MOUNTAIN MEDICINE SOCIETY OF NEPAL

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The twelfth edition of ISMM World Congress on Mountain Medicine was held in Kathmandu, Nepal in November 2018. Find the photo gallery on page 16.

EDITORIAL BOARD

Message from the President

Buddha Basnyat

A BIT OF HISTORY

At the Himalayan Rescue Association (HRA) we wrote this (below) almost 30 years ago, but the ideas expressed here are still very relevant today. There are some success stories in Nepal. HRA's work (now enhanced with the help of MMSN - Mountain Medicine Society of Nepal) has to rank as an important success story for preventing deaths at altitude in Nepal. This work has helped to keep our mountains safe and to safeguard tourism in the process. Happy reading.

INTRODUCTION

A few years ago most people who came to visit the Himalaya already had a lot of experience hiking in their home countries. These people needed to be warned of the subtle hazard of Acute Mountain Sickness (AMS), but in general, they were aware of mountain safety. This fact is no longer true, as many people start into the high mountains of Nepal with very little thought for the difficulties they might encounter. This pamphlet is intended to serve as a brief reminder of several important points you should think about before you go trekking.

THE TRAILS

The trekking trails in Nepal vary from wide, road-like avenues to narrow, slippery paths built over enormous drops. In many places, a fall from the trail would be fatal. One must pay attention at all times to where you are placing your feet. Be especially careful not to move while looking through the view finder of your camera. Sometimes your routes will become confusing and you may take a wrong path. If you are tired, as one often is at altitude or after a long day, there is a great temptation to try to climb up or down a steep hillside to regain the correct trail. Several people have died from a long fall while trying to do this and others have been painfully injured. Retrace your steps to find the correct path rather than moving cross-country. Never trek alone. If you have no friends available to trek with consider hiring a guide or porter to trek with you.

THE WEATHER

Nepal has the widest altitude range of any country on Earth, from 70 meters in the Terai to 8848 meters on the top of Everest. Each altitude will have its own weather problems. It is often difficult to plan for bitter cold winds and snow while walking past banana trees in the hot sun. In the main trekking seasons-Spring and Fall, the weather is often stable. Even the high passes may be free of snow and relatively easy to traverse at times. Those trekkers who encountered an easy day at altitude may spread the word that boots and warm clothing are not required. This is a mistake! Sudden storms can occur at any time, dumping one or two meter of snow on the passes. At that point, anyone with simple running shoes will not be able to proceed, and may even be stranded for a number of days.

If you trek in the winter, you must be prepared for cold and snow. Frostbite is a constant risk if one walks in snow at high altitude. If you trek in the monsoon you might face slippery trails and difficult river crossings.

You are heading into the world's highest mountain range. Be prepared for changes in temperature and weather!

FINAL PREPARATIONS

If your trekking route will go over 4000 meters, take a warm sleeping bag, boots adequate for snow, a warm jacket, and good quality sunglasses. If you are hiking with porters, make sure they have sunglasses, warm clothing and shoes if they are trekking over high passes. Since most trekking routes do not have medical care for most of their distance, bring an adequate first aid kit.

ALTITUDE

The Himalaya begins where other mountain ranges leave off. Everest Base Camp is at the foot of huge mountains, yet it is 1000 meters higher than the highest point in Europe. Your body can adjust to these altitudes, but only if given enough time. Being in a hurry in the mountains of Nepal can be deadly! It also seems that excessive exertion at altitude (e.g. carrying a heavy pack) may predispose some people to altitude illness. So it may be advisable to carry a light pack and use a porter (they are not expensive).

Acclimatization is the word used to describe the adjustments your body makes as it ascends. You should adjust your schedule so that you average no more than 300 meters per day of ascent above 3000 meters.

If you fail to allow time for acclimatization, you may develop symptoms of AMS. This may be mild enough to go away with a day's rest, or if ignored may lead to death. All that is required to ensure a safe trek is basic awareness of AMS, and a willingness to rest or descend if you develop symptoms.

RECOGNIZING ACUTE MOUNTAIN SICKNESS

Acute Mountain Sickness (AMS) can develop at any altitude over 2000 meters. The early symptoms are headache, extreme fatigue, and loss of appetite. Some people become breathless at rest. AMS is the result of fluid accumulating in parts of the body where it does not belong: in the brain, in the lungs, or both. When mild symptoms develop, it is a signal that you must stay at that altitude until symptoms have gone away. Never ascend with any symptoms of AMS! Usually within one or two days you will feel well and can continue your trek.

If you are resting at the same altitude and your symptoms are becoming worse, then it is necessary to descend. Worsening symptoms of AMS include increasing tiredness, severe headache, vomiting and loss of coordination. These are signs of High Altitude Cerebral Edema or HACE. HACE can lead to unconsciousness and death within 12 hours if progressive symptoms are ignored. Increasing shortness of breath, cough and

tiredness are signs of High Altitude Pulmonary Edema or HAPE. HAPE can also be rapidly fatal if ignored. For both HACE & HAPE, descent is mandatory.

A person suffering from AMS may not have clear thinking and may have to be forced to descend. Even if someone is willing to descend they should never be allowed to descend alone. Keep descending until the person shows some sign of improvement, usually after 300-500 meters of descent. Even if the diagnosis is not clear, but AMS is a possibility, you should descend. You can always re-ascend when the person feels better.

It is best to start descending while the person who is ill can still walk. If the person can no longer walk, a yak or horse might be of help. Porters can often be found to carry a sick person down. Do not wait for a helicopter. If you choose to administer oxygen or medications, do not delay the descent to watch for improvement.

In summary, if you are not doing well at altitude, most likely you have some mild symptoms of AMS. Rest at the same altitude until you feel well. If you are getting worse at the same altitude, descend to at least the last point at which you felt well. If you are not sure of the diagnosis, err on the side of being cautious. Remember severe altitude sickness is entirely preventable if you follow these guidelines.

Buddha Basnyat,

President, MMSN.

Genetic Adaptations to High-Altitude Hypoxia and Implications for MMSN Members

Cynthia M. Beall

(This article is based on the presentation delivered to Mountain Medicine Society of Nepal's Journal Club on August 5, 2019)

The feats of Sherpas and Tibetans residing in districts along Nepal's northern border with the Tibetan Plateau inspire us to discover the biology enabling them to thrive and excel at high altitudes. These two ethnic groups in Nepal gave the world some initial hints that indigenous inhabitants of each of the three major high plateaus – Tibetan, Andean, and East African – have distinctive biological adaptations to the stress of high-altitude hypoxia. Howard Somervell, a member of the 1924 British Mount Everest Expedition, reported in 1925 that the Sherpas on their team had lower hemoglobin concentrations than the Europeans making them less likely to become ill. Independently and much later, a 1981 publication in the late 1970s and early 1980s described unelevated hemoglobin concentration in the sample of Sherpas and Tibetans with increasing altitude which was contrary to expectations based on evidence from Andean highlanders and visitors; both groups show a robust increase in hemoglobin concentration in proportion to the altitude. Several studies thereafter were sought to confirm and understand the underlying physiology. Their results have important implications in fields like evolutionary biology, anthropology, physiology, public health, and medical practice.

All residents at a given altitude breathe air with the same partial pressure of oxygen which decreases with increasing altitude. For example, in Lukla (2900m), a lungful of air contains just 71% of the number of oxygen molecules in a lungful of air at sea-level. In LoManthang (3800 m), that falls to 64% and in Everest Base Camp (5400 m), that same lungful contains just 53%. Despite the lower oxygen availability, oxygen requirements remain the same among highlanders or temporarily elevated among newly arrived lowlanders. Environmentally imposed hypoxia ensues changes in systems concerned with the attachment, transportation, and delivery of oxygen that offset the stress and helps one to meet the physiological oxygen requirements. When these changes improve function, they are called adaptations. Adaptations occur across a range of timescales and degrees of reversibility. Some acclimatizations, such as an increase in breathing and heart rate are immediate responses that occur quickly and reversibly as occurs in acutely exposed tourists, pilgrims, and climbers while others, such as an increase in hemoglobin concentration, may take a week or more. Acclimatization fade to the pre-exposure baseline after returning to low altitude.

Developmental adaptations occur in cases of immature individuals with continuous exposure that results in a distinctive adult feature. Brutsaert described a clear example; enlargement of lung volume in children of both European and Andean descent growing up at high altitudes as compared with their counterparts growing up at low altitudes in Peru and Bolivia. Brutsaert also found that children of Andean descent showed a larger lung volume regardless of altitude which indicates that genetic heritage also has an influential role. Genetic adaptations have a heritable basis that helps to improve function and reproduction in a stressful environment. They occur as a result of evolution by natural selection across millennia that increase the allele frequencies of genetic variants underlying favorable biological traits. Although demonstrating the heritable

basis of apparently adaptive and heritable traits has been challenging, three publications in 2010 reported genotypes associated with the unelevated hemoglobin concentration of Tibetans and Sherpas. They illustrate genetic adaptation measured as uniquely high frequencies of alleles at certain loci in the oxygen homeostasis pathways that associate with a dampened hemoglobin response to high-altitude hypoxia. Two salient loci are EGLN1 and EPAS1 (pronounced egg-lin-one and e-pass-one). The Genetics Home Reference Site describes these two loci as follows:

"The EGLN1 gene, often known as PHD2, provides instructions for making an enzyme called prolyl hydroxylase domain 2 (PHD2). The PHD2 enzyme interacts with a protein called hypoxia-inducible factor 2-alpha (HIF-2α). This protein is one part (subunit) of a larger HIF protein complex that plays a critical role in the body's ability to adapt to changing oxygen levels. HIF controls several important genes involved in cell division, the formation of new blood vessels, and the production of red blood cells. It is the major regulator of a hormone called erythropoietin, which controls red blood cell production." (https://ghr.nlm.nih.gov/gene/EGLN1, published September 3, 2019; last accessed September 8, 2019).

So far, only Sherpas and Tibetans have been reported to have high frequencies of the variant alleles at these two loci and closely related East Asian populations at a lower frequency. The most common EGLN1 allele among Tibetans is associated with dampened hemoglobin concentrations among Tibetan men at high altitudes, although generally not among Tibetan women. The most common EPAS1 allele among Tibetans associates consistently with dampened hemoglobin response among Tibetan and Sherpa men and women. A sample of people at a given altitude will contain mix genotypes including homozygotes for the most common Tibetan allele, heterozygotes, and homozygotes for the ancestral less common allele. Depending on other features of the sample, the homozygotes for the most common Tibetan allele have ~ 0.6 to 3.0 gm/dL lower hemoglobin concentration than homozygotes for the least common allele. Tibetan men with unelevated hemoglobin concentration have higher exercise capacity than those with elevated levels. Tibetan women with unelevated hemoglobin concentrations have a higher probability of successful pregnancy outcomes. Thus, the unelevated hemoglobin concentration of Sherpas and Tibetans having a heritable basis and improving the function and reproduction at high altitude suggests that it is a genetic adaptation to high-altitude hypoxia.

A nuanced understanding of the context of these genotypes and hemoglobin concentrations is important for medicine and public health in Nepal. A phenotype – an observable biological characteristic – results from interactions of genotype, individuals' life history, and the environment. A genotype does not guarantee a particular phenotype, although it may influence the probability of the phenotype. EPAS1 genotypes account for about two percent of the variation in hemoglobin concentration in a sample of Tibetans or Sherpas. Sex, age, body mass index, pregnancy, iron, and infectious status also influence hemoglobin concentration. Women and thinner people have lower hemoglobin values than men and heavier people, for instance. Petousi and Robbins reported that hemoglobin concentrations of Tibetans residing at low altitudes in the UK show the effects of genotype: those with the common EPAS1 allele have lower hemoglobin concentrations than those with the alternative allele.

The multiple contributors to within-population variation in hemoglobin concentration complicate the use of a simple cut-off for anemia (pathologically low hemoglobin concentration) among Sherpas and Tibetans. The WHO publication entitled "Iron Deficiency Anaemia Assessment, Prevention, and Control; A guide for program managers" published in 2001 (https://www.who.int/nutrition/publications/en/ida_assessment_prevention_control.pdf, last accessed September 8, 2019) presents adjustment of hemoglobin levels according to the altitude of residence. The sources for the altitude adjustments were studies done on Andean highlanders; who show a robust hemoglobin increase with increasing altitude. Table 6 of that publication shows that hemoglobin concentrations below 12 gm/dL among women and 13 gm/dL among men indicate anemia. Annex 3 of the publication provides an altitude correction factor that raises the threshold to 14.7 gm/dL and 15.7 gm/dL at 3500m. This author's unpublished data show that applying the WHO recommended altitude correction factor to a sample of iron-sufficient Tibetans residing at 4000m increases the prevalence of 'anemia' to 79% and 85% among men and women, respectively. The prevalence is many times higher than the 5% and 12% prevalence among men and women if applying the generic WHO threshold for anemia. The WHO is currently revising the criteria for diagnosing anemia. At the moment, we do not know the appropriate threshold values to use. We need research to understand the relationship between EPAS1 and EGLN1 genotype, altitude, iron status and hemoglobin concentration among Sherpas and Tibetans. MMSN members interested in research having direct relevance to public health could conduct such a project. And those interested in medical practice will most likely use additional indicators of iron status and anemia when possible and continue to pay the closest attention to known risk factors for anemia at all altitudes, independent of genotypes.

Cynthia M Beall, Ph.D.

Case Western Reserve University

Anthropology Department

Cleveland, OH 44106 USA

Cmb2@case.edu

An Interesting Case in Machermo

Prakash Kharel

It was my first day working as a medical doctor in Machermo Rescue Post run by the International Porters Protection Group (IPPG). My colleague Dr. Liz was getting me prepped for my stay, we were discussing various cases she had witnessed. We saw an interesting case that day which I remember of a 76-year-old Sherpa who visited our center for chronic pain of his knee joint.

According to the locals, he used to visit the clinic every season to take some medicines. During one such visit, Dr.Liz noticed some festering wounds on the dorsum of his left hand. While she was dressing the wound, she noticed that the old man's little finger was amputated and one of his fingers deformed. As she was describing the case to me, my mind pointed towards the diagnosis - leprosy. We decided to get a thorough history when he would come back later for his medicines.

When I asked him to show me his fingers

The old man came for a follow-up the next day. He gifted us a bag of potatoes that he had grown in his field. All of that was a lovely gesture but unfortunately, he came all alone. He spoke only Sherpa language and no one in our camp could understand a single word. Our lodge owners weren't present there to translate his language for us. Therefore we could not ask about the history of his wound and its progression. We dressed his wound again and decided to visit his village Naah which was a 2-hour walk from Machermo.

Kancha, manager of IPPG post, and I set off for Naah one day. We met the old guy's nephew on our way who was a Lama - a Sherpa priest. He guided us to the old guy's house and also translated Sherpa language to Nepali for us. His house seemed like a yak shed; it was a small one-room house that wasn't cleaned for years. He earned his living by growing potatoes and it made a large proportion of his daily meal.

When I asked a thorough history about how he ended up with such a grievous wound, he couldn't recall the exact time when he lost his fingers. The family believed it to be caused by some mysterious power of a highland snake for which rituals were performed by his family. On examination, he had decreased sensation over his wounded hand compared to the other. Clawing deformity of fingers was present and his wrist was radially deviated. Nodules were absent and nerve thickening was palpable. I asked him to come over to our clinic for regular dressing.

Before leaving, I described the case and probable complications to the old man. I told him that it seemed like leprosy and he should visit the District Hospital as soon as possible. The old guy seemed reluctant to leave Khumbu valley 'just' to seek medical service. I counseled

The old man's house in Naah

that the disease was curable and no mysterious force was behind it. As the old guy was not in good terms with his sons and had no one to take care of, his nephew agreed to take him to Khunde for a thorough clinical investigation.

During my medical school, I had come across two cases of Leprosy but none presented with such classical findings as this old man did. Though we were unable to perform the confirmatory tests, the history that he provided and the clinical findings he presented, all pointed the diagnosis towards leprosy. Unfortunately, I couldn't follow up on the case. After our visit to the old man's house, he stopped coming for his medications and we couldn't revisit Naah either. All I wish for today is the old man's good health.

Prakash Kharel,

MBBS, IOM

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MMSN has Changed the Way I Travel

Rajesh Sharma

Traveling to the Himalayas has become a popular escapade for many youngsters of Nepal in recent years. And so has been for me and my friends. My journey to the mountains started after I joined medical school. Previously, I was mostly busy in my hectic school and college life and was too young to travel on my own. The first one was an unexpected journey to Poon Hill to enjoy the snow and the scenic beauty of the Himalayas. A year later, we had an exciting and thrilling venture to Annapurna Base Camp which was memorable in many ways. The recent one has been for Gosaikunda Health Camp during Janai Purnima as a volunteer medical student along with my seniors.

Poon Hill, 2016

Flashback to the first year of my medical school. Our month-long winter vacation was approaching and everyone, including me, from our class wanted to seek some adventure and thrill. After long planning and discussions, four of us finally agreed to travel to Pokhara for a few days and visit Bandipur on our way back. After we packed two sets of clothes in our college bag and wore our sports shoes, we were ready to explore Pokhara. Our plan changed all of a sudden during our stay in Pokhara after we heard about snowfall in Ghandruk. None of us had experienced snowfall before, so we pledged to trek to Ghandruk despite the weather condition and make a snowman. We took a bus to Kimche where we spent the first night. Ghandruk was a 2-hour trek from Kimche. The following morning, we reached Ghandruk but unfortunately, we couldn't see snow there. Our hotel owner suggested us to trek up to Poon Hill to witness snow which was an easy 2-day long route. Reminder: we were in our sports shoes carrying our college bag and wearing a simple jacket and sweater with no medicines. We witnessed snowfall, walked through snowy and steep trails for almost a whole day and the fact that it was on my birthday (Jan 30), made me happier. Even though it was a tough trekking route and we trekked during the winter season with very few preparations, the trek ended successfully. It was an unplanned trip yet it was very satisfying.

Trip to ABC, 2017

Classes resumed and we were back to our mundanely scheduled college life and we barely had vacations to go for any trip. Finally, when our first-year exams were about to end, we started making plans for our next adventure to the Himalayas. During this interval, we had come to know about MMSN and were already participating in its activities like wall and rock climbing, cycling and rafting. We started developing a better understanding of altitude sickness and basic trekking equipment. Winter vacation was approaching and we wanted to make most out of it. We bought some trekking equipment and borrowed some from seniors. We made proper arrangements for medications and snacks and were prepped with our trekking bag, sunglasses, sunscreen, light food, ORS, a water bottle, a few pairs of warm clothes, gloves and money. We had an eight-member team including two females from our batch. Pokhara was our first stop and we reached Kimche on the second day of our trip. We spent our third night in Chhomrong (2177m) where we started our prophylactic Acetazolamide (62.5mg) and soon the side effects started to kick in; we had tingling sensation in our hands and feet and had increased frequency of micturition. But we did not panic because this was a thoroughly discussed subject during our experience sharing program at MMSN. We spent the fourth night at an altitude of 2920m, fifth in Machhapuchre Base Camp (3700m). Our phones were dead due to cold so we couldn't capture the scenic beauty. On our way to ABC, we met our seniors from our college who marched like army men. We returned from ABC and spent our sixth night in Doban, and seventh night in Jhinudada. We also got an opportunity to experience a hot spring bath in Jhinu which made the trip memorable.

Gosainkunda Health Camp, 2018

After our trek to Annapurna Base Camp, I started to gain more interest in high altitude medicine. I started getting curious about how patients with acute mountain sickness (AMS) would present to a center and what it would be like to treat them in high altitude with limited resources available at hand. I had long heard about the miraculous magic due to descent of patients with AMS during treatment but I hadn't examined or let alone seen a patient with AMS. Eventually, I got a wonderful opportunity to work as a volunteer medical student for Gosaikunda Health Camp which is an annual program organized jointly by MMSN and Himalayan Rescue Association (HRA). We had a team of 7 people including five enthusiastic doctors, one experienced HRA staff and me, a third-year medical student. I had wonderful seniors to guide me. Though it would be my third trip at high altitude, it was different than the previous ones. This time I was going for a health camp and I would help my team to examine and treat patients. As per the guidelines of Wilderness Medical Society, we spent the first night in Dhunche (2000m), second in Chandanbari (3200m), third in Lauribina (3700m) and fourth in Gosainkunda (4380m). We ascended 500m per day after 3000m height. En route, we met many Nepali pilgrims with an ascent profile of more than 1500 m per day and having altitude related problems. We counseled and treated as many people as we could. Many were taking garlic and lemon as

prophylaxis, the usefulness of which is not scientifically proven. Most of the time my job was to help my seniors during work especially during emergency; to carry a small emergency bag with essential medicine and run with my seniors to treat patients. We examined and treated a total of 433 pilgrims who visited our health camp in 4 days. Most of them had various signs of AMS and few had HAPE and HACE. Most of the people had a smell of garlic or lemon coming out of their breath. I got to see many AMS patients and it was a great learning opportunity for me.

To conclude

Looking back at our first trek retrospectively, we realize that everything favored us during our Poon Hill trek. We managed to trek with our sports shoes, our college bag, and a light jacket. My second experience at high altitude; trek to ABC was well-planned than the previous one but we had ascended more than 500m per day. My experience during Gosaikunda Health Camp was very rewarding. Previously, I started my trek as a naïve young boy ready to hit the roads without proper planning. After getting involved with MMSN, today I am motivated to aware people about various altitude sickness and ways to alleviate them to make their journey to the mountains safe and memorable.

Rajesh Sharma,

MBBS 4th year, IOM.

Learning it the Gosainkunda Way!

Aashna Bhandari

Headlight, stethoscope, pulse oximeter, a bottle of warm water, cap and gloves. These were the things I checked before we left from our hotel towards our camp. It was the last night of our four days long health camp in a temporary *goth* (animal shelter) near the holy lake, Gosaikunda. No wonder we were much prepared for this night, long before we came here. The day had been busy and we were hoping for a fairly hectic night. Among the thousands of pilgrims there, some were busy worshipping in the temple, while others were dancing in groups in their cultural songs. A few people had entered our shelter to perform *pujas*. We enjoyed listening to their chants –also we had some company! Plus, we were happy to be served with *prasad* at the end. It was indeed, a very engrossing day for us but we didn't realize what the night was holding in its darkness.

It was almost 8:00 pm when four of us headed towards our camp after having our dinner. After we reached there, our other group members went back to the hotel to rest while we were on duty in the camp. It was very cold and dark. We cleaned the *goth* and opened up two sleeping bags to keep us warm. Some essentials and emergency drugs were kept nearby for the ease of retrieval in the dark. We were chatting with each other so that we could stay awake. We could still hear the chanting, and music. As it was dark already, numbers of patient were gradually decreasing. We saw some cases of High altitude headache, Acute gastroenteritis and Upper Respiratory Tract Infections that were managed accordingly.

At around 10, a young boy came rushing to our camp. He said his friend was unconsciously lying in his bed. He reported that his friend had difficulty while breathing during the day. His history was very much suggestive of High Altitude Pulmonary Edema. Without further delay, two of the doctors rushed to attend the tent call while I and my other friend stayed in the camp. While we were there, we received three patients from a nearby *tharpu* (a makeshift tent) - with the complaint of dyspnea. All examination findings were normal and their symptoms subsided while they were there – the difficulty breathing might have been because of the smoke inside that *tharpu.* After the patients left, the same boy who had called us for the tent call came back to our camp and asked for an oxygen cylinder. We were now sure that his friend was having HAPE and needed immediate oxygenation and descent. He left with an oxygen cylinder and canister that we had.

We were only two of us in the camp. Silence had crept its way into the night, except the noise of people chatting from a nearby *tharpu*. Sometimes, people would walk across our camp and most of them fully drunk. I still remember keeping a scissor for protection and a whistle for emergency. We were hopeful that the Armed Policy Force deployed near our camp would help us in case of an emergency. At around 12:30 pm, one of our friends came rushing to us asking for an extra supply of emergency drugs required for resuscitation. My friend immediately arranged them, and I rushed towards the hotel with the supply. As I reached the door with a pounding heart, we could see a young boy, probably in his 20s lying unconscious with oxygen face mask over his mouth and nose and an IV cannula in his hand. Our team was doing its best to keep his airway open. His blood pressure and oxygen saturation were far from normal; his vitals were not improving. Helicopter evacuation at night was not possible so we could not descend him to lower altitude. Two of us returned to our camp where our other friend was examining a man with nasal blockage and difficulty in sleeping. We sent him with a nasal spray and some anti-histamine drugs.

At around 4:00 am in the morning, I went back to the hotel to check on the ill guy. I found he was declared dead around an hour ago. He had gone into

cardiac arrest and five cycles of CPR could not revive him.

Rush of pilgrims to take the holy bath in Gosaikunda was increasing towards the early morning and so was the flow of patients in our camp. A lady presented with shivering, headache, vomiting and decreased consciousness after taking bath in cold water. With the diagnosis of hypothermia, we made her warm by making her rest in our sleeping bag surrounded by bottles of warm water. She stayed there for about three hours, recovered and returned back on foot. But one thing she left behind in the sleeping bag– her poop - will make sure we will never forget her!

Following her, we subsequently received two cases – one each of HACE and HAPE. All of them were provided with initial management and were arranged to descend with the help of locals. The environment near the holy lake and temple was absolutely magical. Thousands of pilgrims were chanting prayers and taking dips in the ice cold water of holy Gosaikunda. The temple priests were busy handing holy threads – *doro* and *janai* to the pilgrims. For us, it was the busiest time but the experience was amazing.

It was almost noon and we were still busy receiving patients and managing them with the same joy and enthusiasm we had on our 1st day. Hundreds of patients received treatment with some being so severe, it would have been impossible to save them if early management and descent was not done. We were very much touched by the unexpected demise of the young boy. We stayed at the camp for some more time. It was around 2 pm when we had our meals and left the holy lake. It was raining outside, and all of us had our rain protection gears ready. And while I saw my team nicely prepared, I thought to myself - had every pilgrim been as cautious as this medical team, we wouldn't even have seen half the patients we saw on this trip. With my final glance at Gosaikunda, I tightened my bag and started the return journey towards Chandanbari. I am very fortunate to have been a part of this health camp and proud that I saved hundreds of lives and helped pilgrims to have a safe visit.

Aashna Bhandari,

MBBS, IOM.

Getting to know *EBC ko Lakpa dai*

For anyone acquainted to the Himalayan Rescue Association (HRA) or anyone having stayed at the Everest Base Camp in the last 18 years, ***Lakpa Norbu Sherpa*** *is not a new name. One of only 4 longline rescuers of Nepal, he has been serving as the Basecamp Coordinator for Everest ER run by HRA each climbing season since 2003. He has conducted innumerable rescues in the Nepali Himalayas, and also in the European Alps. Here is the summary of the interview Samriddha and Suraj had with him.*

Was mountain rescue always your passion? Please talk us through your journey to EBC.

I was born and raised in a small village, Kharikhola in Solukhumbu. I started my love affair with mountains as a porter when I was 13. At age 18, I passed my 10th grade and came to Kathmandu to join a college. This is when I met people from the trekking and tourism industry. I undertook the trekking guide training and basic mountaineering training. At this time, I first thought of making a serious career choice out of trekking and mountaineering.

In 2000, I joined the Himalayan Rescue Association and became their porter coordinator. I used to arrange porters for medical teams going to the Pheriche and Manang Aid-Posts. In 2003, HRA started the Everest ER at the EBC. They were looking for a dependable, fairly local Basecamp Coordinator for the clinic. I was fortunate enough to have got the opportunity, and have served the clinic ever since.

What do you think was the defining point in your career?

There were a couple of defining points actually. The first would have to be my association with HRA.

The second one came in 2011. After almost a decade of my service at the Everest ER, I had a quite a lot of connections and networks. Among them, Captain Siddhartha Gurung, who I am thankful to, sent me to Switzerland for a Longline Rescue Specialist Course. It was only the second instance of Nepalese attending the course, and now I was among the 4 longline rescuers in Nepal. 4 years and another course later, I became a longline rescue instructor too. Life has been different after that.

What cases do you usually need to rescue? Which has been your toughest rescue till date?

Trauma cases due to fall are the most frequent. Cases of frostbite, HACE/HAPE and snow blindness follow.

All cases of mountain rescue are tough, but this one has stayed in my memory for long. During the climbing season of 2017, a Sherpa allegedly fell into a thin crevasse while trying to load a helicopter from Camp 1. When I was called, it was already evening. Captain Maurizio and I flew up to camp 1

immediately. The crevasse although thin was pretty deep, and the Sherpa had fallen almost 50 meters into it. We successfully managed to pull him out, but the guy was semi-conscious and cold. He also had a cut in his head.

Since it was already getting cloudy and dark, the next challenge was to get him down to medical attention. The EBC was completely covered with clouds, so we decided to land in Pheriche instead. But on our way, we got lost. We were almost out of fuel when finally we followed the stream upto Pheriche and landed there. We re-fueled in Pheriche – and since the aid post there was already closed, we continued upto Namche. It was 8pm when we reached there, and the helicopter we were travelling by was not a night vision one. The patient was taken care of at the hospital in Namche, but we could not save him.

Can you talk us through the 2014 avalanche and the 2015 earthquake at EBC?

The avalanche in 2014 was tragic. 13 of our friends died and were rescued. But the magnitude of effect that the 2015 earthquake/avalanche had was massive. I consider myself lucky to have survived through that.

I still remember the thud that I heard come from towards the Pumori Base Camp. What I saw was a huge mass of snow coming right towards us. Those of us who managed to jump out of its way survived. Most tents including the Everest ER had been blown away. 18 people in the Base Camp were dead, and 80 more were injured. We spent the entire night taking care of the injured. It was complete chaos. Thankfully, we were all flown to Kathmandu within 4 days of the disaster.

Setting up the Everest ER

How is your life like away from EBC? What do you do during the off-seasons?

Once the climbing season is over, I come back to my home in Kathmandu – I live here with my wife, two sons, my mom and dad. But it's not for long that I get to stay with them. I usually travel to Europe to work with a couple of other rescue companies. I usually work with Heli Bernina in Switzerland, where I rescue people, and cows, for a change. *laughs* It's pretty different out there. The altitudes are lower – we hardly ever exceed 3,500 meters. So the helicopters can carry a lot more weight.

During an interview earlier this year, you were mentioned as the unofficial Mayor of the Everest Base Camp. Is that an added bit of responsibility?

Laughs again I have never considered myself that influential a person. However, after almost 2 decades of working here, people expect you to take decisions. Yes, it is an added responsibility but not a burden.

I have never been a money minded person. When people need to be rescued, sometimes form Camp 2 or 3 of Everest, I rescue them even without consulting their insurances in cases of dire emergency. Some tough decisions have been satisfying, while a few have gone wrong. These decisions have probably helped me build lasting connections with people who come to EBC. But I would still not believe that I am worthy of that title yet.

Performing a longline rescue

How satisfying has your work been for the last 17 years? Any changes you would like seeing in the field of mountain rescue in Nepal?

Well, when things go right, it is a really satisfying job. There have been instances of us rescuing ill people from as high as 7800 meters, bringing them right down to base camp and saving their lives. But accidents and disasters happen. Despite us trying our best, casualties do occur at high altitudes. Since 2012 I have conducted almost 40 longline rescues, it feels special to be doing this as I am one of the few rescuers trained for it.

Regarding recommendations, a few night vision helicopters could be handy for night time rescue if brought in the Nepali mountains. Also, we hear of a lot of fake rescues being conducted at high altitude. These should be brought to a halt.

Editorial: A Look Back at the XII ISMM World Congress on Mountain Medicine

Samriddha Raj Pant

The twelfth edition of ISMM World Congress on Mountain Medicine was held in Kathmandu, Nepal in November last year. Over 400 delegates from 32 different countries gathered right here in the heart of the Himalayas. It saw the 'experts', the ones at the helm of High Altitude Medicine in the world, gather in Nepal for a Congress for the first time in history. For a mountainous country like Nepal where tourism could rise beyond boundaries if the mountains were made safer, there could not have been a more productive scientific meeting.

The event consisted of a pre-conference workshop followed by the four day conference. The first day of the main conference saw delegates network in an opening reception; while scientific sessions, workshops, case discussions and poster presentations were held in the remaining three days. The main objective of the congress was to conduct scientific discussions focusing on the latest updates and discoveries in the relevant fields. There were over 60 oral presentations and over 120 research papers presented as posters.

The conference was hosted by an active group of young physicians from the Mountain Medicine Society of Nepal (MMSN) under the leadership of Dr. Buddha Basnyat. This international conference provided a common platform for delegates around the world to exchange information on science and research in high altitude medicine, expedition medicine, mountain emergency medicine, and travel medicine. It gave the delegates and faculties an opportunity to combine this unique congress with a journey to the land of the highest peaks, of miraculous people, cultures and landscapes.

The major outcomes of this conference have come two-fold. First of all, the young high altitude medicine enthusiasts from Nepal got first-hand experience of organizing an event as grand as this. They interacted with the best and most experienced minds in high altitude and travel medicine, and shared their mountain experiences with others. This shall go a long way in setting up a group of doctors who are well equipped to tackle health problems that might arise in high altitude. This will not only make our mountains safer, but it will also help the tourism industry by building a sense of belief among trekkers that their health is in safe hands.

Secondly, thanks to the conference scholarships, 75 Nepali and international young delegates got a chance to attend the conference free of cost. This scholarship (special mention to Dr. Maniraj Neupane for the fundraising) was the first of its kind in the history of this conference. It was the first exposure to high altitude medicine for many of these young doctors and medical students, and could help pave their way to a mountain medicine career. Let us hope that the conference scholarship is given continuity so that more young people get to attend these conferences in future without having to worry about the hefty paycheck.

Nepal is a paradise for mountain lovers. Most tourists who visit Nepal look forward to incorporating at least a short trek, hike or cycling at high altitude. As appealing as the views and experiences here might seem, exposure to high altitude has its own cons, and precautions need to be taken. Making our medical personnel more adept with the ailments of high altitude through research, case studies and networking with the best minds in mountain medicine could just be the way forward. This congress was a success story for MMSN and shall go a long way in helping expand its reach.

Samriddha Raj Pant,

Chief Editor.

Musings

Kanchana Bali

I am in Namche. It is almost twilight but the sun refuses to set so soon. I sit in this one café that is leaning against the astonishing background of the picturesque Himalayas. My chilled hands are snuggly wrapped by these overpriced mittens I bought a few shops back. Why I am mentioning it in precise detail is because this 'luxury' is preventing me from achieving the sole purpose of my visit. After several months of being unable to pen a single thought, and risking my career, I decided to look for my muse. I am not a trekker here; I am a wanderer, a woman, a (struggling) writer.

I have always admired strong opinionated women, particularly those who are all about shattering stereotypes. The concept of evolution of women in terms of versatility in their potential areas of work and equity in opportunities is sprouting lately and this makes me feel lucky to have belonged to this 21st century world. No, this is not one of those unfinished rants of feminism but just sheer

nostalgia of the journey of other women who paved my way here to this moment, where I get to be a female solo aspiring travel writer in Nepal and sip on this large cup of coffee while mindlessly flipping pages of an old mountaineering magazine in the gateway to the Himalayas in the hope of getting some inspiration to salvage my drowning career. While I seamlessly scan the rugged pages, something falls from the magazine – a postage stamp. I pick it up. The picture on it is that of an exemplary woman and that completely coincides with my subject of thought at that moment. She was one of the strongest women of her times – Pasang Lhamu Sherpa.

I have my good and bad days. Today seems to be a good day though because my thoughts are finally getting onto something. I see the picture of this Sherpa woman again. A true rebel, she was. She decided to get married to a guy of her choice when arranged marriage was the tradition. She did not settle in life. We live in the land of the Himalayas but we know so little about this mountain girl. Wasn't she a woman who was also surrounded by societal norms of domiciliation of women not very different from the ones that still linger around us today? This was almost fifty odd years ago. Lhamu proved to be so ahead of time in many of her decisions; this choice was only the beginning.

I look at the majestic peaks. Their incandescence instills a sense of empowerment in me. Being an ambitious twenty something year old from the modern era, whose ambitions come before chores or responsibilities, I wonder how she did it. It must not have been easy. I mean, she was a daughter, a wife and a mother of two. She started a trekking company and took expedition teams from all around the world for one trek after another. This was at a time when particularly Nepalese women were thought to be incapable of leading teams or even juggling work and life, let alone working in a majorly patriarchal area such as that of adventure tourism and mountaineering. Surprisingly though, female mountaineers from other parts of the world had already summited the highest peak then. Lhamu, however, was prevented from doing so a couple of times by the foreign expedition teams. It is not always a conflict of gender, I believe. There are conflicts of power and of insecurities. This prejudice and underestimation turned out to be a blessing in disguise. Pasang Lhamu Sherpa succeeded in becoming the first ever Nepalese woman to summit the highest peak in the world and the rest is history.

I take off my mittens and grab my notebook. Her victory was short lived. During her descent, the weather conditions were not in her favor, her teammate fell ill and the success took a nasty turn. In modern day words, well, life happened. Our hero did not leave her friend behind. She stayed with her, jeopardized her own life and sadly, Pasang Lhamu slept forever. And although she did not wake up, she awoke millions. And she did move mountains. This young woman inspired us Nepalese women to push ourselves further, to shatter the glass ceiling, and to follow our ambitions. She is one of our first true feminists and this modern day Nepal would not have had a socio-cultural revolution had it not been her. Opinionated women have always been around and examples of women empowerment have always existed in this land of Himalayas. Why, then, are lives like hers heard of so little when we dwell in the unfathomable ideas of feminism in Nepal?

I find my muse in this lady's story. They say that one man's loss is another man's treasure. I think different though. I believe that one woman's victory can be another woman's empowerment just how Lhamu's life became my opus. The shimmers and shatters of this strong mountain girl makes me realize that although as a woman I may have my own battles to fight, my own mountains to climb, and my own story to write, every dawn will definitely bring ahead an incandescent hope for our kind. And with that, as the last ray of sun dissolves into the dark sky, after months and months I sit down to write.

Kanchana Bali,

MBBS 5th year, IOM.

MMSN Outdoor Activities

Prasanna Karki

With the aim of involving young medical students and doctors in activities outside of their busy academic schedule, MMSN regularly conducts outdoor activities. Interested individuals from different medical colleges are registered via emails, phone calls and messages and get involved in the specific program allocated for the day. In addition to the outdoor fun and physical exercise the participants have, MMSN also targets to give them knowledge about basic emergency response through case scenarios and simulations during the

program. Few regular outdoor activities we regularly conduct here at MMSN are described below:

1. Hiking and Case Scenarios

Kathmandu valley - the capital city of Nepal is surrounded by green hills and is a perfect location for a one day hike. Shivapuri National Park to the north, Nagarjun hills to the west, Champadevi and Chandragiri to the southeast are the usual spots. Participants usually gather early morning around 7 am and are taken to the starting point by bus. A short uphill walk into the sub alpine forests and we will be already away from the hustle and bustle of the crowded city. A smell of fresh air among the shades of lush green trees of Pine, Rhododendron and Oak, streams and rivers on the way with scenic views of the valley and even the mountains on a clear day leaves us refreshed and energized. Participants also get to enjoy the cultural and religious aspects with the hiking routes covered with colourful prayer flags, Buddhist monasteries and Hindu temples on the way. Midway through the trekking participants are gathered to practice case scenarios. These usually include management of trauma, basic life support, pre hospital management of fractures and so on. Participants are divided into groups, some simulate a scenario while others try to manage the victim. MMSN regularly conducts hiking program two to three times a year.

2. Wall Climbing Training Program

This is an indoor climbing program regularly conducted by MMSN where participants climb on artificially constructed walls. Participants are at first familiarized with the concept of climbing and belaying. Proper climbing equipment including harnesses, ropes, carabiner, rock shoes and belay devices along with their proper use are demonstrated among the participants. Then they are trained to make the basic figure-eight knot which is a knot commonly used in the climbing. After the participants are acquainted with all these, wall climbing is done. Participants are also trained to belay their partners. This program has also been helpful for the Diploma in Mountain Medicine (DiMM) candidates to test their physical strength, foot work and determination.

3. Cycling

Cycling in Kathmandu is famous owing to its pleasant weather, fascinating trails along the green fields and easy accessibility to world heritage sites and other beautiful locations. At the same time, it is a more demanding activity due to the ever busy streets, humps and bumps in the road and lack of proper cycling lane. MMSN conducts cycling activity once a year. Changunarayan to the northeast and Chovar to the west are preferred locations and take 6-8 hours ride. Participants cycle along scenic trails enjoying scintillating views of the valley and the peaceful off road environment.

4. Rock Climbing

This is an outdoor climbing program in which the participants are trained to climb on natural rocks. Nagarjun Rock Climbing is our destination for the program which is located 3 km northwest of Kathmandu valley in Nagarjun forest reserve. Rock climbing is a more challenging sport than wall climbing and thus individuals with three or more wall climbing experiences are prioritized. Individuals get to enjoy a short walk into the pine woods of Nagarjun forest with bird-watching on the way which Nagarjun is famous for. After reaching the site, orientation on equipment's, safety techniques, rules and regulations is provided by the professional guides. A natural setting but physically and mentally more challenging, rock climbing provides a good adventure for outdoor enthusiasts. Case scenarios on emergency response, patient transportation are also done in the midst of the program. MMSN conducts rock climbing once to twice in a year.

5. White water rafting and camping

Nepal is famous for numerous spectacular rivers and especially the current and tides with which they flow. More the current, more is the adventure for river runners. Bhotekoshi and Trishuli rafting sites are located near to the Kathmandu valley and are our usual destinations for the program. Rafting is commenced after an orientation by professional guides and safety checks of the participants. Riding in the steep rivers through the forest with waves in between, cliff jumping on the way, swimming and overnight camping serves a perfect combination of recreation and adventure for our MMSN members. We conduct rafting program once a year usually between March and August.

Other than these, MMSN conducts indoor case scenarios and hands on trainings whenever the weather does not permit outdoor activities. While these activities are obviously fun, we try to make sure that the participants take back as much information and skills as they can at the end of the day.

Prasanna Karki,

MBBS, IOM,

MMSN Outdoor Activities Coordinator.

Challenges for Women in Mountain Medicine

Sangeeta Poudel

There is a saying in English, "the hand that rocks the cradle rules the world". This means that women exercise great influence over the community. Women are the creative force of the universe in almost all its expressions - life begins in her womb. She is strong, dynamic and multitasking; and essays different roles - that of a mother, wife, daughter, friend. Plus, she also earns for her family.

There has always been gender bias all over the world and Nepal is no exception to this. In fact, gender discrimination is not a choice but it is the way of life here. Many have first-hand experience of facing or forcing disparity between males and females at a very young age. Son is the pride of the society and the need of culture while daughters still remain victims of gender discrimination.

In a society like ours where gender discrimination is so tangible I believe you wouldn't be surprised to know what the actual situation is, if we take a close look into the medical profession. Just imagine how a daughter in law takes care of her family members and looks after her patients every day and still manages to give birth to a baby and transform that baby into a wise person.

I must say I am lucky. My parents, despite all the discrimination in the society taught me to fight against it. When my society had already decided my age of marriage; my father supported me to get into medical school. To work in the field of mountain medicine is not an easy choice as a female. Mountaineering is risky - one may suffer from mountain related illnesses and medical illnesses. Other dangers like slippage, avalanche, and heavy snowfall always remain. Constant encouragement by the Mountain Medicine Society of Nepal has always been a great motivation for females; this will increase female involvement in mountain medicine and empower them in all aspects of life.

The Himalayas lack a pool of well-trained medical personnel and high quality researches; many areas are yet to be explored. This is why we now have a greater opportunity to identify and fill vacant spaces, explore further, go for rescues, expedition, and become role models for other females not only in Nepal but in world – than ever before.

According to the first female physician, Dr. Elizabeth Blackwell, if a society will not admit of women's free development, then that society must be remodeled. Thirty three percent of doctors in Nepal are females, and the percent is rising every year. Since mountaineering in Nepal is an alluring recreation that is receiving rapid global attention, it will demand a huge number of mountain doctors. Today, few women are encouraged to work in the mountains but with proper dissipation of information about mountain medicine and rise in female medical graduates in near future, we will have more female involvement in mountain medicine.

Lastly my message for all the females out there who dream, who have passion and aim to work in the mountains - first be fearless and fierce, then gather all the confidence, know your passion and work for it. We will put our hands together and work together in those beautiful yet dangerous mountains.

Sangeeta Poudel,

MBBS, KISTMC.

First trip to the Mountains

Aakash Sherpali

After returning from home we had a few days left from our winter vacation. We knew we had our exams right after the holidays that would certainly give us a hard time. My roommates planned to make the first medical school vacation memorable with thrill and adventures. After lots of discussion and internet surfing, we planned to have a trip to Sailung.

This place was recommended by our seniors because of the short duration of the trip and minimal expenses. To prepare a tentative itinerary, we started collecting more information about Sailung in the internet. We were thoroughly excited, and our bags were packed. We had to get to the bus station at 6 am the next morning, but as we couldn't sleep due to excitement, we had trouble waking up the next morning. We reached the bus station and missed the direct bus to Sailung. But, luckily we got another bus that would drop us somewhere near - Mude. We were told that we could catch the local bus to Sailung once we reached there.

After a 6-hour drive from Kathmandu, we reached Mude where we started to see snowfall. The tickling shower of snowfall was adorable. Ahead of ourselves, we had two roads, one that led to Kalinchowk and the other to

Snow-clad Sailung

Sailung. Everyone said that the weather condition in Kalinchowk was bad due to heavy rainfall.

After a long wait, we got a bus to Sailung, but it was full of passengers. It took us 4 hours to reach the base of Sailung at about 2800m altitude where we met a group of engineers. From there we had to walk about 2-3 hours in a path full of snow between the woods. After a short hike we reached the highest point of Sailung. From there we could see hills covered with snow. We reached the View Tower at a height of 3400m, enjoying the view on our way. We could see the glistening white snow in all directions as far as our eye could reach. We weren't aware of time until it was dark and cold when we suddenly were reminded of the need to search for a hotel. We descended in the wrong direction during the dark and could barely see hotel lights. We realized we were completely screwed when we saw no signal on our phones.

The silence was occasionally broken by the barking of dogs – we knew we were near. After another few hundred steps we saw a house and asked if there was any hotel nearby. We had crossed an entire district – we had walked from Dolakha into Ramechaap. The kind man in that house served us tea. He said it would take 45 minutes to reach the nearest hotel. We assumed 45 minutes' walk for a local would take us 2 hours. We thanked him and continued our journey. The path was full of snow which made it difficult to walk. I started to feel cramps in my muscles. After a long journey, we finally arrived at the hotel. Thankfully, a delicious dinner awaited us.

I was completely exhausted and in pain due to cramps. However, all that walking was absolutely worth it. With an excitement to see the sunrise next morning, we jumped into our beds soon. We woke up early in the morning, and had our tea with a beautiful view atop Sailung. We hiked again until we reached the View tower. It was very cold at the top until sunrise. The view from the top during sunrise was breathtaking. We enjoyed the panoramic view and clicked some photos for memories. As there was only one bus leaving for Kathmandu, we descended quickly. All along our way back, we gossiped about the beautiful moments we had lived and memories we had made for the past 2 days. And at the end of it all, it was the company of my friends that had made this trip all the more exciting! This is surely the first of many more high altitude trips for us!

Aakash Sherpali,

MBBS 2nd year, IOM.

MMSN News and Activities

The 12th edition of ISMM World Congress on Mountain Medicine was held from 21st to 24th November 2018 in Kathmandu, Nepal. This international conference provided a common platform for delegates around the world to exchange information on science and research in high altitude medicine, expedition medicine, mountain emergency medicine, and travel medicine.

A 2 day pre-conference workshop took place before the main congress. Over 400 delegates from 32 different countries were present. 61 scientific papers were presented orally while more than 120 posters were presented during the course of the conference.

During the 2019 climbing season, Dr. Pawan Karki from MMSN volunteered in the Himalayan Rescue Association run Everest ER – the highest health setup in the world at 5380m, for a duration of 2 months.

Dr. Samriddha Raj Pant was MMSN's first volunteer to HRA's Pheriche Aid Post in the Everest Region, where he worked for a month during the spring season of 2019.

Dr. Prakash Kharel volunteered in the IPPG run Machermo and Gokyo Aid Posts for 4 weeks during spring 2019, while Dr. Shankar Bhandari has been volunteering there for the fall season.

The annual Gosainkunda Health camp was set up in the premises of Gosainkunda Lake, at 4380 m on the occasion of Janai Purnima Festival in August 2019. Five doctors (Dr. Samriddha Raj Pant, Dr. Suraj Shrestha, Dr. Anupama Bhattarai, Dr. Aashna

Everest ER; Courtesy Dr. Pawan Karki

Bhandari and Dr. Shankar Bhandari) along with Ms. Saramshika Dhakal, a medical student, volunteered in the health camp. A total of 585 patients were attended during the 5 day long health camp.

Dr. Prakash Kharel participated in an eight week long placement at the John Radcliffe Hospital, University of Oxford, UK, which was organized and managed by MMSN, in December/January 2018/19.

Dr. Suman Acharya, Dr. Anjan Bhattarai, Dr. Badri Aryal and Dr. Suraj Shrestha were part of the Annapurna 100 trail race medical team in October 2019.

Workshops and talk programs with international speakers is being conducted on a regular basis. A wilderness medicine workshop was conducted under the guidance of Dr. Jessie Gehner in April 2019.

The monthly journal clubs conducted by MMSN continue to be an attraction and serve to help develop the ability of critical thinking among medical students in addition to the clinical knowledge.

'Climbing for fun' is an MMSN initiative that trains medical students and young health professionals in the field of mountain and wilderness rescue medicine; which runs on grant provided by the Farrar Foundation. We saw encouraging participation in the wall/rock climbing, hiking/cycling with case scenarios and camping activities, and expect similar response in near future. The ever increasing number of

MMSN Outdoor Activity: Climbing for Fun

Gosainkunda Health Camp 2019

MMSN memberships is another heartening sign.

The 2019 edition of Nepalese Diploma in Mountain Medicine is all set to take place in November/December. While continuing the flagship programs of MMSN, we intend to introduce newer territories of work within the society – expanding our activities further in days to come.

For frequent updates, please log into our website www.mmsn.org.np, our facebook group, or contact us via our email, mmsn@gmail.com.

MMSN Newsletter

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Mountain Medicine Society of Nepal

www.mmsn.org.np

Send us your feedback and suggestions at mmsn@gmail.com

XII ISMM World Congress on Mountain Medicine: Photo Gallery