep higher than 300 to 500 m from the previous night's sleeping altitude after an altitude of 2500 m. It is also dangerous to suddenly go up from low altitude to greater than 3000 m in one day. This fast rate of ascent to Tilicho Lake breaks all these rules and puts individuals at risk of life- threatening high altitude pulmonary edema (HAPE) and high altitude cerebral edema (HACE), which is basically unwanted, deadly water in the lungs or brain respectively.

Many Nepalese students and teachers think this trip is like a college picnic to Godavari. Besides being completely ignorant about altitude sickness, they may not have proper warm clothes for high altitude travel. Some women have even arrived at Kanshar wearing high heel shoes dragging a suitcase with wheels. Furthermore, when we Nepalese feel cold in the mountains we think that it will "warm us up" if we drink alcohol. And most don't stop with one drink. Lodge owners in Manang report that many Nepalese on their way to Tilicho drink inordinate amounts of alcohol which is detrimental at that altitude on top of the risks already associated with fast ascent.

The Himalaya Rescue Association (HRA) has put out many leaflets and signs regarding prevention of altitude sickness and safety hints of travel to high altitude all along the road and tea houses from Beshisahar to Tilicho. But we are a nation that is not observant and even when we see and read notices and directions, most of us think we are immune to the problem, that mishap will only happen to someone else.

When it does happen to us and we all say, "Lauza, ke garne"!!, a very common Nepalese expression because we make these avoidable mistakes again and again. Unfortunately when you are dealing with life- threatening HAPE and HACE, "lauza ke garne" may be our famous last words before we depart to our heavenly abode as has happened many times to pilgrims while trekking up to Kailash Mansarovar (4500m) due to severe altitude sickness.

Lake Tilicho also attracts religious devotees. There are pilgrims going to Tilicho Lake who believe that, it is the lake that is referred to in

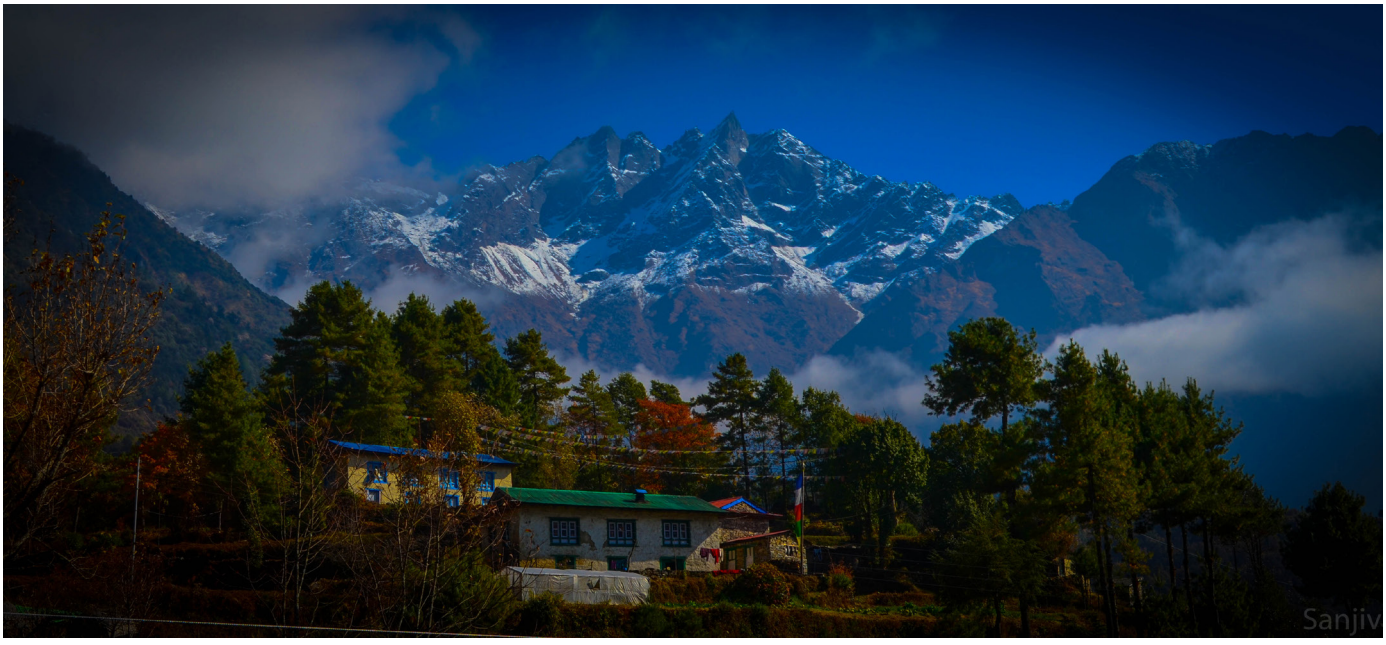
the Ramayana wherein the crow recited the Ramayana to Garuda and where Shiva found solace after the death of Sati which is also all written up in our Swastani Brata Katha.

For many Nepalese college students going to Lake Tilicho has special meaning because they all read in geography that this is the highest lake in the world. (This fact I think was first mentioned by Dr. Harka Gurung, the famous Nepalese geologist). They want to see this highest lake. It would have been wonderful had the writers mentioned about altitude illness in the same vein and tried to create awareness about altitude sickness. Perhaps an interesting science project regarding altitude sickness? It would go a long way to prevent of altitude illness. The HRA and MMSN (Mountain Medicine Society of Nepal) have been bringing this topic up about creating more awareness about this disease entity amongst Nepalese, but it has fallen on deaf ears of our government.

Many years ago we had suggested that when visitors receive their trekking permit, it would be useful to write a single line, beware of altitude sickness, on the permit so that this would alert the many visitors that know nothing about this problem. But this has not happened despite a sustained effort on our part.

Organization like HRA, TAAN (Trekking Agents Association of Nepal), NMA (Nepal Mountaineering Association) and MMSN with the help of our government need to try and keep high altitude travel safe for both Sowdeshis and Bideshis. We can praise the magnificence of the Himalayas. But we also need to be realistic and talk about the real mortal dangers posed by travel to these places by unsuspecting, vulnerable groups. We can be certain that this sudden ascent by partial travel on road to Lake Tilicho is going to be deadly for unfortunate someone. This is tragic because death from altitude illness is 100% preventable. The job of the many organizations involved in mountain safety will be to continue to increase awareness of this disease entity for all of us who want to enjoy travel to these magnificient places in the Himalayas.

Prof. Dr. Buddha Basnyat
MD, FACP, FRCP(Edinburgh)



Courtesy: Sanjeeb Bhandarii

Gosainkunda: Trekking and Medicine

Utsav Joshi

"I took a walk in the woods and came out taller than the trees" - Henry David Thoreau

Just a thought of adventure takes my breath away. And of course, the adventure itself. This time, it was different. It was an amalgam of adventure, education and service. Gosainkunda!

The annual "Mela of Janaipurnima" was just nine days away when we set out for the lake situated at an altitude of 4380 m. In this annual festival, thousands of pilgrims from different parts of Nepal ascend to visit this holy place. We were just another seven amongst the thousands. Himalayan Rescue Association (HRA), in collaboration with MMSN, conducts a health camp on this occasion every year and I was fortunate to be a part of this wonderful team. The first day's journey was a jeep ride from Kathmandu (1300m) to Dhunche (1900m). We were received at Dhunche with a cool and peaceful view. It was a relief to our battered eyes sore from seeing the landslides on the way. The next day was the day of ultimate hiking. Green was the color of the surroundings and it was pleasing to eyes after the I-don't-know-how-long stay in Kathmandu. The steep ascent, however, was so tiresome. Up and up. Up and up. Listening to Coldplay and walking continuously. But witnessing the slow continuum of streams, rivers, trees, and rocks was an enchanting experience that I had been longing to feel and is still etched in my memory. Chandanbari was a blissful sight after six hours of continuous walking, elevating the level of lactic acid in our muscles enough to prevent us from walking any further. The next day, we hiked for mere three hours and settled at Lauribina. This place is the embodiment of earthquake-ravaged Nepal. A drizzle started that soon changed into a heavy rain and we could only make out the remains of collapsed hotels. The next morning the sky opened up and there they were – the MOUNTAINS. The view of Langtang Lirung was just awesome. The locals were trying to show us the mountains from Machhapuchhre to the one in Tibet but of course, we were content with Langtang. The way from Lauribina to Gosainkunda was a complete tundra. The Lord of the Rings folklore sprang to life here. I half expected or rather imagined the company of the ring walking through these terrains. Three hours of walk and we got the first glimpse of Bhairav Kunda (Kunda=lake) and Saraswoti Kunda. After ten minutes or so, there was the majestic Gosainkunda. It was simply mesmerizing.

The camp was set at the bank of Gosainkunda behind the Shiva temple. People who had climbed to Gosainkunda usually had very steep ascent profile. Some of them even climbed the entire height (from 1900m to 4380m) in one day. Hence, we were expecting a lot of patients with AMS, HACE and HAPE. The first few days were not as hectic as we had previously imagined, with a few cases of altitude sickness arriving at our aid post. Most of them were high altitude headache and mild form of AMS. This left us with ample time to hike around. It was on the fourth day when the nightmare began. It was the day before Janaipurnima festival and a throng of people came to Gosainkunda from all possible directions. We were expecting a lot of people with altitude illness and of course, they didn't disappoint us.

One night, we got a call from one of the Tharpus (temporary tent accommodation). Three of our team members went to see the patient. The patient had ascended rapidly from Dhunche to Gosainkunda in just a day and a half. At night, the patient was having difficulty breathing. When we saw the patient, he was hyperventilating and had spasms in muscles of the hand and forearm. An interesting theory was created - the patient developed AMS due to rapid ascent and difficulty in breathing at such a high altitude caused him to hyperventilate. Hyperventilation resulted in respiratory alkalosis with subsequent hypocalcemia and this resulted in the typical Trousseau sign. The patient was administered oral Acetazolamide and counselled to descend immediately. Acetazolamide would help him for AMS but we were not so sure about the tetany. But in the end, it seemed to work. Bicarbonate loss in the urine worked wonders. The spasms gradually decreased and his breathing also normalized. He descended the next day.

On the eve of Janaipurnima, we were called to see an elderly patient. He also seemed to have ascended very fast and was already showing signs and symptoms of AMS with severe headache, nausea, vomiting, dizziness, extreme fatigue and sleep disturbances. The patient was diagnosed as having severe AMS and was immediately given treatment dose of oral acetazolamide, paracetamol and ondansetron. He was also counselled to descend down immediately. But, he didn't. At around 9 pm, we were called to see a patient who had lost consciousness. We came to the scene and realized that this was the same patient we had treated earlier. HACE, we thought. We tried to assess GCS but there was no response at all. We gave sternal pressure and then, the patient responded. He had spontaneous eye opening and also followed motor commands but had no verbal response. Was it stroke? Not sure. The patient did not have any motor weakness nor any other signs suggestive of posterior circulation stroke. We reverted back to the idea of HACE and immediately gave him intramuscular injection of dexamethasone but to no avail. Simultaneously, some of the members were taking a detailed history when someone mentioned that the patient had gotten worse while taking his meal. We tried to ask the patient but he was unable to speak. After a long try, he managed a single word "Bhat". We auscultated his chest and there was bilateral decreased air entry. Choking!! We immediately performed Heimlich maneuver. After a few seconds, the patient was taking long, deep breaths and after a minute or so, was recounting his story of choking. Thank god!!

A lot of patients with AMS were seen around Gosainkunda that day. Majority of them were mild to moderate AMS whom we treated with oral acetazolamide. A few patients, however, were quite serious with severe AMS and they had to be injected Dexamethasone to prevent developing HACE. The most damning aspect of most cases with severe AMS was not the severity of their situation but their reluctance to descend down in the face of death. The family members would risk the life of their loved one to stay one more night. "How can we go back just now? We have just arrived." "How can we descend down without doing the puja?" "He can manage one more night, can't he?"

In a sea of patients with altitude sickness, 'anxiety and conversion disorder' stood out. We practically got to use the plastic bag to control hyperventilation in many patients of panic attacks. That worked just fine. We even used a face mask for an anxious, hyperventilating lady without starting oxygen and she got better. Placebo effect!

The trek was refreshing and the medical experience was even more amazing. The opportunity to see patients of altitude sickness in excess of five hundred or so was wonderful. And we even got to take a dip and worship in Gosainkunda, that also on the auspicious occasion of Janaipurnima. That's something, isn't it?

Courtesy: Soumya Adhikari

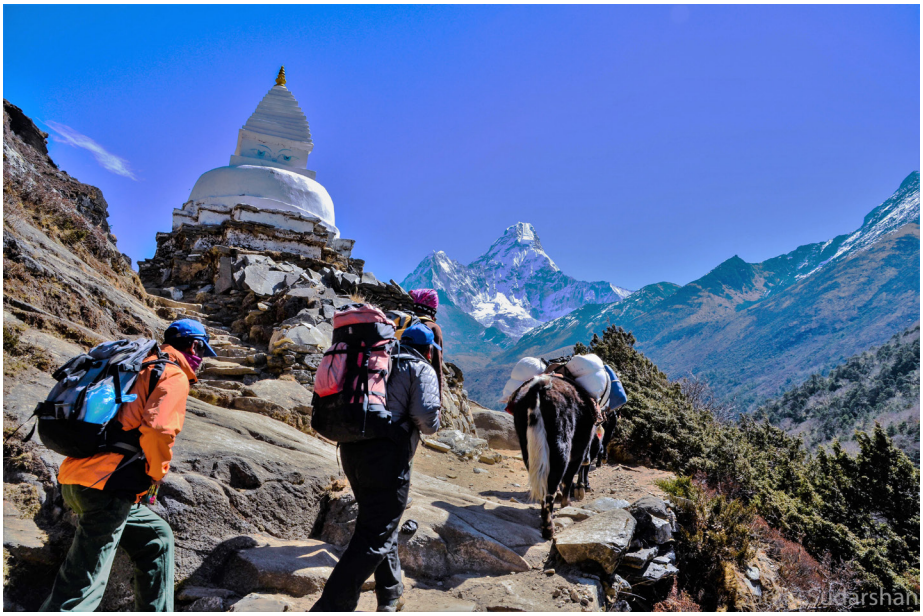
And as I quoted earlier, we took a walk in the woods and came out taller than the trees.

Utsav Joshi
MBBS
Maharajgunj Medical Campus

Up and Up

Shailesh Niraula

'Finally' was the first thing that popped in my head when the pyramid came into view. It had been almost a fortnight since I landed at Lukla airport and I could wait no longer to see this magnificent piece of art. Situated at the base of glacier in the magnificent Lobuche valley, this research/observatory would be my home for the next fortnight. I had arrived with my group of 36 researchers to perform various high altitude physiological testing. However, five of us including me, Dr. Ali MacMannus, Dr. Daniella Fluck, Emily Morris and Audrey Kriby had a slightly different route to the pyramid. We took a detour from Namche to village of Thame and Khunde for about ten days where we did our exercise testing in Sherpa kids while the rest of the team continued their journey up to pyramid. As days passed, Audrey's cough kept getting worse and by the time we were done testing, she had to go down for she couldn't possibly go any higher. The four of us hiked our way up from the village of Khunde and finally the pyramid was in the view for the first time.



Courtesy: Sanjeeb Bhandarii

After starting our journey from Pheriche early morning and climbing 'Thulka ko ukalo' (Thulka pass), we hit 5000 meters for the first time. Following the trail from then on, we reached pyramid at around noon. The first thing you see on a bright sunny day as the pyramid comes into view is the magnificence of Mount Pumori on the left with the Lobuche icefall on the right. There is a small knoll just behind the pyramid and this is where I would live the craziest hour of my life so far and relive the same again and again in my dreams.

We reached Pyramid but it was completely opposite to what I had imagined. I was so used to working in a small group that the number of people over there was just overwhelming. People running hither and thither. There were tests being conducted in every nook and corner. It took me some time to settle in. Phil, our leader gave us a day off to settle in and get used to the altitude. It turned out that Ali and Emily had no more testing to be done and my part would start after a couple of days. So the three of us had next couple of days to ourselves with nothing to do. And as they say 'Empty mind is devil's workshop'.

The next day Ali planned to go on a mini trek to top of small hill just behind the pyramid. This was supposed to be an easy hike to keep our legs moving as we were planning to do Kalapathar the very next day. That morning I was wearing fleece shirt with down-jacket and regular trouser when Ali came over to ask me if I wanted to join her and Emily. I agreed but with one condition, 'We will not break a single drop of sweat.' I really didn't want to change into my sweatshirt nor did I want to be drenched in sweat while wearing my fleece. All I wanted to do was go for a nice morning jog before I sit down for a cup of coffee.

The three of us left pyramid and walked up to the lake hiding just above the rocky dune and at the base of the hill we were planning to climb up to. It was a gentle ten minutes' walk with bits of rock climbing. And I was thinking, 'No sweat-so far so good.' It was then when I saw it - a human like figure moving straight up along the face of hill we were planning on climbing up to. As I strained my eyes a bit, I realized the guy was an Italian bag packer who had stayed with us last night at the inn (the inn is just adjacent to Pyramid). What I failed to realize was that he was

carrying two walking sticks!! From our view point he was basically walking that face as if it were level ground. Deeply fooled we were!!
We had two options to reach the point our Italian friend was going to. Either take his way which seemed pretty straightforward and would take about twenty minutes. Or return to pyramid and hike slowly off the edges from the other end of the hill to reach the top which would take about an hour and half. I really wanted to be back by the time coffee was served. The first option seemed to be a far better choice and even if we went slow we could easily do that face in about half an hour 'without breaking sweat'.

I persuaded the other two to take the first option though they really didn't need much of a convincing as no one wanted a long hike that morning after days of continuous travel. In a nutshell we didn't want to walk much but wanted to reach the top. Once you start a hike, you definitely want to reach the top. So on that fateful morning the three of us followed our Italian friend and went straight uphill. An unforgettable uphill it turned out to be!!!!

I was leading from the front when we started to climb and I planned to take a direct route straight up. It really seemed doable at the start. Just 5 minutes into the climb, I realized I was breathing heavily and could feel my heart pounding in my chest. I ignored the early signs my body had given me. Bad mistake. That was in a way point of no return. I could have easily called the whole thing off and we could have gone back down to pyramid. Yet I kept on going and others followed my lead. There is something about the hills and mountains that most people experience while going up, I guess. The desire to not give up and go back. The desire to conquer the challenges and the satisfaction it gives at the end. Sometimes this feeling can be very dangerous.

I continued upward. Just few minutes since my breathing had become heavy was the first time I realized this hill was not as it seemed from below. It was actually quiet steep and walking on two legs was impossible from that point onwards. That was the first time I contemplated if I should go down. As I looked down, I realized that there is no way down. The downhill portion was too steep to go down safely and any attempt to do so would surely result in a fall off the cliff. The only way to go down safely was with ropes which was like a day dream at that point of time. I was stuck and with me two of my friends. Going down from that point was impossible and the only way forward was up. Yet it was impossible to go up on two legs. I had to crawl uphill from that point onward. It was almost like imitating spider-man at 5000 m yet it was not. Afraid as I was for my own safety, I was more concerned for the safety of the two following me and I was already feeling guilty for getting them into the quagmire position.
As I stopped, Ali asked me if I was thinking what she was thinking. Emily was thinking the same. The only way was up. We were climbing in a straight line with Ali and Emily directly behind me till that point. We spread out a bit since we had no idea how the rocks would behave and as we were pulling on rocks to push ourselves upward, one of the rocks might just fall off and seriously injure the person below. After that was done, there was only one thing left to do, crawl slowly upwards.

Since I started walking way back as a toddler, never had I used all four limbs to walk. Not in a million years would I have guessed it to be such a high energy exercise. But believe me, I have never panted so hard in my life like that day. My heart was literally trying to come out my chest. It was just pounding so hard. Yet I couldn't stop for there was no place to stop. I came across a big boulder just off the top and I had to stop for I had reached my physiological limit. It was a godsend for me at that moment. The first thing I did was look up and see how far 'the top' was. The good thing was that it must have been less than ten meters. The bad, it was the stiffest part of the face. I looked down and noticed how easily things got from bad to worse. Any attempt to go down few minutes earlier would result in some kind of injury, that possibility was now replaced by almost certain death.

With no other alternatives in sight, I decided to do it as fast as I could. I crawled fast and hard without thinking a bit. Suddenly I was in a big green meadow with a big mountain looking down on me from the other end. The grandeur of Mount Pumori was right in front of my eyes and I could even see Everest base camp. I was drawn away by the vistas for a moment only to realize that I had two following me. I looked back and saw Ali and Emily running uphill as I did few moments earlier.

'What was that about us not breaking a single drop of sweat Shailesh?', Ali asked as she gasped for breath. It was indeed amazing that the three of us survived without a single scar. We had a good laugh about it for the rest of the journey but Oh boy! some experience that was.

Shailesh Niraula
MBBS
Maharajgunj Medical Campus

The Half Toast

Pawan Karki

Another Monday! It's a bright day here in Oxford (quite contrary to the usual gloomy drizzling weather), and after snoozing my alarm twice already, I finally wake up to the sound of closing door downstairs. My landlady and her son have already left for school as it is 8 am already. Generally, I wake up earlier, but yesterday was a long day. I visited our rival school (though a visiting student, I am in full Oxford spirit by now), Cambridge University. It was a wonderful day as I had chance to visit few of the most reputed colleges in the world including King's College and Trinity College of Cambridge with some other elective students from various part of the world. The architectural brilliance of the University and the overall magnificence left me in an awe. It was quite late when I got back to my room. So, it was a big battle trying to wake up on time. Nevertheless, I force myself, excited about the upcoming day!

I quickly run to the bathroom and make it down to the kitchen at 8:15. I can't afford to try my amazing cooking skills right now as I am already late for hospital, so I just stuff myself with scrambled eggs, half a toast and rush out. At 9, I am supposed to join a new firm today as I have already completed four weeks of postings in Acute General Medicine. Frankly, I am not that excited. I had already made friends in my old firm so I feel a little nervous about meeting new people again.

It's a 30 min walk from Old Marston to JR hospital with a small hill just before the hospital (I find it funny that this slope of land is called a hill judging by our standards). I enjoy the morning walks to hospital, but unlike other days, I am quite late to catch the bus today. It is one of those days when I regret getting a bus-card instead of a bicycle which is quite a trend here in Oxford. To add fuel to the fire, my friend from Ghana waves to me as he passes by on a cycle. I hurry to the bus-stop. Another reason I love the UK is because of their transportation system. There is no concept of "late buses." With a little jog I manage to catch the stagecoach 704 bus to the JR hospital. What a relief! I sit in the back seat and as per the new social trend where everyone stares at their phone inside public transport, I immediately take out my phone and smile as my phone automatically connects to the wifi in the bus. Back home, it's already 2:00 pm and my phone vibrates displaying a message "wake-up sleepy head" on whatsapp. As I reply to the message and start talking to my near ones, I reach the hospital at 8:55 and rush to the doctor's mess of JR hospital where I am supposed to meet doctors from my new firm.

There is my brand-new firm with smiling faces and as I introduce myself, they seem pretty happy to see me. My FY1 doctor hands me a copy of our round list, and we quickly start our "post night take round" from EAU (Emergency Assessment Unit). Unlike the prepaid system of our hospitals in Nepal (where patient get investigations done and treatment only after paying in cash), the impressive and amazing NHS (National Health System) of UK has provided every British citizen with the privilege of free hospital care. Any patient who visits emergency either has to be managed promptly and discharged within 4hrs of the arrival or they are referred to EAU and other surgical or cardiac care units depending upon the nature of the disease. As I am a part of the EAU team right now, it is my job to assess the patient and send them to ward if they need admission, discharge them if they don't need any intervention or keep them in observation for some time before they are medically fit to go home. It is a busy "post night take round" that day. Since our firm was on take last night (take is just simpler word for taking patients who visit EAU on a particular day), we are seeing patients with our consultant before they get discharged or get admitted to the wards. So there I am with my firm which includes a consultant, registrar, house-officers, foundation doctors, 4th year medical students and a visiting student. As we go from one patient to next, we come across a very interesting case. It is not just an interesting from a medical standpoint, but it just happens that the patient and his family members are from Nepal. Due to a language barrier, the doctor who saw him last night was not able to get a good history. Unlike the other patients who have all their medical information in the database of Electronic Patient Record (EPR), this guy came to UK only one month back and had no medical records apart from a single sheet of A4 size paper given by his doctor in Nepal. The consultant in my firm becomes happy immediately when I start to talk to this tricky patient and elicit a proper history and past medical information. As I talk to the patient and the family, I come to know that the patient is a retired Gurkha soldier of British

army who had been living in Nepal for past 20 years since retirement and only recently decided to come to the UK. He was not feeling well since sometime back and this feeling exaggerated after coming to UK. The patient is diagnosed as a case of congestive cardiac failure with hypertension. I am also pleased to see that in spite of being a retired Gurkha soldier, he is being given the same privileges as a British citizen. Had he still been in Nepal, everything would have cost money—from a syringe to expensive investigations. I am really happy to see that he did not have to go through all that. The patient and his family are also delighted to have a doctor to speak to, in their mother tongue.

It is 1 pm and I suddenly meet Francesca (one of the many visiting students there, who was from Italy and was doing her electives in cardiology) in the major zone of ER. She reminds me that we have a plan that night, to visit The Port Mahon, one of the pubs in Oxford which has a group that plays the ukulele. I am really looking forward to it!

By the time we finish our rounds, it is already 1:30. Our consultant decides to take us out for coffee, and that comes as bliss as I longed for a break. It is a bright and beautiful day and we enjoy our coffee and lunch in the sun before going back in. The members of my team tell me that they are proud of me and I too feel like I did something worthwhile! We go back in and I try to be useful by drawing blood and sending the investigations. At 4 pm, I finish my work and walk back to my home in Old Marston. Skinny is already there at the door waiting for someone to open the door for him. (Skinny is my landlady's cat who is not skinny at all, as most of the cats in UK.)

After a long tiring and day, I walk up to my room, tired and hungry. To my surprise, I find the remaining half of my morning toast waiting. I sit down and enjoy the half toast.

Pawan Karki
MBBS
Maharajgunj Medical Campus

Everest Base Camp Trek and Everest ER

Yogesh Subedi

Everest ER Experience in 2016, for me, was a lifetime experience. After completing my Nepalese Diploma in Mountain Medicine (DiMM) course in 2015, I dreamt of working in the Everest region and it was a dream come true. I had been to high altitude before, for different treks and during the Diploma itself but this was going to be a whole new experience. I was supposed to hike up to the base camp with WMS CME Trek group led by Dr. Luanne Freer, who is also the mother of EverestER. After reaching the Everest Base camp (EBC) we were to stay at the Everest ER clinic till the end of Climbing Season for total duration of 2 months.

Everest ER is an emergency room established by Dr. Luanne Freer in the year 2003 after realizing a dire need of medical facility for climbers and Sherpas at the EBC. It is the medical facility located at highest altitude (5365m). The year 2016 was the 14th season during which the Everest ER clinic was providing health care to both climbers and their local team members at the Everest Base Camp. At the start of the season, we trekked with the Wilderness Medical Society (WMS) as part of their mountain medicine CME program. As always, Everest ER team was included as part of the group. In 2016, ER team consisted of Dr. Natasha (Tash) Burley from Scotland, Dr. Tatiana Havryliuk from the USA, Mr. Lakpa Norbu Sherpa from Nepal and me in addition to Dr. Luanne. HRA hired Peak Promotions Trek and Expeditions to look after fooding and accommodation for the team. The Everest ER doctors delivered some of the lectures to the CME group about the high altitude.

The trek followed the safe and recommended ascent profile. Phakding (1 night)- Namche Bazaar (3 nights)- Tengboche (1 night)- Pheriche (3 nights)- Lobuche (1 night) – Gorakshap (1 night) and finally EBC. We visited the Lukla and Khunde hospitals on arrival to establish contact with the local doctors. We also visited the Namche dental clinic, which was being rebuilt after sustaining significant earthquake damage. We would later on refer our patients there. At Pheriche, we met up with the HRA doctors working there that season. It was very important to establish some common guide-

lines for treating patients, the role of the clinics and to work on a system for referral of patients between clinics.

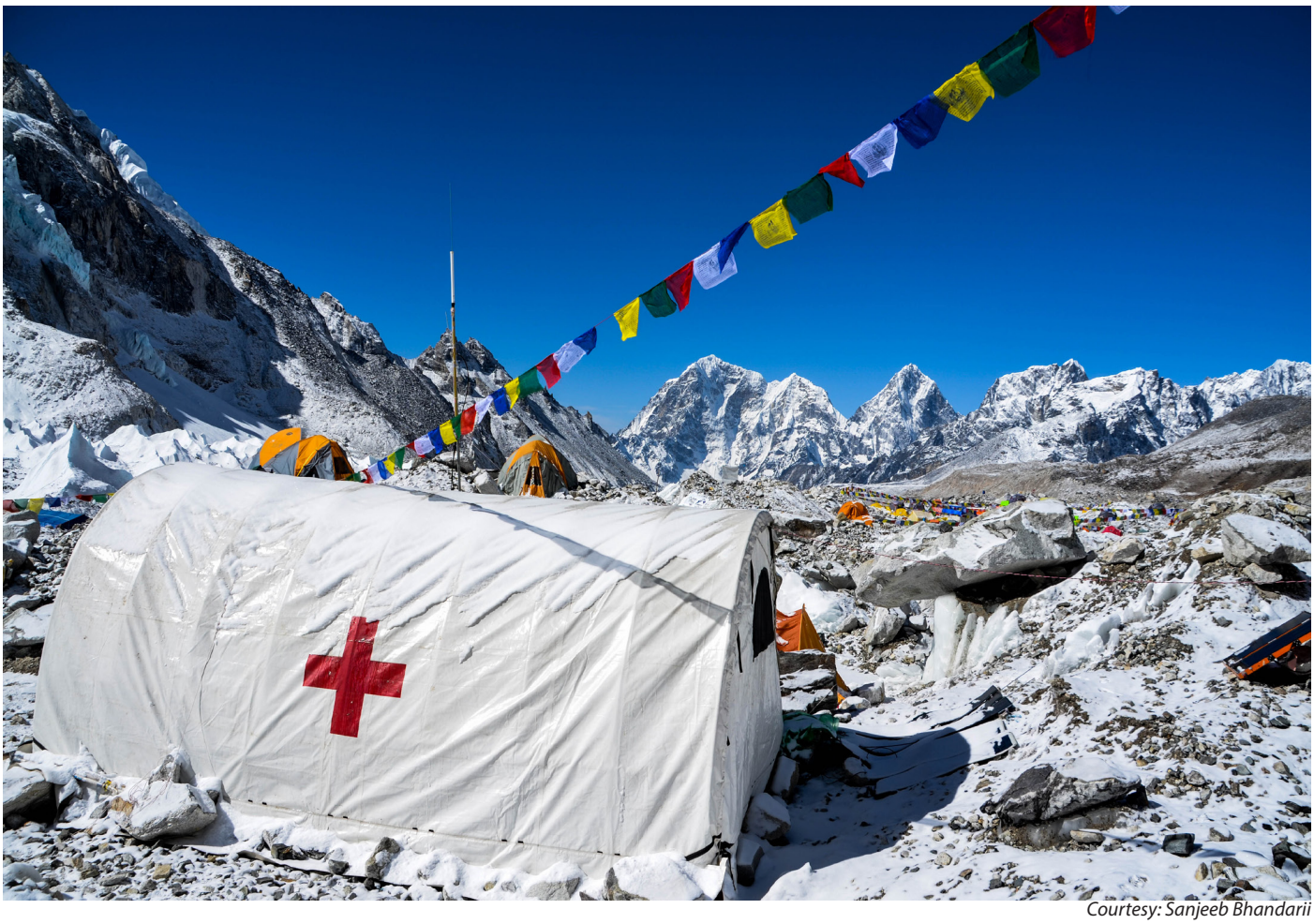
Last two climbing seasons were not good and the clinics were closed early in the season due to avalanche on the Khumbu Icefall in 2014 which killed 16 Sherpas. Another avalanche triggered by the earthquake that hit Nepal in 2015 hit the Everest Base Camp and even demolished the EverestER clinic tent, killing 19 people in the Base Camp. As excited as I was about the journey, I was scared at the same time. I wished for a complete and successful season. We started our EBC trek on 23rd of March and reached EBC on the 2nd of April. As soon as we reached the base camp, tent was set up and we were on our duty.

Clinic hour would run from 9 am to 5 pm with lunch break from 12 to 1:30 pm but we were always on call. During the season in 2016, we saw a total of 288 patients with different complaints. This does not include follow-ups. We only counted visit by a single individual more than once if they presented with a new complaint. Of these visits, 189(65%) were by Nepalese and 99 (35%) were by non-Nepalese people. These non-Nepalese people were mainly climbers, with only a handful of trekkers. Fifty (17%) patients were recommended for evacuation, some by foot, but most by helicopter, as soon as possible. The evacuation was generally arranged by the climbing team with whom they were travelling.

Everest ER was a real learning opportunity for me as I could practically use my knowledge and skills learned during the DiMM course. Major bulk of cases were altitude related so it was a very good platform to learn about altitude related problems. Few interesting cases that are worth mentioning are follows.

CASE 1

Twenty-nine-year old/ Sherpa with the history of gastritis, presented with complain of acute epigastric pain. Pain started around 5 am on the first climbing day, half way up in the Ice fall, he decided to return and came to the clinic at 8 am. On arrival heart rate was 123 bpm, blood pressure was 118/90 mm



Courtesy: Sanjeeb Bhandarii

of Hg and he gave history of brief tingling sensation of both arms with one episode of vomiting same morning. We gave him PPI and anti-emetics after which ECG was done which had ST-segment changes on lead V2,3 and 4. Medications were started: Aspirin, and Nitroglycerine were given and the patient was evacuated to Kathmandu on Helicopter. Thirty minutes after reaching Kathmandu he underwent cardiac catheterization and stent placement at Gangalal Heart Centre. A life saved.

CASE 2

Thirty-three-year-old female came with the history of blurred vision in the right eye. She was continuously laughing while washing clothes when it happened. Vision in her left eye was normal. We attended the call and with our diagnosis of Retinal hemorrhage, we planned her for evacuation even though we didn't see any bleeding during the opthalmoscopy. We did see clots in one of the Retinal arteries. We suggested her to arrange for medical evacuation and patient returned to Kathmandu the very next day. She went to two different opthalmologists once back in valley but the diagnosis was the same : Retinal hemorrhage.

Yogesh Subedi
MBBS
Maharajgunj Medical Campus

Weather at Thorung La

Prakash Kharel

Up through the mountains between Damodar Himal and Thorung peak, we climbed one of the highest passes in the world; Thorung-La (5416 m).

We started our trek from Chame(2500m) with fantastic weather and a view of The Annapurnas(II,III,IV), Gangapurna and Lamjung Himal on the way to Tilicho lake(4919 m). Eight friends from Institute of Medicine got amazed on seeing the captivating view of the Himalayas with glaciers melting down to the Marshayagdi river. Diamox, ORS, trekking pole and bag became our best friend for that week.

As Rocky Balboa says "Life ain't always sunshine", so is the weather at high altitude. The weather changed dramatically on the way to Thorung Phedi (4500 meters). Cloudy weather made the mercury to go down well below zero. We could feel the shivering cold as we reached our lodge. Thank god! It only started to rain after we reached the lodge in Thorung Phedi. The room which were given to us had no lights and just a single blanket. Thus, we had no options but to sleep with our down jackets on.

It is said that crossing Thorung la after nine in the morning is an upheaval due to strong winds. The next day would be the last day of trek and the day when we finally cross the famous pass. We were to start the trek from an altitude of 4500 m to reach up to 5416 m and get down from there on. We woke up at four am to have time by our side. We had breakfast and wanted to start the trek at five. But, there was one big problem, the rain hadn't stopped. The amateur trekkers in us were in dilemma. Should we continue the trek in this weather or should we stop for one more day? Our opinions were divided. The indecisiveness increased the delay and to add fuel to the fire some of the foreigners staying in the same lodge decided to stay back and not ascend that day. In addition, one of accompanying trekking guide warned us about the weather prediction of heavy snowfall that day and with that the route would surely be slippery. The pass was recently hit by "HUD-HUD" in 2013 which killed more than 80 trekkers on the trail and a few went missing. We were afraid about the prospect of weather getting worse and no one among us wanted to put our life at risk.

It took us an hour before we were able to come to a decision and finally decided to continue the ascent despite the rain. It was six by then. As we went higher up, we could feel the environment getting colder by the minute, which, as we would realize in about an hour, was telltale sign of coming snowstorm. Indeed, there it was,

just an hour after the start when the snow started to pour down making the route slippery and visibility was limited to less than 10 meters. There was yet another surprise from the Mother Nature, the wind. We could feel the bone freezing cold at each and every part of our body. Yet, we had no option but to continue on our way up. Adding to the trouble we already had, we could see no signs that would tell us how far we were from pass. One who has been to trails must know that it is energizing to hear words like the destination is just a few kilometers away or just an hour away. We met very few people on the way and we had no idea when we would reach the top.

Despite everything, we continued, facing the cold wind, snow and the slipperiness with almost zero visibility of what's around us. I guess no one in our group felt the slightest bit of thirst on our way and no one had courage to stand for more than few minutes to take a bite of snickers.
Ultimately, the joyful moment arrived when we saw the prayer flags dancing in the cold wind. That was the happiest moment of life, to reach the place you always wanted to. Despite reaching the crown jewel of the whole trek, we could not stand the weather for more than 15 minutes. We were only able to take few pictures and had to descend to beautiful Mustang.

Weather on the way to Thorung-La made the trek more difficult yet memorable. The trek of Annapurna Circuit has been the best one I have been to so far. I am looking forward to the revisiting Thorung-La again.

Prakash Kharel
Final Year Medical Student
Maharajgunj Medical Campus

My First Trip to The Himalayas

Sagar Pokharel

I was anxious and at the same time I was excited. I got a chance to accompany Dr. Ken Zaffren for Annapurna Base Camp trek. It was essentially a recreational trek with no specific research or medical camps. We began our journey on 9th November from Kathmandu and after spending a night in Pokhara, proper trek started the next day from Phedi, 20 km west of Pokhara. We reached Pothana on day one and stayed at a local tea house. The fourth day we reached Deurali via Landruk, Chomrong and Bamboo and on the 14th we reached Macchapuchre Base camp (MBC). The next day we reached Annapurna base camp, our final destination. The eleven days were a perfect gateway from mundane routine of my internship. We descended back the same route, however, taking less time than what it took us to ascend. The route is very safe one with the perfect fragrance of hospitality in all the tea houses we stayed in. Finally, we took flight back to Kathmandu on 19th November.

I had great interaction and learned quiet a lot from an expert working in field of High Altitude Medicine in Himalayas for about four decades. The evening sessions prior to dinner were the most fruitful; ranging from case discussion to use of acetazolamide in High altitude. I learned more about the aspects of high altitude illness (HAPE/HACE) and their management strategies. We also encountered people with rapid ascent profile and some who suffered from Altitude related illnesses during our stay at tea houses.

I literally fell in love with the Himalayas. At the base camp, you feel like sitting atop on the throne of the mountain god as Prof Ken rightly said. The landscape, the stairs, the springs, the sunrise, sunset and the majestic mountains were all spectacular. Everyone was tired climbing the uncountable steps up, but the climb is worth the view. And you can't help but ponder: someone did build those stony steps.

Nature is awesome in the way it is. Human manipulation like building roadways, crushing the hills and cutting of trees makes the landscape look unpleasant. Nevertheless, it would be an upheaval job for the people living in such extreme of places to survive without roadways which ultimately has direct impact on health care delivery and education of the people. Yet, no trekker wishes to see a taxi

running on his trekking route. So, stakeholders need to take that into account while setting the trek route and expanding the road services.

I also realized that there is no awareness campaign or provision for distribution of basic prophylactic medication to trekkers from Annapurna Conservation Area Project. We could only see some faded boards at Deurali and above MBC with some messages to the trekkers and that was possible thanks to efforts of Himalayan Rescue Association (HRA). We met many Nepali trekkers with ascent profile of more than 1500 m per day and having altitude related problems. People usually take garlic as prophylaxis, the usefulness of which is not scientifically proven. So, government and ACAP should start awareness programs, setting up temporary camps during peak seasons and distributing required prophylaxis to the trekkers.

To put it in a nutshell, those eleven days were indeed a great opportunity provided to me by MMSN academic team and Dr. Zaffren. The trek made me much more curious to learn more about high altitude medicine. The trek energized me and helped me discover my love for mountains and motivated me to work further in the field of mountain medicine.

Sagar Pokharel
MBBS
Maharajgunj Medical Campus

My Journey with MMSN

Bhupesh Khadka

It is natural for lot of Nepalese to get attracted by the mountains. During high school days, hiking around the outskirts of Kathmandu valley was a favorite sport that we all enjoyed. I was able to take it to the next level in the year 2000 when I hiked for five long days from Birethanti to Muktinath via Ghorepani, Tatopani and Tukuche. In 2002, I made another trip of about five to six days to Gosainkunda from Sundarijal. It was those treks which exposed me to higher altitudes of above 3000 meters and gave me a feel for thin air and aroused my interest in altitude medicine.

Around early 2004, doctors mainly working at Patan Hospital, few of whom were graduates from MBBS 16th batch of Institute of Medicine (IOM), had just returned from a trip to Everest Base Camp after conducting a study on Sherpa porters about the effect of acetazolamide to prevent Acute Mountain sickness (AMS). This became a stepping stone in the formation of Mountain Medicine Society of Nepal (MMSN).

Professor Buddha Basnyat pioneered MMSN with help of several IOM graduates and the then students along with others working at Patan Hospital. It goes without saying the instrumental roles played by Dr. Pritam Neupane, Dr. Sanjay Yadav from MBBS 16th batch, Dr. Ashish Maskey, Dr. Anil Pandit from Patan Hospital, Dr. Ramesh Subedi from MBBS 19th batch, Dr. Prajan Subedi, Dr. Prajwol Pant, Dr. Devish Pyakurel from MBBS 20th Batch and Dr. Mati Ram Pun from MBBS 22nd Batch. A lot more members, who were in medical school, got involved in different activities of MMSN.

MMSN's objective was mainly two pronged. First, was to form a platform for like-minded medical professionals in promoting and organizing research/academic activities in the field of Altitude medicine and physiology. Second, was to partner with local and international organizations in delivering medical care to treat and prevent health conditions related to high altitude. MMSN promptly started with Journal Club where all members would get together to discuss about articles regarding altitude medicine. These sessions, moderated by Professor Basnyat himself, were intellectually stimulating. It gave opportunities to medical professionals to develop critical thinking and became catalyst for future research projects.

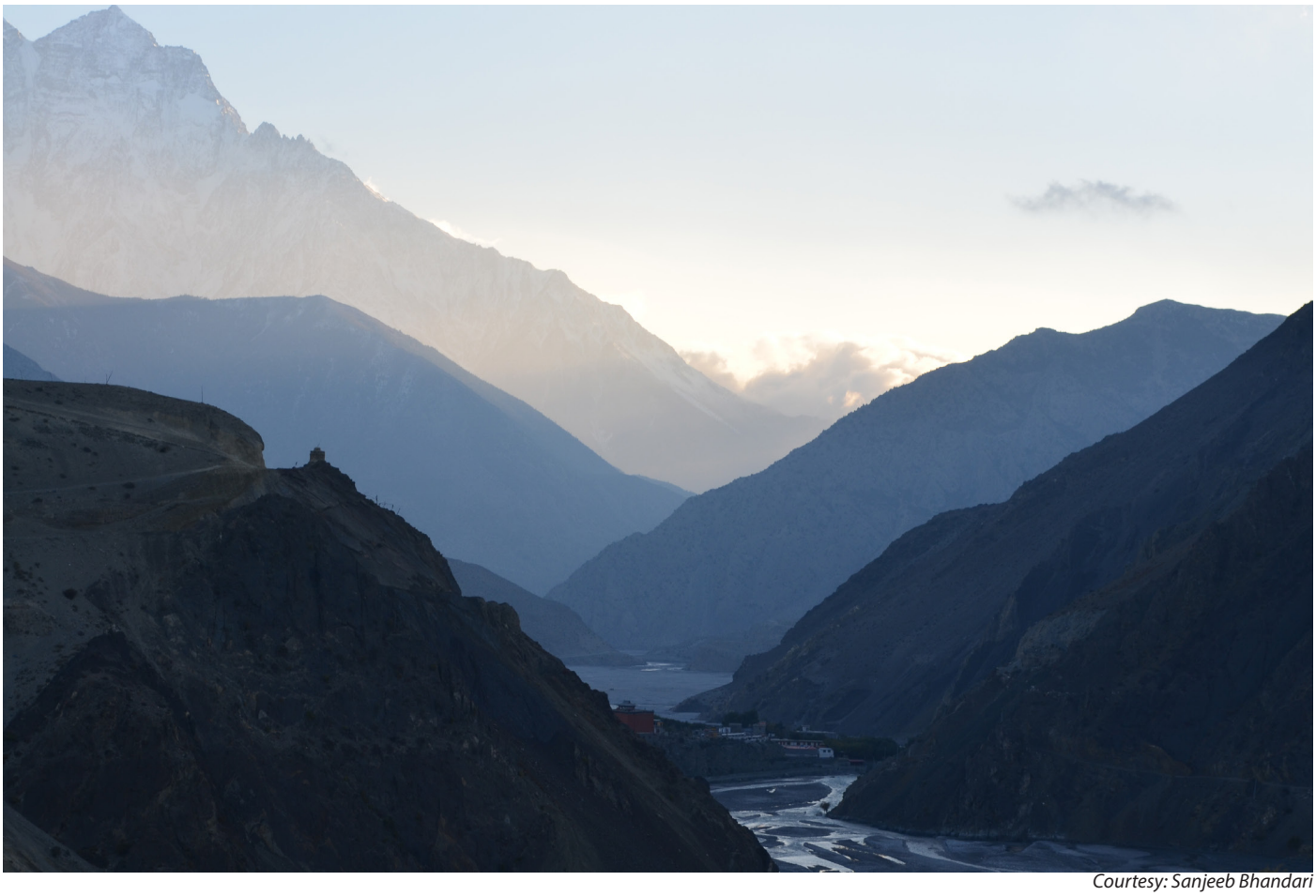
The summer of 2004 was eventful in lot of ways. MMSN had just come into being and several programs were organized. First of its events, was a day long workshop on "High Altitude Medicine" on

July 17, 2004. Scientific Papers were presented and discussed by different presenters. On August 9, 2004, A conference on "Mountain Medicine: The South Asian Experience" was organized by B.P. Koirala India-Nepal Foundation in association with MMSN and Himalayan Rescue Association Nepal (HRAN). This was the first and one of a kind conference, where experts from different countries in South Asia attended and shared their experiences about high altitude and wilderness medicine.

HRAN has been a great partner to MMSN over the years. Providing Medical care to people who suffer from illness related to high altitude is one of the main objectives of HRAN. HRAN sets up medical camps at different locations in Nepal like Pheriche, Manang and Gosainkunda every year. At Gosainkunda, during Janaipurnima, lot of Nepalese flock to over 4000 meters in a day to pay homage to Lord Shiva. I was fortunate to be a part of the medical team of the Gosainkunda camp set up by HRAN in August, 2004 along with Dr. Ramesh Subedi and Dr. Matiram Pun. It was the first time when I had hands on experience to see and treat lot of patients with Acute Mountain Sickness and its complications. In the days since my trip to Gosainkunda, lot of young doctors have gone high up to various part of the country including Everest Base Camp, Gokyo, Kailash etc. on several of such camps to provide health service as well to conduct research in high altitude medicine.

Since its inception a little over a decade ago, MMSN has evolved and continues to evolve and flourish. The palpable enthusiasm of everyone involved has propelled MMSN to greater heights. It is humbling to see the advances made by MMSN to promote formal training and research in Altitude medicine. Finally, I would like to convey my best wishes to the executive body and all the members of MMSN.

Bhupesh Khadka
MD

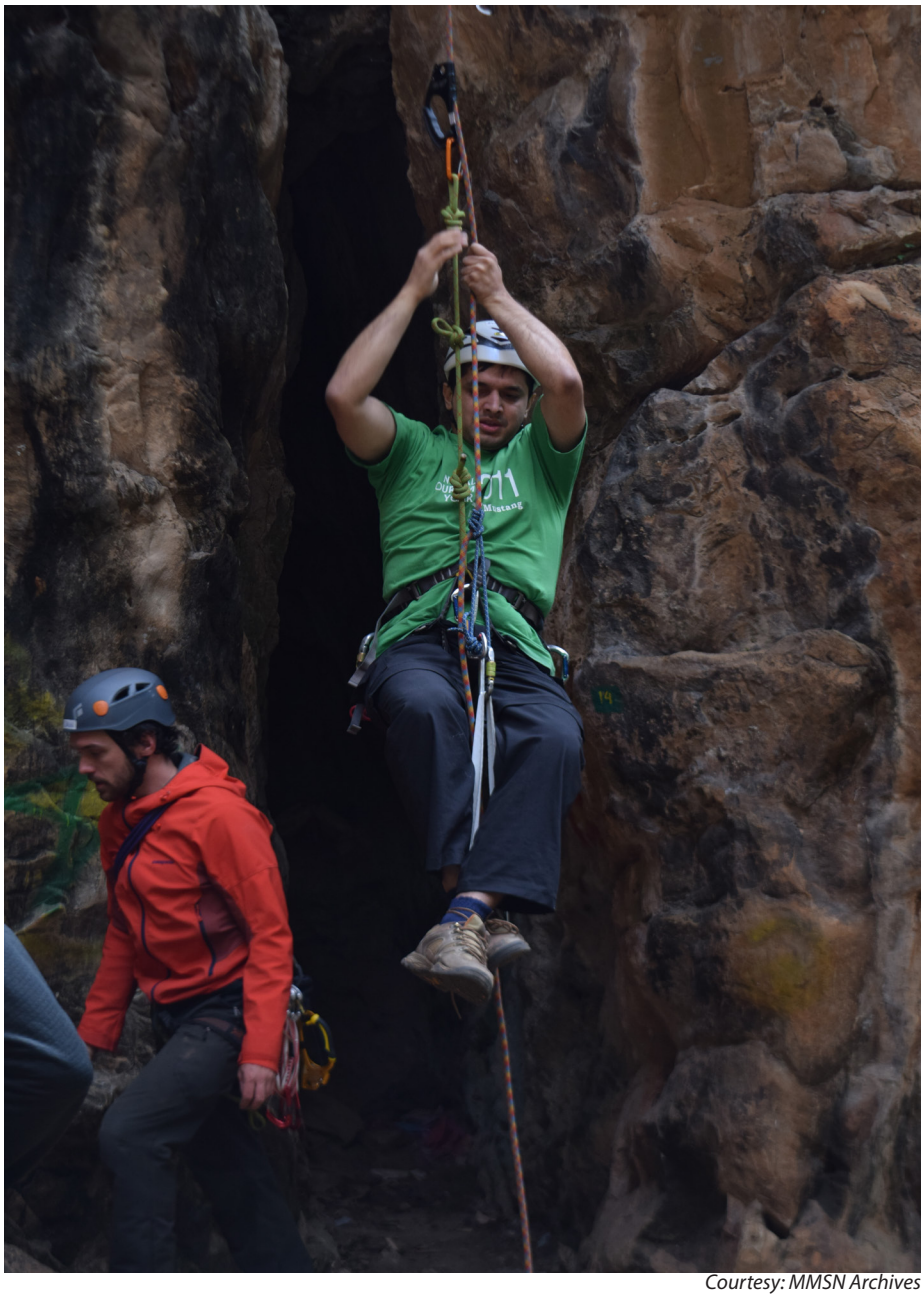


Courtesy: Sanjeeb Bhandari

News and Activities

The fourth iteration of the Diploma in Mountain Medicine course was conducted in Kathmandu and Khangla Glacier in Annapurna region in November of 2015.

Camp was set up in the premises of Gosainkunda Lake at 4380 m on the occasion of Janai Purnima festival in the month of August of 2014. Five doctors from MMSN participated: Dr. Santosh Baniya, Dr. Yogesh Subedi, Dr. Bidur Prasad Pandit, Dr. Utsav Joshi, Dr. Sagar Gyawali along with a medical student Mr. Suraj Shrestha.



Courtesy: MMSN Archives

In the 2016 climbing season, Dr. Yogesh Subedi volunteered in Everest ER, the highest health setup in the world.

The Annual Gosainkunda Health

Dr. Pawan Karki participated in an eight-week long placement in John Radcliffe Hospital, University of Oxford, UK, which was organized and coordinated by MMSN in September-October 2016.

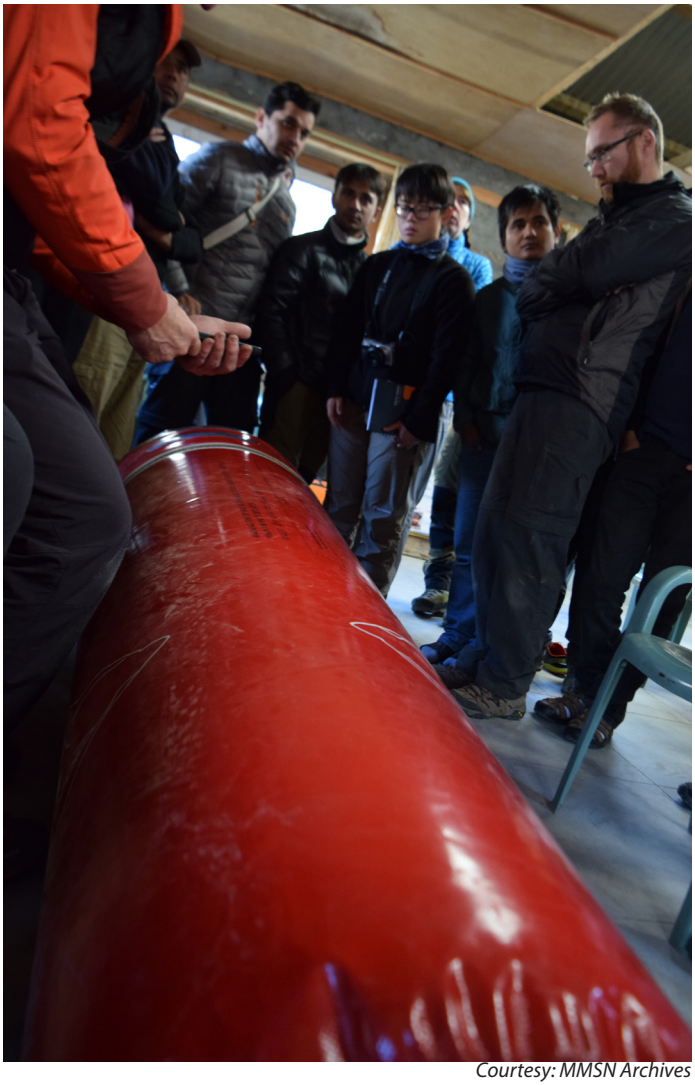
Training programs for high altitude porters was conducted by MMSN members at the premises of Himalayan Rescue Association Nepal and two other locations in two different occasions.

In October 2016, Dr. Shailesh Niroula accompanied Dr. Prajan Subedi and his team from University of British Columbia in a research project titled "Mechanisms of acute adaptation and evolution in the human physiological response to high-altitude: a scientific expedition to the Nepal Himalaya" in the Everest region.

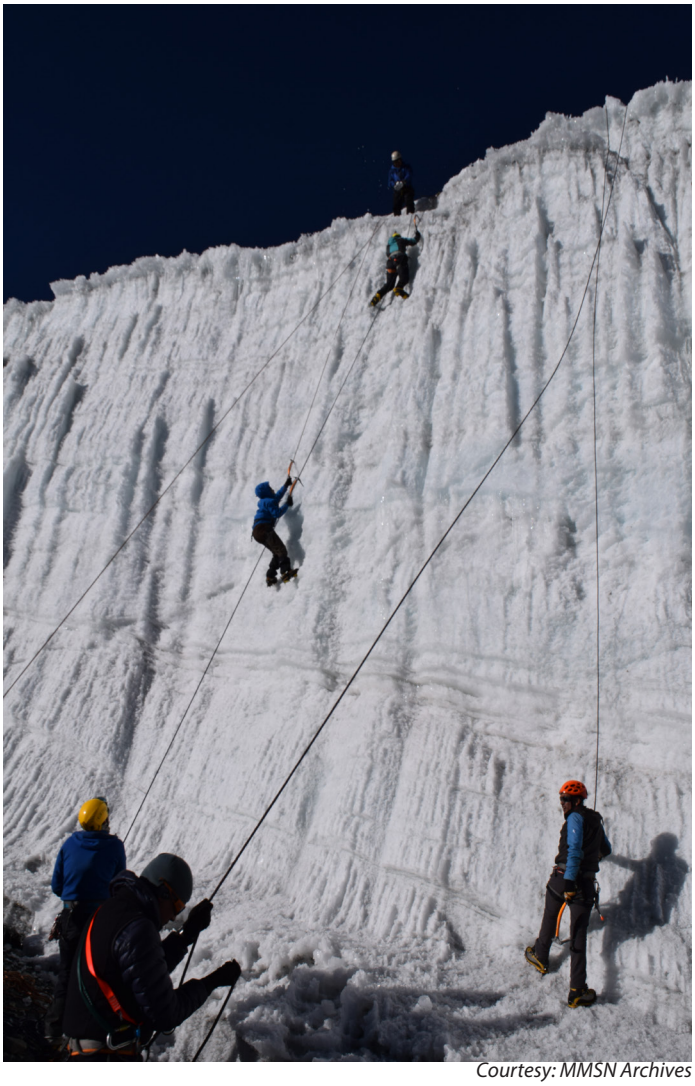
During November 2016, Dr. Sagar Pokhrel accompanied Prof. Ken Zaffren of Stanford University on a trek to Annapurna Base camp. Dr. Zaffren is also an Associate Medical Director of Himalayan Rescue Association of Nepal.

Talk programs with international speakers are being held at regular intervals. Dr. Charles Mize from the United States gave a talk on "Cardiac arrest in Trauma". Dr. Mize is the Director of Resuscitation and Director of Emergency Medicine education at Jigme Dorji Wangchuk National Referral Hospital in Thimpu, Bhutan and he was also formerly a emergency medicine teaching faculty at Yale University School of Medicine, New Haven, Connecticut.

"Climbing for fun", an MMSN



Courtesy: MMSN Archives



Courtesy: MMSN Archives

initiative to train the interested medics and medical students in the field of mountain and wilderness rescue medicine saw an overwhelming participation in the year 2016. We trained the interested ones in basic wall climbing, rock climbing, basic first aid, medical training and basic survival skills.

Journal Club presentations were conducted regularly with presentations from members interested in research activities.

During the year 2016, we saw a dramatic increase in MMSN membership holders, most of them being medical students not only from Kathmandu but from other places around Nepal.

In 2017, we will give continuity to our journal clubs, talk programs, outdoor programs for medics and bigger events like Diploma in Mountain Medicine.

Stay tuned and keep checking our web mmsn.org.np, MMSN Gmail group and MMSN Facebook group!!

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