

# Respiratory Therapy in the Developing World

## - A Nepal Experience

My experience in Nepal has without a doubt gripped my definition of life. Nepal is home to Mount Everest and perhaps the most humble and selfless people on earth. With the Himalayas, a great potential for hydroelectric power generation and tourism exists. However, due to the landlocked geography and unstable government, it remains one of the world's poorest countries.

Born and raised in Canada I can not fathom how one could live on less than a small Tim Hortons coffee a day. I eagerly went after negotiating a 3 month leave of absence to investigate life in one of the poorest countries in the world. (According to WHO's World Health Statistics 2009, 54.7% of Nepal's ~28million people live on less than \$1 a day)

### Background

Neonatal intensive care in Nepal is dismal. Among the major pediatric hospitals in Kathmandu, there is an unrelenting lack of equipment and/or knowledge. This along with the overbearing pressure of overflowing patient rooms fuelled by unsanitary lifestyles puts an unfair stress on the influx of recently graduated doctors from newly established medical schools.



Kathmandu streets during Bandha (country-wide strike)

### Conviction: Millenium Goal #4 - Reduce child mortality

Investigation of the WHO 2009 statistics reveals neonatal mortality to be 32 per 1,000 live births. This is nearly 11 times the Canadian average. With only 19% of deliveries attended by a skilled birth attendant and only 2 physicians per 10,000 people, these numbers should be no surprise. But, with a health expenditure of a mere 17USD per capita versus Canada's 3917USD per capita, Nepal is doing quite well. But to ascribe a numerical monetary value to life is an insult to the Creator. Convicted to respond, [Bringing About Better Understanding \(BABU](#) - little boy in Nepali) - a registered Canadian charity - was born to increase health care capacity in Nepal through education and equipment donation.

With less than 2 years experience at the bedside and even less at the neonatal bedside, I was quite nervous and feeling quite inadequate. Nevertheless, after seeking help from colleagues, hospitals and companies across all sectors, I was encouraged to have the support of my colleagues and communities at home in 12 boxes of donated equipment/supplies to transport to Nepal.

The **goal** of this trip was to alleviate child mortality by building neonatal intensive care capacity. The plan was to launch the inaugural infant flow continuous positive airway pressure (CPAP) program at the [International Friendship Children's Hospital \(IFCH\)](#) in Kathmandu and the [United Mission Hospital \(UMH\)](#) in Tansen, Palpa. With the biennial Nepal Paediatric Society (NEPAS) conference just 2.5 weeks after my arrival, I was hoping to have a case study to present.



International Friendship Children's Hospital, Kathmandu

On arrival, the current situation was more difficult to stomach than I first remembered. Returning with clinical experience allowed me understand more of the medical picture. The lack of infection control, organization, communication with family, and patient education was shocking to say the least.

In an effort to encourage institutionalized births, the government of Nepal offers mothers 1000 Nepali Rupees (~14CAD) to birth at an institution. The busiest institution I visited saw 60-80 births per day, most of which had come to receive the incentive pay without antenatal consultations. There were no more than ~16 NICU beds available and an intermediate ward which hosted ~30 neonates depending on how many babies would share cots with heat lamps precariously hanging over them. The NICU and intermediate ward routinely shutdown for decontamination due to outbreaks every 3 months. Staff included 3:1 nursing at best and a couple consultant physicians that would rely on a group of residents for managing patient load. Hardly anything was ever thrown out. The response to any donated item would be "Thank you so much! In our country, it is different. can we re-sterile this 'single patient use' x (name of supply) with Cidex?"

It was hard not to get depressed being in that kind of 'hospital' environment (ie. constant lack of stability, water, electricity, medical equipment/knowledge). But through the support of expatriate mission physicians sharing their experiences, I realized that while frustration is a natural emotion, an attitude of gratefulness is required to continually fuel their quinesential efforts/work here.

Living in a politically volatile country reveals a different dimension to the medical challenge unbeknown to Canadians. Physicians want to help but are frustrated by lack of resources that are skimmed away by wealthy hospital administrators parading the poor working environments to generate more charity funds.

Perhaps what shocked me most was the panel discussion on resuscitation at the NEPAS conference. Physicians reported many cases of families abandoning children due to inability to pay hospital fees, the need to return to their farms to work to sustain life for themselves and their other children. Talk about being stuck between a rock and a hard place. People would say: "a child we can always have another; but another cow, not possible".

It was not until I travelled to rural area and lived among the locals that I understood their plight.

Many locals see the 'hospital' as a mythical place of healing. Families spend their life savings in desperation venturing into the unknown trying their best to save the life of one of their children. It was intriguing to hear the hospital visit story from a local rural Nepali perspective.

Living with them, I realized that while my petty cash is more than their life savings; yet they still lived very fulfilled and meaningful lives. There is something profound about living simple lives. Nevertheless, I will never be able to understand what it means to live in poverty. If being rich is defined by a guaranteed meal on the table (nevermind that I have the choice of foods and the opportunity to reject), to be poor is not to have guaranteed food on the table. The simple attitude in understanding that I am rich has made me a whole lot grateful of a person for everything I have.

Life rarely transpires as planned. Infant flow CPAP never launched. But I was privileged to connect with physician groups from all the major pediatric hospitals in Kathmandu after a CPAP presentation at the NEPAS conference that generated a fair amount of discussion. My days began to be filled weeks in advance with teaching requests from all over. Topics ranged from oxygen therapy equipment to mechanical ventilation. All commonplace to us, but profound to healthcare workers from nursing staff to medical school faculty. I became more grateful for the many educators and colleagues that invested time to patiently teach me the fundamentals and critical thinking.

Through the generous donation of new circuit components and humidifiers, simple bubble CPAP circuits were constructed and implemented 5 different hospitals across the country. Since pressurized medial air and compressors were not available, the drawback is that these systems run on pure oxygen.



### How can I help?

Despite Harper's pledge of \$1.1 billion to address maternal and neonatal health, it is my personal belief that humans are infinitely more valuable than monetary resources. Monetary resources can only empower capable humans. Your contribution regardless of location to share your knowledge/experience is the only way that we'll develop further. It's a team effort – not every mistake can be repetitively.

**Supply collection:** Mount Sinai Hospital, William Osler Health System, Sunnybrook Womens' College and ProResp had been collecting unused circuit parts, connectors and nasal prongs from CPAP/SiPAP setups for months prior to my trip. These were the very same parts that would be used to create the bubble CPAP systems that save many neonates now. If your hospital would collect these supplies and send them to BABU that would be greatly appreciated. If there is no budget to send them, we can have volunteers collect them and bring them over as well. Please do not discard these valuable resources for which we have found lifesaving use! It'll also save your organization disposal fees! Any other supplies would be greatly appreciated as well!

**Equipment collection:** Many hospitals have donated retired equipment. BABU will continue to take your functional equipment to put to proper use in Nepal and/or other countries. CareFusion, Gumbo Medical and Fisher & Paykel have also donated refurbished equipment that is being used now in Nepal.

**Knowledge share:** STABLE Program and clinical educators have donated their time and effort to create presentations to educate healthcare professionals. They have donated their slides and time for the betterment of global health. A trip over to Nepal is truly life gripping.



Standing in a cusp at Gosian Kund, Langtang Region

**Skill share:** Cathay Pacific graciously sponsored the shipment of 12 boxes of medical supplies/equipment. If you are willing to help, we will find a way to meaningfully use your expertise!

After working with fluidically driven ventilators and deelee suction catheters, I return to gladly embrace the advances in Canadian technology. As a proud RT, we live and thrive in the cusp of life and death. As such, I'm reminded of the fragility of life and how it escapes even those least suspect. Life is short. May you all continue to seize each moment to continue making a difference in your privileged line of work one patient at a time! *Carpe diem!*

*A fellow colleague,*

*Eric Cheng*

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Friends in the city

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### Links

Shankar PR, Mishra P, Dubey AK. Modern medical education in Nepal. Mar 2006 (3)1

[http://www.caper.ca/docs/papers\\_img/pdf\\_Mode rn%20Medical%20Education%20in%20Nepal.pdf](http://www.caper.ca/docs/papers_img/pdf_Mode rn%20Medical%20Education%20in%20Nepal.pdf)

Millenium Goal #4 - Reduce child mortality

<http://www.un.org/millenniumgoals/2008highlev el/pdf/newsroom/Goal%204%20FINAL.pdf>

### Media

<http://picasaweb.google.ca/gofishyfishy/Nepal?a uthkey=Gv1sRgCJa65cGJgYacRA&feat=directlink>

Video footage coming soon...