Nepal and Pokhara

Introduction:

Described as a 'gem between two stones', Nepal is a land-locked country nestled between two emerging super-powers India and China. It's land area is about half that of New Zealand's but it has a population of approximately 28 million people.

Nepal is a geographically diverse country from rainforest in the south to Himalayan mountain peaks running east to west across the country. Nepal is home to 8 of the world's 14 peaks above 8,000 meters. Having the chance to see this amazing mountain country made Nepal a natural an elective location choice for me.

My Journey started in Kathmandu, Nepal's capital city and main economic hub. Its population is now over 6 million drawing people from all 101 different ethnic groups which exist in Nepal in search of jobs and opportunities. However the lure of the city has not transpired into better jobs and living conditions for all. Millions still live in slum areas of the city with inadequate access to basic amenities such as fresh water. It was initially a bit over whelming arriving here after the quiet country life of Masterton. The city was polluted, loud and a mad rush of people, cars and motorbikes moving in all directions.

After a quick stop over here I travelled by bus to Pokhara, my elective location for 6 weeks. Pokhara lies 200km WNW of Kathmandu.

My trip here consisted of an 8-hour bus ride along a windy poorly maintained road. On the upside the views of the landscape were amazing and I loved seeing famers immaculately stack their rice straw into bundles and plough the ground with bullocks. It felt like I was getting a glimpse into what New Zealand farming may have been like 100+ years ago.

Local village people harvesting rice.

The scenery in general would have to be one of the highlights of my trip to Nepal. Steep hills, we would consider suitable only for mountain goats, have been beautifully terraced from top to bottom. Narrow networks of tracks wind around the hills in all directions connecting up small village settlements dotted as far as the eye can see.

Pokhara is a popular tourist destination due to being the starting point for the popular Annapurna Trekking area. Consequently the population has recently boomed to 300,000 people as more employment opportunities arise to meet tourist demand. The population expansion has been faster than its capacity to provide proper infrastructure. In particular, there is growing concern about the public health risks associated with the inability to provide proper waste and sanitation services. Demand for power, which is hydro-generated, means power cuts are more frequent and can last up to 36 hours during the dry season. While not a bad thing, this made for very strategic use and charging of power dependent appliances while I was there.

The Nepalese are some of the most gentle, kind and hospitable people I have ever meet especially once I left the bustle of Kathmandu. While there are 92 different dialects in Nepal, the national language of Nepali is the unifying language and is spoken and understood by most. People in business areas and the younger generation speak English and most schools teach either in English or have English as a compulsory subject.

The Nepalese love to celebrate and there are numerous festivals (which, naturally, mean a day off work) occurr all the time. The mountain festival was on while I was in Pokhara and it was one of the most enjoyable days I had. I took part in the mountain bike race and they all cheered, tooted and gave lots of support to the foreigner competing in their race. Perhaps one of their most well-known and biggest festivals is the Gadhimai festival. This occurs every 5 years. Families will trade or buy goats, pigs, water buffalo, chickens and pigeons, often going in to debt to do so, which are then sacrificed, in their 100,000's with the goal of pleasing Gadhimai, a Hindu goddess of power. The main religion is Hindu and is practiced by over 80% of the population. Hindu religion worship the cow, which is also Nepal's national animal, so beef is impossible to find in Nepal. Cows roam the streets freely and stop traffic in all directions as hitting one can land you a jail sentence. This made for interesting morning rides to the hospital as I tried to navigate my way around these moving obstacles and their excrement (also sacred) avoiding the urge to

Mountain Festive mountain bike competition contestants.

chase them away like I would at home. Religion is strong and a significant part of the culture in Nepal with multiple temples and places of worship at almost every turn.

Nepal's Health System and Health Status:

Nepal is a low-income country with nearly 82% of its population living rurally. The current life expectancy at birth is 67 years. Significant health gains have been made since the 1990's with under-5 mortality decreasing from 150 to 42 per 1000 live births. Infectious disease remains a leading cause in approximately 70% of all deaths. However non-infectious disease such as cardiovascular disease and diabetes is on the rise in Nepal with the influence of high sugar, high fat western diets which are relatively cheap. Interestingly chronic lung disease such as COPD is also a large health issue due to pollution in the city areas and inside open fires in rural areas.

Nepal has 1 central and 2 regional hospital's that can provide tertiary level care. Then there are district hospitals providing secondary level care in the 74 districts of Nepal. Primary care is delivered by 100 doctor and nurse run Primary Health Care Centres. In rural Nepal, 750 volunteer run health posts and 3500 sub-health posts are the only form of health care available. Similar to New Zealand, despite efforts to encourage trained doctors, nurses and health care providers to rural areas, most concentrate in larger towns and city's due to concerns about isolation, lack of resources and opportunities for self education and growth in rural areas. There is also a small private sector of national and international non-government organization (NGO) run hospitals and health centers providing care. Traditional medicine must not be forgotten and still plays an important role in health care especially in rural Nepal.

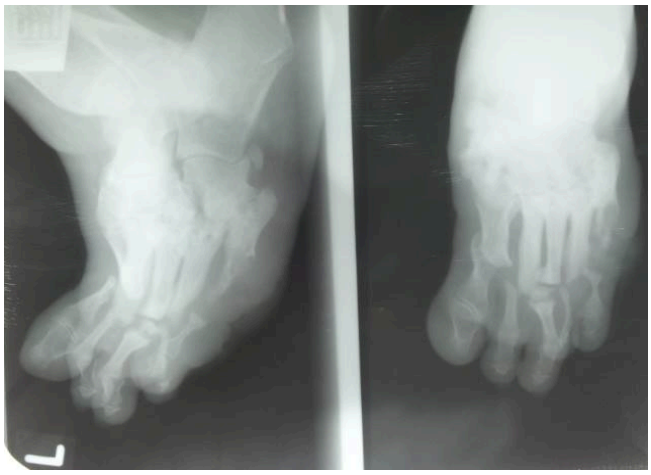
Despite best efforts to provide basic care to all, Nepal's health system is generally poorly resourced both in man-power and supplies and has been unable to cope with population growth and rapid urbanization. Poverty, geographic isolation, low education levels and social influences such as gender discrimination are continuing challenges to improved health care and health status for Nepalese. Unfortunately the large majority of health care and medication must be personally funded making the required care and medication inaccessible for a majority rather than a minority.

My Experience:

My elective in Pokhara was a truly unique experience based at Green Pastures Hospital and Rehabilitation Centre (GPHRC).

GPHRC is a 70-bed hospital started in 1957 by Christian group, International Nepalese Fellowship (INF) to provide care and rehabilitation for Leprosy patients in Western Nepal. It also provides multidisciplinary care for spinal rehabilitation patients, makes and fits prosthetic limbs and runs an outpatient dermatology service. GPHRC has one senior consultant, two junior doctors, nurses, physios, occupational therapists, prosthetic limb specialists and a social worker who is who is paraplegic himself.

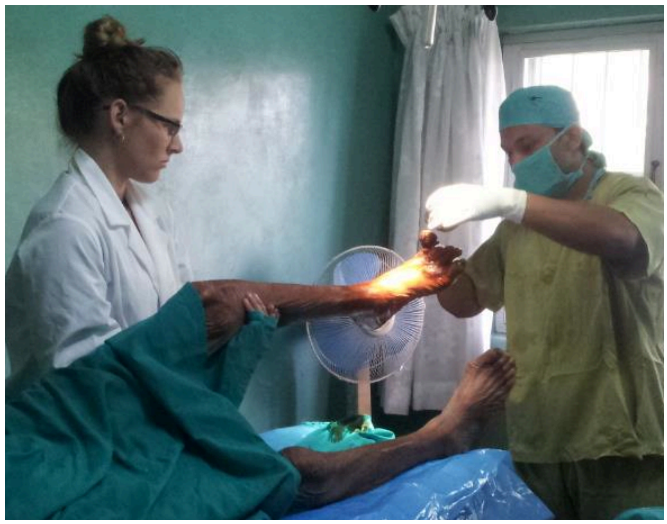
When GPHRC began it was gifted a significant area of land by the government and was intended as a place of isolation for leprosy patients. The sociology of Leprosy is intriguing and the fear and stigma associated with the disease is more harmful to the patient than the disease itself. Many patients have been subject to rejection, insult and in some cases murder. Patients are often disowned by their families and are unable to return to their villages. Many have remained at GPHRC long-term working on the hospital farm, grounds and in the kitchen.



Leprosy associated foot injury.

Leprosy, caused by the bacteria *Mycobacterium Leprae*, severely deforms and disfigures but rarely kills. It causes death of sensation and movement nerves mostly in the cooler peripheral areas of the body – hands, feet and eyes. Similar to peripheral neuropathy in diabetic patients, lack of sensation means patients cause significant trauma to their hands and feet without realising. We had one young female patient who had severely burnt both of her hands picking up a boiling pot without being able to feel it burning her. Most patients also have multiple pressure related ulcers on their feet. These wounds become infected right to the bone and fail to heal eventually requiring amputation. The nerves of the eye are also affected and patients loose sensation of their cornea leading to corneal abrasion, infection, scarring and blindness.

Most of my day-to-day experiences in the hospital consisted of helping with the care of these wounds and attending theatre where digit amputations were performed. GPHRC had a small surgical theatre with not much more than a surgical bed, light and plastic bucket. Without the facilities to offer general anaesthesia, all surgeries were performed under local. Because most patients have lost much of their sensation anyway, it appeared to be fairly non traumatic with many patients watching as they lost a digit or two to the plastic rubbish bin below the table.



Amputation of a Leprosy patient's toe, badly infected to the bone.

Fortunately, treatment for Leprosy is free and is funded in full by the WHO. Most patients require 6months to 2 years of multi drug treatment depending on the type and severity of the leprosy. Early, accessible treatment has important implications for leprosy patients. Firstly, fewer cases are advancing to the stage of nerve death with its related complications which then require deforming amputations. Secondly, treatment can be commenced and continued in the community meaning the patient can continue participating in normal family life reducing the fear and stigma associated with the disease. One of the biggest challenges now is ensuring patients finish their long course of treatment when they often feel well and cannot comprehend why they may need to continue taking the pills.

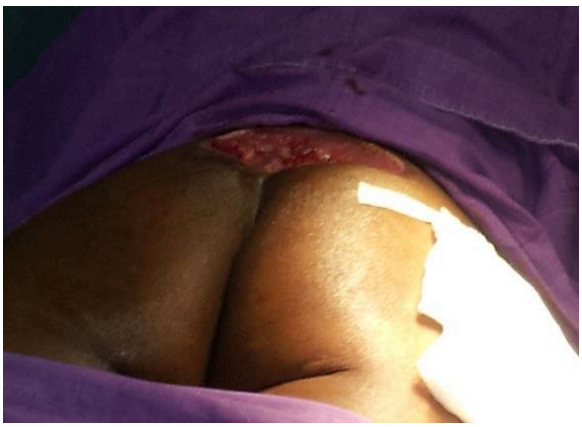
Currently about 120 cases of Leprosy are diagnosed in Nepal each year and GPHRC is one of two hospitals providing care for 'lepers'.

GPHRC other main focus is rehabilitation for spinal cord injury patients, mostly management of horrendous infected pressure sores. A common reason for spinal cord injuries is falls while carrying large loads using the traditional method, where a strap is placed over the forehead allowing much heavy loads to be carried on the

A woman using traditional means of carrying large loads.

persons back. If the person falls, their neck and back can be forcefully extended causing trauma to the spinal cord and subsequent paralysis.

One of my most memorable patients was a middle-aged woman for which this exact injury had occurred while carrying food. She had no movement or feeling below the level of her belly button.



Saucer sized pressure sore over the sacrum

Within 6 months this lady was referred to GPHRC for management of huge pressure sores she had developed over her buttocks. One was big enough to place a small fist inside, discharging huge amounts of pus and had developed a 15cm-communicating fistula with another pressure sore. Treatment is simple and consists of iodine washes initially to clear infection, followed by saline washes then honey dressings, which promote new tissue growth. The healing process is long with the patient spending months in hospital lying on her stomach.

It is not difficult to see why and how these injuries occur and it's not for the lack of love by family. Unfortunately her family was too poor to receive any investigations or treatment so after a brief visit to their nearest hospital following the injury, they returned home with little support, education or resources to help manage their new reality.

The unfortunate consequence of Nepal's current health system of 'user-pays' means health care is virtually inaccessible for the poor. Many of the patients in GPHRC fall in to this category with an average monthly income to support a family of 6-8 people of 4000 Rupee ($50 NZD). Donations to GPHRC allow the hospital to provide care for the smallest possible fee. One day in hospital costs NZD $3.20 but financial capability of the patient and their family are assessed on arrival to determine what they will be able to pay and any short-fall is covered by donations made to GPHRC.

The prosthesis department was one of my favorite places to visit. I loved watching the work of the amazing team there who make prosthesis from scratch. The process is fascinating and starts with a casting of the stump, followed by measurements of the other limb to create a mirror image opposite limb.

There was a bit of a rush in the department as the Red Cross is stopping all prosthesis funding at the end of 2014 for victims of the Peoples War between the Nepalese Government and communist Maoist's, 1996-2006. Unfortunately many of the victims were children with blast injuries loosing hands, arms and legs.

I have also seen children with amputations secondary to compound fractures who, due to living remotely, could not reach medical care for over 2 days. Two of the boys I met had maggots in their wound when they reached hospital and the decision to amputate was made leaving one with no arm from the elbow and the other with a small stump just below the shoulder.

Prosthetic leg in creation.

Prosthesis cost between 14,000 to 42,000 Rupee ($180-530 NZ$), a full few months wages for most Nepalese families in Western Nepal. Fortunately, many who come to GPHRC have been able to access funding from various NGO's. The prostheses made are for cosmetic purposes, but are sure to provide a boost in self-esteem for these children who discreetly disguise their disability behind layers of clothing.

Reflections:

My time at GPHRC was incredibly humbling. It really bought the meaning of 'poorly-resourced' to full fruition but I was impressed with how the hospital managed using cheap but effective treatment options like iodine and honey. The team of doctors, nurses, physio's, occupational therapists, social

The GPHRC doctor – Dr Jas (left), Dr Biswa (right)

workers were dedicated to giving their patients the best care possible.
Most patients were in such a bad way but remained incredibly thankful for what they have no matter how poorly their situation. There is nothing like seeing these things to bring life into perspective.

The placement was relatively challenging at times especially with the communication barrier which existed between myself and the patients. However I relished the experience to learn and deal with a condition I will likely never see in New Zealand.