

THE SQUARE

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HE PARTNERSHIP BETWEEN THE FACULTY OF MEDICINE, NATIONAL UNIVERSITY OF RWANDA AND THE CENTRE FOR GLOBAL SURGERY, DEPARTMENT OF SURGERY OF THE MUHC GIVES OFFSPRING!!

Rwandan Partnership With McGill



Dr. Jean-Martin Laberge

By Jean-Martin Laberge, MD, FRCS, FACS, FAAP

Rwanda has a population of roughly 11 million, with only 14 surgeons at the time. Most were general surgeons, some having focused their practice on orthopedics or urology, but none showing a particular interest in pediatric surgery. . . in a country where nearly half of the population is under 18 years. In developed countries, the accepted ratio is 1 pediatric surgeon per 700,000 population, so at least 15 would be required in Rwanda (never mind the fact that developed countries do not have 50% of their population in the pediatric age group!). The goal of the MoU is to support and improve, along with our Rwandan partners, the local general surgery residency training program, with a focus on academic, research and educational activities promoting the advancement of surgical care and surgical health systems in the region. It was clearly stated that we were not to replace existing faculty and educators in educational/clinical activities. But one has to adapt to the situation as you will read below.

When the word about this partnership arrived at the Montreal Children's, it landed on fertile grounds. The pediatric general surgery division director, **Sherif Emil**, who had been

(See continuation [on page 10](#))

It all started in 2010 when **Sender Liberman** was operating at the MGH with **Dr. Franco Carli**, former chief of anesthesia. He was telling Sender that

he was about to leave for Rwanda, where **the Canadian Anesthesia Society International Education Foundation (CASIEF)** had been involved since 2006 in a partnership, teaching and helping to train anesthesia residents. "Sounds interesting", said Sender who started to ask questions. "Why don't you come and see for yourself?" replied Dr. Carli. So off went Sender, soon followed by **Tarek Razek** and **Dan Deckelbaum**, all three helping to develop a **Memorandum of Understanding (MoU)** between the [Centre for Global Surgery](#) of the MUHC and the **Faculty of Medicine of the National University of Rwanda**, with the help and full support of **Dr. Gerald Fried**.



DEPARTMENT OF SURGERY

NEWSLETTER

MCGILL UNIVERSITY

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Editor's Note

By Harvey Sigman, CD, MSc, MDCM, FRCS, FACS

This is a special issue of the Square Knot which is devoted to the McGill University and particularly the Surgical contribution to Global Health. We are grateful to the many authors who agreed to participate in this endeavour and expect that the members of our surgical family who subscribe to the Square Knot will be fascinated by the impact

that we have had on the health of the population in developing countries. We also welcome guest articles from **Dr. Madhukar Pai**, newly appointed Director of Global Health Programs, McGill University, Associate Director, McGill International TB Centre, Associate Professor, Department of Epidemiology and Biostatistics. Dr. Pai has recently taken over the position from **Dr. Dan Deckelbaum** who so ably served as Interim Director. Dr. Pai's colleague, **Dr. Arjun Rajagopalan**, has graciously accepted to submit an article on his perspective of health care in India. Dr. Rajagopalan is the Trustee and Medical Director, Head Department of Surgery, Sundaram Medical Foundation, Chennai, India. **Dr. Patrick Kyamanywa**, Associate Professor of General Surgery and Dean of the School of Medicine and Pharmacy – College of Medicine and Health Sciences, University of Rwanda, presents his impression of the mutual benefits derived from the global surgery partnership between McGill surgeons and his institution. I also wish to take this opportunity to thank **Dale Perks**, N, BScN, Nurse I/C MGH Surgery Clinic, and **Mohammed Al Mahroos**, R5 Senior Surgical Resident, and **Jonathan Cools-Lartigue**, PhD, R4 Senior Surgical Resident for providing us with descriptions of their experiences in Malawi.

Our own surgical colleagues, staff and residents, have submitted reports on their global activities including **Dr. Antoine Loutfi** who was in the vanguard of this amazing initiative. **Drs. Dan Deckelbaum** and **Tarek Razek**, Co-Directors of the Centre for Global Surgery at McGill have given us insights into the program and a framework through which this major initiative can be appreciated. **Dr. Jean-Martin Laberge** and his colleagues have provided significant articles describing the important pediatric surgical contributions that they have been making in Rwanda.

The electronic presentation of the Square Knot has allowed us to apply programs that will make our publication more readable and appealing. **Ekaterina (Katia) Lebedeva**, Assistant Editor, has introduced an ePub format that will be particularly appreciated by portable device users. She explains that "this format will allow eflowable content to be optimized to each particular device, enriched with all possible media, embedded links, and references). Please let us know if you find the additional format useful (please be



Dr. Harvey Sigman

merciful to our first ePub issue!) and worth continuing.

The Square Knot receives a number of contributions during the year which help subsidize the cost of sustaining a newsletter of such high quality over so many years. This year we received a very generous donation that requires special mention not only because of the size of the gift but because of the donor. I first met **Dr. Alan Turnbull** when he was a Junior Resident and a very good one indeed and I was his Chief Resident

at the RVH. He spent his whole surgical career at Memorial Sloan-Kettering in New York but always remained close to the Department of Surgery at McGill. He returns frequently to join us for visiting professor days and dinners and is an honorary member of our Department. We very much appreciate his friendship and support.

I wish to again acknowledge the invaluable collaboration of Katia, and the help of **Ildiko Horvath** and **Michael Leitman**, without whom this publication would not be possible. I also appeal to our readers to provide feedback that will inform our continuing efforts to provide you with a first class newsletter. ♦

Support the McGill Department of Surgery !



The McGill Department of Surgery is recognized nationally and internationally for its excellence in surgical education, research and innovation, and high quality patient care. Graduates of our surgical training programs have become our ambassadors around the world; many have risen to prominent leadership positions in their institutions.

The future of The McGill Department of Surgery as a truly great department depends more than ever on gifts from private sources. Such donations can be made ONLINE by credit card via The Montreal General Hospital Foundation at www.mghfoundation.com/donate/online-donation. Enter your donation amount and check the box "Other", and type in **McGill Department of Surgery Alumni Fund**. Fill in the "Donor information" as appropriate. Charitable receipts for Canadian tax purposes will be issued by the MGH Foundation. ♦

Gerald M. Fried, MD
Chairman, McGill Department of Surgery

Building Bridges in Global Surgery

Drs. Dan Deckelbaum and Tarek Razek, Directors

CENTRE POUR LA
CHIRURGIE MONDIALECENTRE FOR
GLOBAL SURGERY

Injury and surgical disease are a leading cause of global mortality. In fact, there are approximately 5.8 million annual injury related deaths often affecting the most productive group of our populations, those between the ages of five and 44. Unfortunately, the World Health Organization (WHO) has predicted a 40% increase in global deaths from injury between 2002 and 2030 and an 83 % increase in deaths from road traffic collisions in developing countries between the years 2000 and 2020.^{1,2}

The Centre for Global Surgery (CGS) at the McGill University Health Centre has recognized the impact of injury and acute surgical disease, and has been committed to addressing this major problem. Our ultimate goal is to reduce injury and acute surgical disease-related morbidity and mortality in resource limited settings through local capacity building involving a multidisciplinary approach. The activities based at the CGS concentrate on three themes:

- 1) research and knowledge acquisition,
- 2) education,
- 3) mentorship and career development.

The key paradigm to ensure successful programs is the establishment of strong local alliances with universities, hospitals, and governments, in the respective nations, setting the foundation for long-lasting partnerships with a common vision.

RESEARCH AND KNOWLEDGE ACQUISITION

In partnership with local universities and health care leadership, we have deployed and instituted trauma registries in Tanzania and more recently piloted these in Mozambique, Malawi, the Ukraine, Chile, Uruguay and a pilot project in Haiti. The registry is a minimal dataset collecting the most essential, high yield data

regarding injury epidemiology. In the last year, an innovative electronic iPad version programmed by **Dr. David Bracco** has been implemented in the above sites. The knowledge gained from these registries sets the foundation for the prevention and education programs, awareness campaigns, policy and lawmaking necessary to reduce the burden of injury.

EDUCATION

While research is instrumental in defining the extent of the burden, such work needs to be supported by education to address the burden of surgical disease and injury in resource limited settings. Trauma training in resource limited settings is an area that only in recent years is gaining attention. The Trauma Team Training (TTT) course was administered first in Tanzania in 2006 by **Drs. Razek, Bergman** and **Deckelbaum** in close collaboration with the Canadian Network for International Surgery (CNIS).³

This has been a successful intervention and the course has been independently administered at the Muhimbili Orthopedic Institute and now surrounding smaller hospitals every three months since that time. The local leadership has been mostly spear-headed by **Dr. Respicious Boniface** who has been instrumental at disseminating the TTT course as well as continuing



Dr. Loutfi with a group of Rwandan surgeons

to develop the Trauma Registry. More recently, the TTT course was administered in Rwanda (2011) with ongoing course administration by Rwandan leadership and in the Ukraine (2012). This model of “train the trainer” and identifying local leadership to implement the course independently is ideal for efficient knowledge dissemination in the field of Trauma in resource limited settings. This interactive course focuses on multidisciplinary teams working together and gaining the necessary knowledge to improve outcomes of the injured patient and has been administered in Tanzania every three months for the past 6 years and in Rwanda six times in the past 2 years. Each course is administered to an average of 24 health care professionals.

In addition, following an initial visit by **Dr. Sender Liberman** in 2010, the CGS-MUHC has been engaged in the Centre for Global Surgery-National University of Rwanda partnership for surgical education^{4,5} (see report from Dr.P.Kyamanywa in this issue). This program focuses on augmenting the post-graduate surgical education at the National University of Rwanda. While previously the program was mostly service based, since ►

► the inception of the partnership, there has been a significant academic component added to the post-graduate surgical training including the implementation of an academic day with lectures, conferences, case presentations and morbidity and mortality rounds. Since the program implementation in 2011, there have been approximately twenty 2-week modules focusing on surgical education in Kigali. These modules are supported by local Canadian surgeons from the MUHC. This has led to a strong pediatric surgery program under the leadership of Dr. J-M. Laberge (see report from Dr. Laberge in this issue). Under the leadership of Dr. Sender Liberman, we are now expanding this program to include surgical endoscopy training in the region.



Dr. Chris Giannou former chief surgeon for the International Committee of the Red Cross with McGill med students

MENTORSHIP

Students today are the leaders tomorrow. We have developed a significant research and global health mentorship program at the Centre for Global Surgery. The demand for active participation in global health related activities by students and residents has been tremendous. In fact, in a recent survey, over 50% of medical students at McGill University have an active interest in Global health and seek structured opportunities to build on their educational experiences in the field.⁶ In the last three years alone, at the Centre for Global Surgery, we have mentored and funded over ten residents, twenty medical and nursing students, Masters' and PhD students, here in Montreal and others in resource limited settings (Tanzania and Rwanda) in global surgical endeavours. These range from the aforementioned research and education research programs to clinical activities, student exchanges, resident exchanges and opportunities to present at international conferences. As the professionalization of global health and surgery becomes an expected competency of those engaged in the field, we strive to support this demand by providing students, residents and faculty structured opportunities to set a foundation for their future careers in global surgery while simultaneously addressing the aforementioned gaps in injury and surgical care.

DISASTER RESPONSE

The Centre for Global Surgery maintains leadership in disaster response adhering to the same themes of research and knowledge acquisition, education and mentorship and career development. In addition to these academic activities, CGS actively participates in disaster response through activities with NGO's such as the Canadian Red Cross and other governmental organization.

Dr. Kosar Khwaja recently spent three weeks in East Jerusalem supporting the response to the recent conflict in Gaza.

SUMMARY

In the last several years, there has been a significant rise in the number and impact of the activities based at the Centre for Global Surgery at the McGill University Health centre addressing surgical need in resource limited settings. These activities would not have been possible without the mentorship of surgeons such as **Drs. Mulder, Loutfi, Wexler, MacLean**, and the ongoing support of **Ron Collett** at the Montreal General Hospital foundation, **Dr. Gerald Fried**, Chief of Surgery at McGill University, and the entire faculty, residents and students that have participated in our activities. We look

forward to continuing to build on the partnerships abroad to further address the burden of injury and surgical disease resource limited settings. ♦

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Global Surgery at McGill, the Early Experience



Dr. A. Loutfi

By A. Loutfi, MD, FRCS, FACS

The ratio of surgeons to population was very low (0.32 vs 38 per 100 000 population in the United States), and inadequate numbers of essential operations were performed. In addition, we concluded that 75% of all surgery done could be performed by a general practitioner specially trained for the procedure and would not require a fully trained general surgeon (ref. 1).

We came back to Canada in the summer of 1989. During that year, with the help of Dr. Jonathan Meakins, then chairman of the Department of Surgery at McGill, a link between the Departments of Surgery at AAU and McGill University was formalized. Funding for a surgical teaching program was obtained from the Canadian International Development Agency (CIDA) via the MECHP. The program involved participating in a 4 year general surgery training program and starting a 6 months program in surgical emergencies for

It was the winter of 1988 when I first visited Ethiopia with my wife **Dr. Joyce Pickering**, invited by the McGill-Ethiopia Community Health Project (MECHP). Joyce was interested in working overseas. During our two week visit, I met several people from the Department of Surgery at Addis Abeba University (AAU), and explored the possibility of volunteering as a visiting surgeon at one of the teaching hospitals. Back in Canada, Joyce was offered a one year contract with the MECHP and in the fall of 1988 we left for Ethiopia with our two small children.

During that first year 1988-89, I worked at St. Paul's teaching hospital in Addis Abeba, the capital of Ethiopia, operating and teaching surgery at AAU. I also travelled throughout the country and performed on-site reviews of operating room records in various hospitals. This gave me the opportunity to evaluate the distribution of surgical conditions, needs and services in the country.

general practitioners (GPs) working in rural areas.

We went back to Ethiopia, now with three children. From 1989-92, I coordinated the surgical link project and recruited surgeons from McGill to work and teach in Ethiopia. The following surgeons participated in the program:

Dr. J. A. Oliver, urologist who helped establish an uro-endoscopy clinic at the Black Lion teaching hospital

Dr. P. McLean 1991-92, who participated in the implementation of the short emergency surgical course in Jimma Institute of Health and went back in 1993 to conduct an evaluation of the impact of the course on the provision of care in the remote areas

Dr. M. Wexler as an external examiner in 1992

Dr. R. Lett as a visiting surgeon in 1992

The development of the short course included evaluation and selection of hospitals for training, development of a curriculum, selection of textbooks appropriate for developing countries, coordinating the logistics and arranging for post course follow-up and evaluation. The results showed that GPs can be trained to provide life saving surgery in a short training program at a modest cost, however to become sustainable ongoing support needs to be established (ref. 2).

Unfortunately, as funding ended, our involvement with AAU was terminated in 1992.

In August 1995 the Canadian Network for International Surgery (CNIS), a non profit organization was established. **Dr. R. Lett** was chosen to be the president and **Dr. P. McLean** as



Dr. Antoine Loutfi with his wife Dr. Joyce Pickering in Ethiopia

► a director. The goal is to support training doctors in essential surgical skills, which since then has spread throughout East Africa.

My involvement in global surgery continues as short term trips to developing countries and participating with young faculty members in overseas projects.

Professionally, I have had a chance to see surgical pathologies that I would be unlikely to see here, and to operate in a much wider variety of conditions. Personally, my involvement in these programs has broadened my understanding of other cultures and given me an appreciation of our own health care system.

I am grateful to have had that opportunity with my wife Joyce and our children to have lived and worked in developing countries, and to have met exceptional individuals who have had tremendous impact on the life of people, such as **Drs. Reginald and Catherine Hamelin** who created the Addis Abeba Fistula hospital for women with childbearing injuries.

In the February 2013 issue of the BULLETIN of the American College of Surgeons (ref 3) concerning programs in humanitarian outreach they stated "one of the most surprising benefits of this program has been the degree to which attending surgeons find personal development from the experience". That was certainly my experience. ♦

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r. Madhukar (Madhu) Pai was appointed to this new position September 1, 2014. He succeeded **Dr. Dan Deckelbaum** who served as Interim Director from March

2013. Madhu is Associate Professor, Department of Epidemiology, Biostatistics and Occupational Health at McGill University and Associate Director of the McGill

Introducing Madhukar Pai, MD, PhD Director of Global Health Programs, McGill University

By Harvey H. Sigman, MDCM

International TB Centre. He completed his undergraduate and residency education in India and his postgraduate training in California. He is a consultant for the Bill and Melinda Gates Foundation and is also on the Scientific Advisory Committee for the Foundation for Innovative New Diagnostics, Geneva. He serves on the editorial boards of several journals dealing with infectious diseases and holds honorary professorships at universities in India and South Africa where his research has been directed at the diagnosis and treatment of tuberculosis especially in those two countries. He has published more than 200 peer-reviewed articles.

Madhu's contributions to the diagnosis and treatment of TB in India are so very important. I learned from the online bulletin of the



Dr. Madhukar Pai

government fund Grand Challenges Canada (<http://www.grandchallenges.ca/2014/improving-quality-of-tuberculosis-care-in-india-can-mystery-clients-help/>) that at least a million patients in India are not diagnosed, treated or reported resulting in a countless number of deaths. Most Indians go to the private sector for health care where the expertise of the caregivers may be substandard and the diagnosis and treatment inadequate. This results often in the case of TB of resistant strains and poor outcomes. His submission of a question – answer article on global health to the Square Knot is very informative.

Madhu wisely suggested that his friend and colleague **Dr. Arjun Rajagopalan**, FRCS, FRCS, of Chennai, India could provide us with a personal perspective of health care in India. Dr. Rajagopalan was very gracious in agreeing to provide us with a very candid and revealing article of his own experiences. He responded promptly in spite of a very busy schedule and we are grateful for his important contribution to this special issue.

Dr. David Eidelman, MDCM, Vice Principal (Health Affairs), Dean of the Faculty of Medicine and **Mara Ludwig**, MD, Associate Dean, Faculty Affairs, in announcing Madhu's appointment stated that "As Director of Global Health Programs, Madhu ►

► will ensure the continued excellence and growth in program development, while establishing new directions related to global health on both the educational and research fronts. He will also be responsible for student outcomes, preparing McGill students to become Canada's future global health leaders and establishing a greater presence and increased collaboration between the clinical, research and teaching communities within the Faculty of Medicine and the University. Madhu's expertise, experience and vision position him well to ensure McGill's Global Health Programs are at the forefront as a University priority and recognized as a major contributor to global health locally, nationally and internationally".

The Editorial Board of the Square Knot wishes to join the Dean and Mara Ludwig in congratulating Madhu on his appointment and wishing him the greatest of success in his new and important venture.

INTERVIEW WITH DR. MADHUKAR PAI

1. How do you feel about this new appointment as the Director of Global Health Programs at McGill University?

I am pleased to have this opportunity to provide leadership in the area of global health. In all areas of health, there is now an increasing emphasis on translation. Translating basic science to get products (e.g. diagnostics, drugs) into clinics, translational epidemiology to get policies implemented at the population level, and translational global health which can bridge the science-to-service continuum.

While academic institutions tend to address upstream translational challenges, there are few institutions with the capacity to address downstream implementation challenges. At McGill and MUHC, we have the potential to be a leader in translational research and global health. This is why I accepted to serve as the Director of McGill Global Health Programs, and am working to create a strong and vibrant new global health program that will inspire students to address global health challenges, and facilitate partnerships for faculty members.

2. What will be your new responsibilities?

Global Health Programs will include 3 major programs:

- a. Global health education and training
- b. Global health research
- c. Global health policy, partnerships, and advocacy

In each of these programs, we are currently identifying our major areas of strength as well as likely themes that will become relevant in the future. By focusing on our current strengths (e.g. TB, HIV, neglected tropical diseases), we can immediately leverage existing talent/expertise and promote McGill as an attractive setting,

for training as well as research. Subsequently, we can cultivate and develop key programs (e.g. trauma, environment, mental health, non-communicable diseases) that will become critically important in the future, as developing countries rapidly make the epidemiological transition.

3. Are you ready to tackle them and how?

With my research track record, global health expertise, and real-world experience in India and South Africa, I am ready to tackle them. By myself, however, I cannot accomplish much. Global health is all about teamwork to meet common goals. So, I am seeking the support of colleagues within the Faculty of Medicine, across the university, and our teaching hospitals and the MUHC-RI (e.g. Program on Infectious Diseases and Immunity in Global Health (IDIGH)). We will soon have an Executive Council in place, along with a governance structure, advisory board, and a strategic plan.

4. What is your priority?

My biggest priority is to get our students and trainees excited about global health. In my view, they represent our biggest contribution and hope, and if enough young people are enthused about global health, impact will naturally follow.

5. Could you give some advice to students?

Today, students everywhere are genuinely interested in global health. They feel connected in many ways, and perceive themselves to be global citizens. They are lining up to do global health, and this is a wonderful trend that must be nurtured. I would advise students to read about global health heroes (e.g. Bill Foege, Paul Farmer) who have made wonderful contributions. Their work is truly inspiring.

Global Health Programs already offers several travel and training awards, and I am hoping to increase investments in this area, including mentored research opportunities. I encourage students to visit the GHP website (<http://www.mcgill.ca/globalhealth/>), and actively participate in global health events, courses, competitions, etc.

There will be plenty of training opportunities. For example, colleagues in Epidemiology & Biostatistics are now working on a 'Global Health Option' for all graduate students. In addition, efforts are underway to offer a Summer Institute in Infectious Diseases & Global Health, building on the successful summer program offered by the McGill International TB Centre.

6. What are the qualities needed to become a global health leader?

In its broadest sense, global health is about making the world a healthier place. Each of us can choose to make a contribution here, regardless of our discipline, training, or specialization. ►

► In addition to excelling in our chosen field, optimism is a key quality – we need to believe that we can make a difference. Perseverance is another critical quality – it is not easy to improve health in many resource-poor settings, and we need to be in it for the long haul. Just think of the years of toil to eradicate smallpox, and to bring polio on the brink of eradication. Global health workers have devoted entire careers to these causes. Team work is obviously crucial. Large scale impact can never be achieved by individuals. This wonderful talk, entitled "What Makes Global Health and the People Who Practice It Special?" by Bill Foege is worth watching: <http://www.youtube.com/watch?v=6vQ6lCu7N2Q>

7. As a TB researcher, what could you bring in terms of vision and expertise to this new position?

As a TB researcher, I have trained and worked in many resource-poor settings, and have successfully developed a strong, well-funded research program supported by grants from agencies

such as CIHR, Gates Foundation and Grand Challenges Canada. I also serve as an advisor to a variety of international agencies (e.g. WHO, Stop TB Partnership) and donors (Gates Foundation, Clinton Foundation, UNITAID). I am hoping these experiences will help me build a strong global health program, so that McGill can become competitive in this area, and show-case our numerous research and educational programs. ♦

Note: This Q&A is re-published with the permission of the McGill University Health Centre.

Practicing surgery in India has to be tempered, at all times, by one constantly looming economic fact that remains poorly appreciated: India is the world's most highly privatized healthcare delivery system.

To pin surgeons down even more, the country also has the world's largest out-of-pocket share of health care expenses.

Reflections at the End of a Surgical Career in India



Dr. A. Rajagopalan

Recent estimates place the contribution of the non-governmental sector at around 70%, most of it in the form of poorly regulated, laissez-faire, for-profit organizations ranging from single doctor-run "nursing homes" to huge corporates quoted on the stock exchanges. Commissions, kick backs and fee-splitting are rife. Surprisingly, even to date, very little compliance with regulations is needed to start any sort of health care facility in India. A shopping mall approach is common with several centers offering identical services located within short distances of each other.

Quality certifications are patchy and voluntary.

Focus is on skimming those aspects of healthcare delivery that will deliver the maximum profit: diagnostic centers, free-standing single-specialty hospitals and so on.

Third party providers are rare. The health insurance sector was opened out just over a decade ago and provides coverage to around 20 million of India's 1.3 billion citizens. Many private groups have entered this lucrative market but almost all are floundering in a sea of uncertainties, not the least of which are two issues: a long standing lack of epidemiological data with regard to patterns of disease in India and a very poor idea of health care costs per episode. Premiums, driven by populist political pressures, are unrealistically low. The absence of programs for prevention and early detection combined with the practice of deferring medical consultation because of the out-of-pocket needs, means that diseases present at late and complicated stages and further increase costs to the patient.

Out-of-pocket spending for the Indian citizen is estimated at around 65% of all health care costs. Compare this with the 4% in the UK and 15% in the grossly bloated and expensive USA. The poorer the Indian, the larger the segment of earnings taken away by health care expenses. Only two other countries fare worse than India in this regard: Myanmar and Afghanistan. Major health expenditures are in the top half-dozen causes for Indian families being driven below the poverty line.

The government cannot, or will not, address this issue. Governmental share of the spending on healthcare is less than 1% of the GDP: amongst the lowest in the world. State run hospitals are inefficient, slow, corrupt and dirty. Only the indigent will use them. State-supported, health insurance schemes for the "below-the-poverty-line (BPL)" segment of the population have been sprouting in recent years. Individuals who qualify can access private care ►

► at certified hospitals and the scheme will reimburse the hospital. Once again, political compulsions drive the programs where they exist. Many are schemes for siphoning of funds after delivery of poor quality care.

So, how does a surgeon with a commitment to provide good care for his patient go about his work against these background realities? Therein lies that challenge that I have worked under for the last 30 years or more after returning to my country with training and certification from the two English-speaking nations of the North American continent. Incidentally, almost 100 of my graduating medical class of a 150 or so went to the USA, Canada or the UK in the mid-70s. My wife and I are the only two who have returned after completion of training and certification, and spent their professional lives in their country or origin. The reasons for this “brain drain” lie mainly in this chaotic, rather frightening scenario that exists in India.

The challenge of having to provide the best for the smallest amount of money is unique to this country. I can best illustrate this with some examples.

Breast cancer is the most common cancer of women in India. Early detection by mammographic screening (stepping around the controversy of whether it does any good at all) does not exist in any meaningful way. Once again, the costs are overwhelming. Still, amongst the rapidly growing middle class segment of India, there is a well entrenched picture of the disease and breast self examination remains the only practical strategy for early detection. The problem arises when women present with early stage breast cancer, particularly in the younger age groups where breast conservation has to be offered as a reasonable choice. The demands of this option are considerable and quite expensive; starting from the need for frozen section control of margins that exists in only a few places to the mandatory requirement for high quality radiation and chemotherapy. The cost of breast conservation, in my hands, is roughly three times that of mastectomy. The challenges imposed by the need to discuss this element of the treatment can be quite difficult in the face of the woman having to juggle with the concern of losing her breast or impoverishing her family.

Less difficult is the issue of choices for groin hernia. Here again, most patients in urban settings and well informed rural areas, would have heard of the laparoscopic route and its putative benefits and ask for the option. Considering the important issues about laparoscopic hernia repair that remain unresolved and emboldened by the fact that this route is about two and a half times as expensive as a quick, minimal incision, tensionless mesh repair, I recommend the open procedure for all primary groin repairs and reserve the laparoscopic only for those who insist and can afford the cost difference.

I cannot find it in myself to do otherwise.

Similarly too, an open appendectomy, through a small, cosmetically acceptable transverse incision will come in at around half the cost of the laparoscopic variety and is a very acceptable option for the budget conscious.

Choices are hard in many other situations, particularly when patients present with advanced malignancies and end-stage disease. It can be quite taxing to all concerned to have to go through the explanations needed and convince patients that a palliative route is the best for all concerned, particularly to the family as a whole and the harsh economic realities of India.

All these situations are manageable to the extent that the issues at stake can be known a priori. Not so with trauma, acute emergencies and elective procedures that run into complications. It is heart-rending to see families unable to proceed with treatment because they have run out of money, most so when we are reasonably confident that a few more days of support and treatment might help them turn the corner. Watching helplessly is one option, transfer to a public facility which will most often mean minimal to no care of consequence, is the other.

Developed countries that are struggling with cost control in health care don't have to deal with this critical element: taking money for treatment directly from the patient's purse.

Over the last two decades, I have put together and run an institution that constantly keeps in mind the need to balance economic realities with evidence-based practice. It would have been easy to “cop out” and stay in the USA. I am now retired from active practice but can look back on the years and feel content that that I have given back to my country and its people much more than I took from it. ♦

Dr. Rajagopalan's profile available for viewing at:

<http://in.linkedin.com/in/chennaidoc>

Dr Arjun Rajagopalan, FACS, FRCSC
is a Trustee & Medical Director
at the Sundaram Medical Foundation in Chennai, India

Rwanda

Continued from [page 1](#)

► recruited back to the MCH in 2008, had previously worked as a surgical volunteer in Kenya, and one of his goals was to develop a partnership with the recently approved pediatric surgery training program in Kijabe, Kenya. **Jean-Martin Laberge**, the previous division director (1995-2008) and former training program director (1993-2008), also had a strong interest in global surgery. He had accompanied his wife **Louise Caouette-Laberge**,

a pediatric plastic surgeon, on several cleft lip surgery missions, especially after she founded **Mission Sourires d'Afrique (MSA)** in 2007 (www.missionsouriresdafrique.com). The two had been invited to teach and perform live surgery at the 2008 **Pan African Pediatric Surgical Association (PAPSA)** meeting in Ghana by long-time friend and colleague

Dan Poenaru (McGill General Surgery graduate 1991, Pediatric Surgery Ste-Justine 1993). Dan had been working as a missionary surgeon in Kenya for 5 years, had developed East Africa's first accredited training program in pediatric surgery and by then was PAPSA's secretary for education. The Laberges then visited Dan in Kijabe to operate with him in November 2009

and again January 2011. The link between the MCH and Dan's program in Kijabe being well-established, **Robert Baird** was the first pediatric surgery fellow to spend a one month rotation in Kenya in March 2010, before we hosted our first African fellow the following fall. ([link to the interview with Dr. Robert Baird on CBC](#)). Rob is now on staff as the youngest member of the MCH pediatric surgery team.

Knowing this background, it is easy to understand that when Dr. Dan Deckelbaum asked for volunteers to participate in the teaching program in Kigali, the MCH team immediately responded "present"! Because of his easier family situation (youngest child being 23 years old at the time), J-M Laberge was the first to participate in the fall 2011. The timing was also perfect, since Dr. Dan Poenaru was interested in doing a locum in Montreal to improve his finances and visit his oldest son who was starting at McGill, and JML had another trip lined up with MSA later in October and needed a break from call duties. A win-win situation!



PHOTO 1. Dr. J.M. Laberge with Dr. Georges Ntakiyiruta on his right and two other staff surgeons at the CHUK.

The preparation involves the usual credential checks, letter of invitation and other administrative tasks that were greatly facilitated by the CASIEF documentation, an introduction letter written by Drs. Deckelbaum, Liberman and Razek, and several email exchanges. We are hosted by **Dr. Georges Ntakiyiruta**, the general surgeon who is responsible for the residency training program (see photo 1).

He has done an amazing work to facilitate the stay of McGill surgeons and coordinate teaching rounds. Initially we were housed in the same apartment building as the CASIEF staff, nicely located within walking distance of the hospital. Since 2013 we are housed in University apartments in a quiet residential area but further away from work.

The experience in Kigali was amazing! Teaching the residents and making rounds was great, especially seeing the successful implementation of the academic half-day, the eagerness to learn from all residents, and the open discussions and feedback provided during daily morning report. But there were so

many unmet urgent clinical needs! The **CHUK (Centre Hospitalier Universitaire de Kigali)** is the largest hospital in the country and the main teaching hospital. There are NO full time pediatric surgeons. The only pediatric surgeon for the whole country is a German surgeon who had started going to Rwanda to help after the 1994 genocide, and moved there full-time after he retired in Germany at 65. **Dr. Jahn** was now well over 70, and he spent 1 day/week at the CHUK, working the rest of the time in a smaller district hospital run by nuns, where he did elective surgeries such as pull-throughs for imperforate anus or Hirschsprung's disease. But he cannot handle all the emergencies! And none of the general surgeons were comfortable operating on small babies, therefore, neonates with easily correctable malformations such as small bowel atresias often died of complications and malnutrition with or without the benefit of operative correction. In addition, there is virtually no access to parenteral nutrition. Luckily, Dr. Laberge had been warned about the lack of appropriately sized surgical instruments and devices, so he brought a pediatric instrument set, a battery-operated headlight and much



Dr. Dan Poenaru

► needed supplies such as fine sutures, various tubes and even Marcaine to provide nerve blocks at the end of operations to decrease postoperative pain and facilitate breathing. And all of it turned out to be useful! From carrying along a transanal dissection with the headlamp during a prolonged power failure, to using a naso-enteral feeding tube across the anastomosis after resection and tapering for a jejunal atresia (see photo 2).

One has to be resourceful, just as our local hosts are. You do what you can with what you have! For example, since there are no heating lamps available in the operating suite to prevent hypothermia in newborns, the OR lamp is reversed and brought just above the baby to warm him up at the end of surgery before transfer to the recovery room.

During this first stay, there was some didactic teaching as planned, but much more one on one teaching and operating with senior residents. Staff surgeons were too busy to scrub in on cases, as they had other commitments such as administering exams to students. But at least seeds were planted that pediatric surgery can be an exciting specialty. Furthermore, through multiple encounters with pediatricians and their residents (who were ecstatic to have a dedicated surgeon for 2 weeks), it was obvious that younger pediatric surgical patients would get better nursing care on the pediatric ward than on the adult surgical wards. This has led to recommendations that were since implemented.

OFFSPRING

1. There were two more trips to Kigali by Dr. Laberge (spring 2012 and fall 2013), who was followed by Dr. Emil in December 2013. Dr. Emil sent regular accounts of his trip that were published on the MCH web site and on the web site of the Centre for Global Surgery. (click this link to read all his dispatches) as well as published in the Globe&Mail (Life and death in Kigali: A Montreal surgeon struggles to save

lives/ Published Saturday, Apr. 05 2014 / The Globe and Mail) Dr. Laberge will return in October 2014.

2. Following a presentation at the Pediatric Surgery Departmental Grand Rounds in January 2013, there was a growing interest from other divisions. **Dr. Mohamed El-Sherbiny, pediatric urologist** at the MCH, was the first to accept the invitation and

spent two weeks at the CHUK. He raised interest within the Canadian Pediatric Urology Association and is planning another trip in October 2014. He has enrolled other pediatric urologists to participate in the program.

3. A donation secured through the MCH Foundation helped to buy a dedicated pediatric surgical instrument set, including special urology instruments, as well as fine sutures to bring to Rwanda. We also obtained donations from Ethicon and through Health Partners International Canada (<http://www.hpicanada.ca/>) to help with supplies.

4. **Dr. Edmond Ntaganda**, who was a 4th year general surgery resident in 2011 when Dr. Laberge initially worked with him, decided to **pursue training in pediatric surgery** and was accepted in the Kijabe training program, thanks to our emails and letters of recommendation. He will be our exchange fellow this coming fall, as long as he can secure his visa. We plan to host him for 6 weeks, and have him attend the Canadian Association of Pediatric Surgeons' meeting which will be in Montreal September 18-20.

5. Dr. Laberge has been part of the steering committee of the **Global Child Health Initiative**, a group of MCH pediatricians interested in global health. This group was looking to establish long-term partnerships with one or two hospitals in developing countries. Dr. Laberge thought that the setup in ►

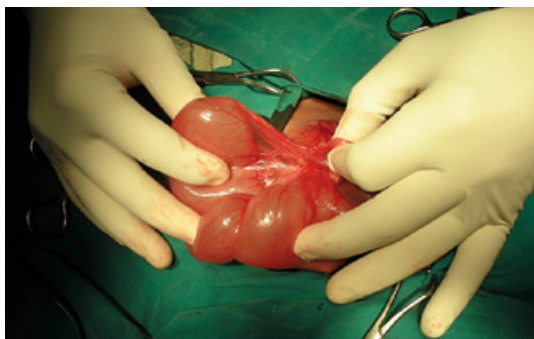


PHOTO 2. 2.5 Kg newborn with jejunal atresia who was waiting away awaiting surgery. Intraoperative picture showing the dilated proximal jejunum and tiny distal bowel. The baby made an uneventful recovery after resection, proximal tapering, passage of a transanastomotic nasojejunal feeding tube, all done through a small periumbilical incision.



PHOTO 3. Drs. Dan Poenaru, Louise Caouette Laberge and J-M Laberge in Kijabe, Kenya, with sunset over the Rift Valley.

► Kigali was a great opportunity. The CHUK is a bilingual university teaching hospital just as we are, with an eagerness to learn and exchange with others. After further contacts and discussions with CHUK pediatricians during the 2012 and 2013 trips, some email exchanges and a trip on site by pediatric emergentologist **Dr. Jennifer Turnbull**, a **MoU between the McGill Department of Pediatrics and the Department of Pediatrics of the CHUK** has been drafted, based on the Department of Surgery program. **Dr. Lisine Tuyisenge**, who was in charge of one of the pediatric wards at the time of the initial visit, is now the head of the CHUK Department of Pediatrics and is being hosted at the MCH in June 2014, with the hope that she will also attend the Annual Meeting of the [Canadian Pediatric Society](#), which also happens to be in Montreal.

6. The ties between the MCH pediatric surgeons and Dr. Dan Poenaru and the training programs have continued to grow (see photo 3).

Not only did Dr. Poenaru replace Dr. Laberge in the fall of 2011 and 2013 to allow him to go to Rwanda and other West African countries (with MSA), there are plans to share a PREM to allow Dr. Poenaru to work at the MCH 5-6 months/year, while still going back to Africa for several months each year. Dr. Poenaru would then participate in Global Health activities both in the Departments of Surgery and Pediatrics... as well as in our own Pediatric Surgery Department, of course. His efforts in Global Surgery are being recognized by the Royal College, [who has awarded him the 2014 Teasdale-Corti Humanitarian Award](#), which recognizes physicians who go beyond the accepted norms of routine practice. ([Link to the RC video](#)).

CONCLUSION

The McGill-Rwanda surgical partnership has been a tremendous success, and its effects will continue long beyond the duration of the MoU. Even though Rwandan surgeons and trainees have benefitted from our expertise and will continue to do so along with the whole population of "the country of the thousand hills", we have also benefitted from this unique experience. As the scripts say "there is more happiness in giving than receiving" (Acts 20, 35). It is well known that such work enlightens our own professions and lives while creating strong partnerships and more importantly friends across oceans and continents. In addition, Rwanda, like many other African countries, is beautiful and worth visiting while one is on site (photo 4). ♦

*By Jean-Martin Laberge, MD, FRCSC, FACS, FAAP,
Professor of Surgery and Pediatric Surgery,
McGill University, Associate Chair for Quality Assurance
and Global Surgery, Department of Pediatric Surgery*



PHOTO 4. Sunset on Lake Kivu

The provision of surgical care in low resourced settings remains a big challenge. Global data shows that the world's poorest one third performs only 3.5 % of the 234 million operations

undertaken every year worldwide. A household study to document the unmet surgical need in Rwanda

reported 6.4% of the population had a current operative condition. Rwanda is a small densely populated land-locked country with an estimated population of 11.78 million in 2013, compared to Quebec province of Canada whose population in 2013 was 8.03 million.

A Rwandan Perspective by Dr. Patrick Kyamanywa



Dr. P. Kyamanywa

In 2010, Rwanda had less than 30 surgeons with the in-country MMed residency having only started in 2006. The program has since graduated 14 surgeons and has a current enrollment of 42 residents. The trend of Global Surgery demands that our graduates are able to demonstrate

a broad awareness of the determinants of health and disease in differently resourced settings and able to relate and work relevantly across socio-economic, political and cross-cultural divides. To achieve this crop of surgeons calls for focused efforts to nurture and harness the opportunities presented by the global interdependence and the acceleration of flows of knowledge, technologies, and financing across borders, and the migration of both professionals and patients. Carefully negotiated educational partnerships are a key component of successful training programs for a global impact.

The School of Medicine and Pharmacy in Rwanda has had an education partnership with the Centre for Global Surgery at the McGill University Health Center since 2010. The main objective of the partnership is to improve the training of surgeons in Rwanda by providing faculty, developing the local faculty and improving research. The partnership is backed by a signed memorandum of understanding and has been a critical catalyst to the surgical residency. Through the partnership, the general surgery residence curriculum was reviewed in 2011-2012; a bi-annual two week long faculty exchange from the Centre realized the delivery of 15 modules within the first two years. In addition there are annual invitations of residents and faculty from Rwanda to participate in the Bethune Round Table Conference and clinical rounds hosted by the Centre. The number of shared research,

conference presentations and publications with medical students, residents and faculty from both institutions continues to grow. To-date there are 9 publications and conference presentations. Improvement of trauma care has been supported by trauma team training workshops. Plans are underway to offer focused gastrointestinal endoscopy and laparoscopy training to the residents and faculty.

The partnership between the Centre for Global Surgery at the McGill University Health Center and the University of Rwanda is a true example of global health collaboration that ensures a two-way traffic of knowledge, skills and people. In addition there is equity in agenda development with priority is given to addressing Rwanda's challenges as an attempt towards way to bridging the capacity gaps between the partners. We are very grateful to all that have and continue to contribute to the growth of this partnership. ♦

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Dr. Patrick Kyamanywa

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ver the past several years, many residents have had the opportunity to pursue electives in resource-limited settings. In the department of general surgery, a number of

Malawi - From the Perspective of a McGill Senior Surgical Resident



institutions in various African countries including Tanzania, Rwanda, Mozambique and Malawi have graciously accepted residents for both clinical and research rotations. While we are certainly not the first to participate in such an elective, we thought we would share our recent experience in Malawi in the

By Mohammed Al Mahroos, MD
and Jonathan Cools-Lartigue, PhD

hopes of encouraging others to pursue similar electives in the future.

Malawi is a small country in southeast Africa. One of the least developed countries and economy is based on agriculture, mainly tobacco, tea and sugar, with a largely rural population. Their Malawi has a low life expectancy and high infant mortality.

The Queen Elisabeth hospital in Blantyre, Malawi is a busy, publicly funded referral center in the second largest city in Malawi. Approximately 92000 patients are admitted annually from 2009 statistics, and the hospital runs 1000 beds and only 4 operating rooms on any given day. During our time there, our clinical responsibilities were similar to what we do here at the various hospital sites. Namely, daily rounds, consultations and operative exposure with attending staff and residents.



What is least surprising yet most striking is the stark contrast in pathology Malawian residents are exposed to compared to their Canadian counterparts. In a single day alone, we participated in an exploratory laparotomy secondary to an evisceration following a hippo bite, a modified radical mastectomy for advanced breast cancer and exploratory laparotomy for ischemic bowel due to midgut malrotation.

From the perspective of a senior surgical resident, there are a number of tremendous educational experiences to be gained from an elective like this. First, because there are fewer specialized staff in the hospital at any given time, more junior residents are frequently left alone to make decisions and perform minor procedures in a less or non supervised setting than what we are accustomed to. A good example of this was the trauma service at the hospital we worked at. This gave us the opportunity to share our experience from Montreal with these residents. The opportunity to teach an approach to trauma care and supervise chest tube insertions turned out to be as valuable for us as it was for the junior Malawian residents. In addition, our regular presence was appreciated by the ward residents who now had a more senior resident to run clinical decisions by and to whom we could teach a diagnostic

approach or management algorithm for a number of "common" pathologies. This was beneficial to both of us, as these conditions included typhoid fever and its complications as well as a multitude of infectious benign liver pathologies rarely encountered in North American hospitals.

While the variety and volume of cases was astounding, the opportunity to learn how to teach is something that is critically important to any aspiring academic surgeon, in addition to the extraordinary pathology encounter both in and out of the operating room.

Finally, learning to function in a severely resource limited setting proved to be an eye opening and humbling experience. Basic laboratory tests were inconsistently available; CT scans were not available at all. Radiologic work up was limited to basic radiographs and surprisingly accessible ultrasound. ►

► Accordingly, the decision of whether to take a patient to the OR was frequently based entirely on history and physical exam alone. This was quite difficult at first, particularly when one considers the ease with which the Malawian residents formulated complex treatment plans, seemingly in the absence of any meaningful diagnostic information. While this became easier over the course of the month, we were never fully comfortable without the easy access to CT scans, high resolution endoscopic evaluations and plethora of lab tests to which I think all North American physicians have become accustomed. Instead, we were forced to rely on clinical impressions that could only be formed following a great deal of direct contact with the patient.



From a surgical perspective, taking a patient into an African operating room quickly serves as a sobering reminder of the number of people needed to make an operation seem effortless. When there is minimal assistance with seemingly mundane tasks such as selecting the appropriate surgical set and sutures, patient positioning, and locoregional anesthesia, it quickly becomes apparent how much we rely on an enormous number of people to make the surgeries we perform here in Montreal run smoothly. However, when necessity forces you to make such decisions, it quickly becomes apparent how important are the teams on which we rely. It is not

until you have reached the maximum dose of Lidocaine halfway through a "local case" or are informed that there is no mesh halfway through a hernia repair that you realize how important it is to make contingency plans from the beginning.

Overall, this elective provided us with a truly unique and unforgettable experience. We learned so much in that one month from so many talented individuals that it completely changed our perception of "resource limited" settings. The attending surgeons and residents were exceptional in every sense of the word. In addition, it shed some light on many of our own clinical deficiencies that we have the luxury of being able to hide behind many expensive, and often seemingly unnecessary tests. Overall, we strongly believe that such electives are

important not just for residents interested in global surgery but also for anyone who plans on working in academia in the future. ♦

Mohammed Al Mahroos, R5 Senior Surgical Resident
Jonathan Cools-Lartigue, PhD, R4 Senior Surgical Resident



Since the age of about fifteen I've always dreamed of working abroad in a humanitarian capacity, somewhere in a developing country, such as Africa. . . . and this year in May, my dream came true. Like a kid in a candy store, I embarked on a life-changing journey to a small village in the

"A Dream Come True"



Dale Perks

By Dale Perks, N, BScN

a project that was unique and very special, giving me a chance to perhaps make a difference in another part of the world.

So off I went, as naive as the twelve other university students from across Canada and Ireland, accompanied by two professors from Bishop's University and Trinity College, to conquer and transform a "new" world. Little did I know that I would be the one transformed.

The grueling two-day trip to reach our destination, Makupo village in the Kasungu region, was exhausting to say the least, but the overwhelming warm welcome we received, in the form of singing, dancing, and clapping, as we stepped off the bus in the village, dissipated all of the fatigue that we had been experiencing at that moment. With the

reciprocation of handshakes, hugs and enthusiastic smiles, my heart was instantly warmed by the people of the village, which brought truth to Malawi's reputation of being the "warm heart

of Africa." I couldn't have ever imagined that I would feel so close to these individuals, as though they were my own brothers and sisters. It was truly magical!

of Africa." I couldn't have ever imagined that I would feel so close to these individuals, as though they were my own brothers and sisters. It was truly magical!

Soon after we arrived in the village we felt like there was no time to waste and immediately began working on our objectives. That is, continuing the development of a campus in the village of Kaomba. This campus approach, which started in 2009, will eventually include primary, secondary and adult education schools, teacher housing, experimental farming, a health clinic, a water tower, and a community center. My goals were three-fold; the first was to gather as much information as I possibly could to help inform the project regarding village health needs and the development of the future health clinic; the second was to create a first aid kit project for various villages and provide basic first aid education; and finally to promote and provide health education classes for all villagers in the nearby region regarding various health issues.

Sadly, Malawi is one of the poorest countries in the world, with many of its people living in impoverished conditions, emaciated from malnutrition and illness, including widespread HIV/AIDS, making health issues in the forefront of my mind.

I must concede that despite all of the preparation I had received before embarking on this trip, nothing could have ever prepared me for the cacophony of sights, sounds and emotions that I would experience during my stay. I had assumed that my 27 years of being a nurse, combined with having had a considerable amount of exposure to sick people in the hospital, would have easily desensitized me from culture shock. I couldn't have been more

wrong! My heart melted at the sight of children who were suffering from hunger and disease; to the idea that people were dying needlessly from illnesses that would be treated in our Western society with the "swipe of a card"; at the sight of housing that was decrepit and not even fit for our pets; to the idea that so many children were orphaned and deprived of basic necessities, including access to education; and at the vision of health care

facilities that were more than subpar (overcrowded, lacking staff and without necessary medical supplies). For me it was heart-wrenching to visit the clinics and hospitals in the region ►



Meeting with villagers

► where, in one case, it was explained to me, that due to an extreme lack of medical supplies, one facility had no choice but to reuse the same intubation tube for a hundred patients. The doctor explained, "it's a choice. . . it's a matter of life or death." I've come to realize that choices, in this part of the world, take on a new meaning!

During the first week I enjoyed the bliss of the "honeymoon stage" and experienced everything in awe, despite some of the challenges I faced. All of the students eagerly worked on the various projects, which included building the Grade 2 curriculum for the elementary school, continuing various work on the campus, and developing committees and business plans. For myself, I worked tirelessly on developing various educational sessions related to STI's and contraception, assembled first aid kits and taught basic first aid, and visited many healthcare facilities to gather important data. My work was assisted by a biochemistry student from British Columbia, two nursing students from Ireland, and a villager named Grace, who was my co-learner and translator. She was my rock and inspiration, caring for not only her disabled husband, but six children, including two of her sister's children (her sister and husband had both passed away, leaving their children as orphans).

When the villagers caught wind that I was a nurse, I suddenly became the "village doctor" in their eyes, following which there wasn't a day that went by that I didn't have to pull out my first aid kit, go into my stash of over-the-counter medicines, reach for my stethoscope, lend an ear, or simply hold a hand to someone in need. I felt torn between caring and tending to the villagers' immediate needs,



Education class



Village doctor



First aid class

all the while staying on course with the projects' goals. Not an easy task for a caregiver!

Before long, I learned to adapt to the village way of life, which meant becoming inept at bathing with only the bucket of water that was provided, getting accustomed to eating the local foods (consisting of mainly beans, cooked cabbage and rice), living without electricity, wearing a chitenje, sleeping

under a protective net, getting around from place to place by foot only, learning to be very patient (the concept of time is much slower in Malawi) and most of all, learning to cohabitate with

all of the "critters" that roamed around, including chickens, goats, deadly spiders and millipedes, to name a few!

I'm happy to say that the majority of our objectives were met before our departure, in spite of the many challenges and obstacles that we had to overcome. By the last week the students had completed the curriculum for Grade 2, the first elementary school was near completion and ready to receive students, part of

the land had been cleared for the development of a soccer field, the first aid kit was completed and 17 kits were assembled and distributed to villages, educational health classes and teaching had taken place, two village committees had been formed, and much needed information had been gathered to help facilitate

our future goals. I am also glad to report that my co-learner, Grace, continues to give basic first aid to villagers and conducts a monthly teach session for other villagers regarding health related issues. The donated medical supplies that I had brought with me were distributed to a local clinic where medical supplies were scarce.

Despite the hardships that the Malawians experience on a daily basis, I have come ►

► to learn that the people of Malawi are incredibly resilient and resourceful. Above all, from what I experienced and felt during my time in Makupo, the villagers showed me their unwavering sense of happiness and contentment. It's no wonder that Malawi is known as the "warm heart of Africa." For me, I can honestly say, that it was an unbelievable journey and

truly a dream come true. I am very grateful to have had such an experience and hope to return, one day. ♦

Dale Perks, N, BScN, IIWCC

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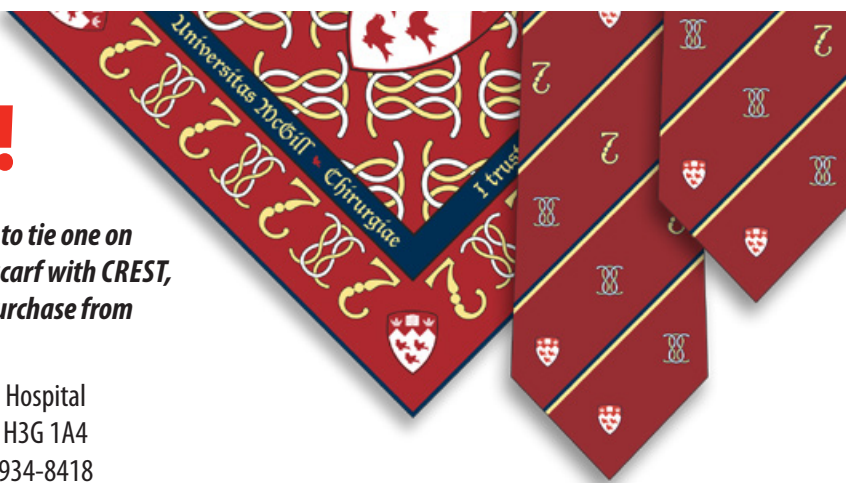
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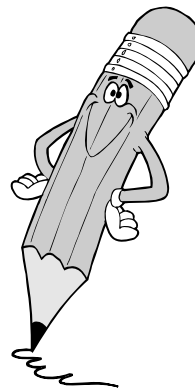
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