Comparative Healthcare Systems Program: Inspiring changes in public health through first-hand experiences of the Quebec and Taiwanese health systems

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Background: To increase awareness of future public health policymakers to the impact of health policies and culture on the delivery of health care by introducing them to comparative health policy and its role in shaping new policies.

Structure/Method/Design: The Comparative Healthcare Systems Program (CHSP) is a McGill-based organization entirely run by students. Ten carefully selected students with diverse academic backgrounds and a keen interest in public health participate in our annual public health program in Taiwan. Prior to leaving for Taiwan, the program participants take part in discussions on comparative health policy, focusing on the Quebec and Taiwanese health care systems, based on suggested readings. They also attend lectures from guest speakers playing prominent roles in the Montreal health policy scene, visit health institutions in Montreal, and interact with staff members. During their 2 weeks in Taiwan, participants visit different health care facilities, interact with staff members, attend lectures by key players in the Taiwanese health care system, and participate in cultural activities. Participants fill out a questionnaire pre- and post-program to assess how it affected their perceptions of the Quebec and Taiwanese health care systems as well as their interest in public health. Finally, participants collectively write a document reporting how they think policy and culture affects the delivery of health care, and how comparative health policy can lead to improvements in the Quebec and Canadian health care systems. The program is offered free of charge, except for airfare and certain meals.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): Students' Society of McGill University
Medical Students' Society of McGill University
McGill Global Health Programs Fund
Shu Zen College of Medicine and Management
Kao Hsiung's Medical University

Summary/Conclusion: May 2014 will mark the fifth edition of the CHSP Taiwan program. The number of applicants to our annual exchange has more than doubled since its first edition in 2010. We are now also offering, locally at McGill, an annual conference and a lecture series on public health, which were attended by more than 100 students last year alone. Starting in 2014, students from the University of California in Los Angeles (UCLA) were able to attend the CHSP Taiwan program. The number of spots available in the program has thus been doubled to 20 to accommodate these students. Our research coordinators continue to collect data from participants to conduct research on the impact of our program. Preliminary data shows that most of our participants go on to study or work in a public health-related field.

Factors important to professional progress among students of prehospital medicine in Bolivia

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Background: Emergency medical services are crucial to addressing injury, violence, and acute disease. Successful EMS development, however, is dependent on the education of prehospital providers who are trained and supported within the larger health care system.

To assist in the development of prehospital education in Bolivia, the nonprofit A Tu Lado collaborates with local medical, police, and fire agencies to build accredited courses at public universities. This strategy is guided by the hypothesis that Bolivia's current lack of accredited education or certification is impeding the development of prehospital personnel. Little is known, however, about how this hypothesis aligns with the perspectives of students enrolled in these courses. This study investigates what students perceive as the state of EMS in Bolivia and the impediments to their own professional development. It also investigates how student perceptions of health risks correlate with reported values of the region's burden of disease.

Structure/Method/Design: 16 participants were recruited from emergency medical courses affiliated with A Tu Lado and the Universidad Mayor de San Simon. Participants completed a written survey and 3-month follow-up phone interview. Students also selected what they perceived as the top 5 causes of DALYs (disability-adjusted life years) in Bolivia from a list of the 25 leading factors from the 2010 Global Burden of Disease. Responses were coded for emergent themes.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): State of EMS: 50% of respondents indicated that a lack of resources and equipment was the most serious issue facing Bolivian EMS; 50% reported prehospital providers were not adequately trained; and 63% reported a need for public education on accessing emergency care.

Impediments to professional progress: Respondents stated unanimously that access to training was their principal impediment; 31% cited poor employment opportunities; and 25% reported a need for professionalization.

Burden of disease: Respondents correctly identified 0.7 of the top 5 causes for DALYs in their geographic region (mean); 40% correctly identified road injury; 15% respiratory infection; and 15% ischemic cardiopathy. No students identified major depressive disorder or back pain.

Summary/Conclusion: The hypothesis "lack of accreditation and certification were the chief impediments to professional progress" was generally not shared by students, who perceived a lack of training, equipment, and gainful employment to be their principal impediments.

We believe this discrepancy reveals an important task for prehospital educators, who we encourage to teach about the importance of standardization in a way that connects with students' perceived needs for their community and their own professional progress. The methodology of this study provides a replicable model for investigating the perceptions of students and can help create systems for education that address student needs.

Applying a collaborative model for emergency medical education development in Bolivia and Venezuela

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Background: The WHO reports a global shortage of 4.3 million frontline health workers. At the same time, approximately 5 million persons die each year of traumatic injury. Emergency medical services are crucial to addressing these growing problems. Successful EMS development, however, is dependent on the education of prehospital providers who are trained and supported within the larger health care system.

To date, EM education in Bolivia and Venezuela has been scattered among independent agencies, each with their own training programs and certifications. International courses such as ACLS and ATLS are sometimes available, but these are often too expensive and too seldom to provide universal training.

Structure/Method/Design: To assist the development of EM education in Bolivia and Venezuela, the nonprofit A Tu Lado (ATL) collaborates with providers and public universities to build accredited courses that meet the needs of local medical, police, and fire agencies. ATL was founded by a group of undergraduate students from institutions across the United States, and works directly with students in South America to support these initiatives.

Invitations to collaborate are extended by local organizations. From this connection, ATL and its partners invite the participation of key stakeholders, including universities and emergency response groups. ATL then facilitates a three-step process:

Needs Assessment (step 1): Visit the prospective site to meet partners and stakeholders, assess community strengths and needs, and design a curriculum.

Model Course (step 2): A condensed course on prehospital care facilitated by A Tu Lado and co-taught with local instructors. This course serves as an opportunity to test the curriculum and to strengthen local partnerships.

Full Course (step 3): An expanded course taught exclusively by local instructors. The course's adoption and accreditation by a public university positions the program as a national model for replication.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): Venezuela: Grupo Venemergencia, Universidad Simón Bolívar (USB), IESA. Bolivia: Universidad Mayor de San Simón (UMSS), Mano a Mano, SAR Bolivia. United States: University of Minnesota Department of Emergency Medicine; Princeton University; Macalester College Emergency Medical Service.

Summary/Conclusion: More than 180 students have been trained through ATL-affiliated courses. USB concluded Venezuela's first university-based EM technician course in May 2014 and began its second in September 2014. UMSS began Bolivia's first integrated EM training module for medical students in 2014.

Central to the success of these projects was their collaborative foundation and the model course, which provided an opportunity for stakeholders to establish a dialogue about course content and form a coalition that could advocate for EM standardization.

Global health: Burn outreach program

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Background: Doctors Collaborating to Help Children is a nonprofit corporation that partners with multiple organizations including Massachusetts General Hospital and Shriners Hospital for Children in Boston, MA, which has established an outreach program with Ukrainian physicians to improve the care of patients with burn injuries. The goal of the program is to establish a sustainable and increasingly productive collaboration to treat burn patients in a resource-constrained environment. The program has grown from a collaborative effort with Ukrainian physicians and health care officials. With this collaboration, a multipronged approach has been developed to address the gaps in burn care as discovered by years of interaction with the medical community in Ukraine.

Structure/Method/Design: Contact was initiated with the burn unit of a single municipal hospital in Lviv, Ukraine. Patients with burn injuries were screened and selected patients were comanaged over a 3-year period by American and Ukrainian physicians. This comanagement included repeated evaluation both by telemedicine conferencing as well as annual trips with physicians from Boston, MA, traveling to Ukraine to assess patients in an outreach clinic and perform surgical procedures. Over three successive annual mission trips, a total of 123 patients, ranging from 1 to 44 years of age, were seen and evaluated by the surgical and anesthetic teams.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): In our first trip in 2011, we assessed 22 patients and operated on 5. In 2012, 38 patients were evaluated and 12 had combined surgical intervention. In our 2013 trip, 63 patients were evaluated and we operated on 22 burn victims. Multiple clinical research projects related to burn prevention and improving perioperative care have been initiated, presented at national meetings, and submitted for publication in peer-reviewed journals.

Summary/Conclusion: Our outreach program in Lviv, Ukraine strives to improve overall burn care by a multilayered approach. These elements can serve as a possible template for additional international burn outreach plans as it can be customized for both large and small interventions.

Leveraging health informatics for a global health needs assessment at home

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Background: Existing technologies facilitate rapid and easily updated reporting systems for changing situations such as epidemic surveillance (e.g., "GeoSentinel," "Distribute," etc). Knowing the location, type, and description of global health work performed by staff in a health care institution is important for collaboration, capacity building, and safety of those doing the work. However, information collection is often inefficient with no ability to track these characteristics in real time. To address this problem, health informatics was used to create an online "health map" to capture global health activities of staff at a pediatric tertiary hospital. Objectives: To pilot a mechanism for collecting real time data on global health activities of hospital staff; to characterize types of projects and partnerships and display this content on a "health map" for use by the hospital community.

Structure/Method/Design: A survey tool querying information regarding staff contact information, project type, countries of involvement, and partnerships was disseminated to staff at Boston Children's Hospital. Analysts collated responses and created a "health map." Each point on the map represents a unique project/partnership. Individuals with projects on the map can access and update information regarding project status and progress on an ongoing basis. The map was then made accessible to all.

Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract): Staff reported 86 unique projects, with physicians and nurses equally represented (37% and 41%, respectively). Attending physicians were more likely to be involved in $\geq$2 projects (relative risk, 2.1). Pediatric medicine and pediatric surgery had the majority of projects (80% and 18%, respectively) spread over subspecialties. Projects are being conducted in 42 countries. International partners were primarily academic medical centers (56%) and NGOs (34%). Four countries had multidisciplinary involvement due to formal institutional partnerships. Project themes focused on infrastructure/health systems development (23%), physician education (22%), and nursing education (18%).

Summary/Conclusion: Innovative technologies like the health map that employ crowd sourcing facilitate rapid institutional-level data