



Anesthesia Residency International Health Curriculum

“Each person is to
have an equal right
to the most
extensive basic
liberty compatible
with a similar liberty
for others” John
Rawls 1921-2002

Mission Statement

Foreign aid is defined as a voluntary transfer of supplies, knowledge or service from one country to another. International health is an expanding field in medicine that is gaining momentum seen by an increase in governmental spending, increase in number of health care workers travelling abroad and an increase in postgraduate and undergraduate involvement. At the University of Manitoba, we have seen the same increase in awareness and enthusiasm in global health. Over the last several years many residents have traveled abroad to assist in humanitarian work.

Providing helpful foreign aid is difficult and often carries many ethical and logistical considerations. We have seen many disasters caused by well-intentioned organizations as a result of lack of understanding and appreciation of the complexity of providing aid.

To help unravel and understand issues that pertain to effective aid delivery, the Department of Anesthesia has developed a global health curriculum. The curriculum is directed towards residents who will take part in humanitarian projects. The curriculum explores the history of foreign aid, navigates through types of foreign assistance, considers several public health topics, critically appraises aid efforts and discusses ethical aspect of international health. The Anesthesia U of M website will provide a list and description of foreign experiences to better match the trainee. Helpful preparatory information will be available to make the trip safe, enjoyable and above all to do no harm.



International Health Curriculum: For Anesthesia Residents Participating in an

International Health Elective

Edition 2

December 1st 2016

Corresponding author:

Gregory Klar: MD, FRCPC, MIPH

gklar@rcsi.ie

Queen's Anesthesiology and Perioperative Medicine

Anesthesiology, Victory 2

Kingston General Hospital

76 Stuart Street

Kingston, Ontario, Canada, K7L 2V7

Phone: (613) 548-7827

Co-authors:

Doug Maguire: MD, FRCPC

Angela Enright: MB, FRCPC

Anthony Roche: MD, FRCA

Curriculum Outline

Chapter 1:

Introductory paper that discusses the rationale for an International Health Curriculum (IHC) that complements an International Health Elective (IHE).

Chapter 2:

Definitions and introduction to basic components of foreign aid.

Chapter 3:

History of foreign aid and Canada's role in international assistance.

Chapter 4:

Introduction to Global Burden of Surgical Disease literature. Reading and reflective assignments are included in this chapter.

Chapter 5:

Ethical considerations of an International Health Elective as it pertains to Canmeds roles. Reflective modules are attached.

Chapter 6:

Introduction to working in a Low Resource Setting (LRS). This review is not intended to teach technical aspects of working in a LRS but rather to provide general concepts.

Chapter 7:

Precautions for work and travel whilst on an International Health Elective. A pre-departure checklist is attached.

Chapter 8:

Debriefing with preceptor following deployment.



Chapter 1

Resident International Health Education:

Rationale for an Anesthesia International Health Curriculum

Introduction:

In the last several decades there has been a growing interest by medical health providers in working abroad in underserved areas (1). This enthusiasm has been observed across many specialties in medicine and at all levels of training. Residency training programs are increasing their involvement in International Health Electives (IHE)(2). Canadian anesthesia residency programs have little formalized guidance and structure to support residents wishing to travel abroad for humanitarian

work. Since the millennium, the WHO has identified Global Burden of Surgical Disease as a global health priority (3). Anesthesia and surgical services are integral to combatting this global pandemic (4). A residency International Health Curriculum (IHC) can increase international health awareness and has the potential to improve the quality of Canadian international aid efforts (5) (6) (7).

Background:

The global burden of surgical disease is a major public health threat. There continues to be an epidemiological transition from communicable disease (infectious diseases) to non-communicable disease (NCD) including ischemic heart disease,

cancer and chronic pulmonary disease, as well as surgical disease (8). Consequently, surgery and anesthesia are becoming increasingly important players in the public health arena (9). It is estimated that 11% of global morbidity and mortality can be treated by surgical interventions (10). Regional variations are significant and, in Low and Middle Income Countries (LMICs), up to 25% of morbidity and mortality can be attributed to surgical disease (11). In decreasing order of prevalence, trauma, malignancies, congenital diseases and pregnancy complications contribute the majority of the surgical burden (12). Apart from malignancy, the surgical burden has a predilection for the young population, which could seriously affect the economic future of a country (13).

Historically, anesthetic and surgical services have been marginalized in LMICs. Dr. Paul Farmer, an internist by training, states that "Surgery is the neglected stepchild of global health" (14). The Disease Control Priorities in Developing Countries report predicts, that in the near future, NCD and surgical burden will supersede the burden of communicable diseases such as HIV/AIDS, tuberculosis and malaria (15)(16)(17). Two hundred thirty four million surgeries are performed globally every year and only a minority (3.5%) are in LMICs (15). Ironically LMICs carry the largest burden of surgical disease but have the least access to surgery. Further health inequities exist at a country level, as the wealthier and urban populations have preferred access to surgical services (14).

Shortages of trained anesthesia providers are a major contributor to the growing surgical burden. Firstly the absolute number of anesthesia providers is insufficient to respond to the large surgical demand (12). Secondly, the lack of appropriate resources limits the anesthesia providers' ability to deliver safe anesthetics, thus contributing to the morbidity and mortality (18). Lastly lack of educational resources limits the development of safe, sustainable anesthesia programs that could respond to the burden (4). For example, in Togo University hospital, mortality rate from Caesarean section is 1 in 133, largely attributable to anesthesia complications (18). Anesthetic services are even further neglected in rural areas at a primary care level (19). Uganda, which has significant anesthesia training input from United Kingdom, United States and Canada, has less than twenty physician anesthesiologists serving over 30 million people (20)(4). In contrast, United Kingdom with a population of 64 million has 12 000 anesthesiologists (4) and Canada, for a population over 30 million has close to 2 500 anesthesiologists and over 500 hundred resident trainees (21).

Rationale for an Anesthesia International Health Curriculum:

The burden of surgical disease is growing and poses a significant global threat.

The importance of anesthetic services has traditionally been overlooked and continues to be ignored (4). Canada has a large cohort of residents who are interested in international health, however little guidance and education is available to fuel this interest. Canadian anesthesiology programs

should respond to this growing enthusiasm and provide an International Health Curriculum (IHC) to improve international health education and help serve our global community (22). The remainder of the chapter will describe in three sections the rationale for an IHC: 1) For the benefit of the receiving medical program 2) For the benefit of the Canadian anesthesia residency training programs 3) For the benefit of the anesthesia residents.

For the benefit of the receiving medical program:

The WHO emphasizes the critical need to increase surgical services in LMICs (4). The epidemiological shift towards surgical and non-communicable disease necessitates the development of global anesthetic services (9). Although this need has been identified, an array of barriers limits the development of sustainable surgical programs. Understanding barriers and identifying needs are the first steps to tackle the growing surgical burden (23). The simplest approach in identifying development opportunities is to collaborate with existing medical systems and obtain local input and direction (24). Aid organizations can then adapt their humanitarian efforts to best match the needs of LMICs. Capacity and systems building through teaching, research and mentorship can have lasting effects on development (25). Public health literature is inundated with examples of well-intentioned organizations bringing harm to countries they are trying to aid (26). Thus, harmonizing our international interest with the needs of the developing programs is key for growth and sustainability (27).

Ensuring that the receiving program benefits from a trainee's presence should be the most important goal of an IHC. A pre-departure curriculum can serve as a tool to better prepare the participant for what lies ahead during an overseas rotation.

An IHC will discuss the benefits and pitfalls of a service versus teaching-based aid project. A recent study in Uganda showed that over 30% of local anesthesiologists have ethical objectives to foreign physician involvement in patient care (27). Trainee enthusiasm for "hands on" experience must be balanced within the local context. Furthermore, an IHC will explore differences in practice and standards, and discuss variations in operational flows in a LMIC environment (28). A curriculum can review public health topics and identify reasons for the differences in practice. A pre-departure curriculum can clarify and explain the role of the trainee while working abroad (28). Volunteers have a reputation of criticizing before understanding the realities of working in a low-resource setting. This is felt by receiving medical teams, and can create an atmosphere of animosity that can be detrimental to the development of sustainable aid collaborations.

Strengthening ties with Canadian residents can be beneficial for trainee anesthesiologists abroad (24). For example, Canadian residents can share educational resources at the time of the elective and beyond. Canadian trainees may become a contact to receive foreign doctors to Canada for further training. Furthermore, Canadian residents embarking on IHE may become the future of Canada's

international anesthesia involvement and establishing these contacts during residency years may improve lasting relationships and sustainability. Lastly, anesthesia departments and training programs are often scarce in developing countries (4). A Canadian trainee can serve as an example for a training program abroad. Canadian programs should strive to provide reciprocal partnerships that can provide lasting bidirectional opportunities (25).

Foreign trainees wishing to work in Canada are subject to lengthy accreditation and strict supervision to ensure safety for our Canadian patients. We owe the same respect to our international community and should observe similar processes. An IHC can prepare the resident to work in an international, low-resource setting to best serve the developing medical community.

For the benefit of the Canadian anesthesia residency training programs:

Studies have demonstrated a progressive interest among medical trainees to pursue International Health Electives (IHE) (1). The most probable explanation for this trend is due to increased awareness of global health discrepancies through increased travel, media communications, philanthropic movements and governmental and non-governmental foreign aid involvement (2). Many American and Canadian medical universities have responded to this demand and incorporated international health education into their curriculum (2) (5). Universities which endorse international health education have a

greater number of physicians who pursue global health as a career, and in turn, further the university's international health involvement (2)(29). The availability of an international health stream strongly influences ranking of a residency program (7)(2).

Anesthesiologists may provide humanitarian aid, work in underserved hospitals, visit developing anesthesia training programs or work with the national anesthesia society to provide training and educational opportunities. Building a relationship with the receiving medical institution is extremely important to allow for growth and mutual understanding (27). Trainees are travelling as Canadian university representatives and therefore need to uphold Canadian standards. Residents need to be humble and respectful of local medical infrastructure, medical facilities and medical staff and avoid criticism that is not constructive in nature. One of the goals of an IHC is to minimize the chance of social and medical misunderstandings, and, in turn, to strengthen the bonds between Canadian and receiving medical departments.

Participating in humanitarian work is costly due to overhead expenses such as administration, physician sponsorship and donations. Many residency programs financially support residents, either fully or partially, for their travels abroad. This can precipitate disputes within a department as some physicians view international work as a means for travel, vacation and avoiding responsibilities within the

department. A formal curriculum with a variety of educational and assessment modules will legitimize the provision of financial support. An IHE, in conjunction with an IHC, should be an accredited anesthesia subspecialty training block.

For the benefit of the anesthesia residents:

A preparatory curriculum offers the trainee a self-assessment tool and a chance to decide if they are indeed eligible for the elective. A curriculum can inform the trainee of the potential risks of foreign travel and provide tools to overcome such dangers (28). A pre-departure checklist will assure that the trainee is prepared and will minimize travel and licensing inconveniences. A curriculum can bring a trainee to a baseline level of global health understanding, which will allow them to seek out international health learning opportunities once in the field (22). Research has shown that universities that support international health education consequently provide better elective experiences and increase international health competency (1) (5). Although the complexity of aid provision cannot be grasped over the course of an elective, the curriculum and elective together can provide a comprehensive introduction.

Surveys and studies have demonstrated that students who embark on global health electives benefit from the experience when practicing at home (29). Trainees who have had international exposure have an increasing sense of cost effectiveness, improved physical exam skills and are more comfortable

working in low resource and rural areas (1). Lastly, cultural competency and understanding of health care discrepancies will help serve the multicultural and underserved populations in Canada (29)(2).

Upon graduating, many Canadian residents are pursuing specialization courses through fellowships, masters' courses and PhDs. During resident years, a trainee should decide on a potential career interest. International health is becoming an increasingly important career path in anesthesia and we have seen the creation of several fellowship programs such as those offered at Dalhousie University, University of Washington, Duke and Stanford Universities. An IHC can be used as a tool by a resident to explore international health as a career interest.

Residency training is busy and demanding and a resident has little time to pursue other academic interests. Planning an international health elective is time consuming and overwhelming if there is little support. The goal for an IHC is to reduce preparatory time, make the elective safe and enjoyable, and provide a better learning experience.

Conclusion:

We have entered an era where surgical disease is a significant contributor to global morbidity and mortality. These pathologies transcend international borders and have the biggest impact in LMICs especially in Sub-Saharan Africa (16). Anesthetic services remain limited in LMICs and the international anesthesia community should respond to these inequities.

International health is becoming an increasingly important part of medical education. The momentum is continuing and anesthesia departments will be called upon to respond to the growing demand (trainee enthusiasm) and need (Global Burden of Surgical Disease). To improve global anesthesia discrepancies, academic centers should become engaged and promote international health education.



References:

1. Imperato PJ. A third world international health elective for U.S. medical students: the 25-year experience of the State University of New York, Downstate Medical Center. *J Community Health* [Internet]. 2004 Oct;29(5):337-73. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/15471419>
2. Drain PK, Primack A, Hunt DD, Fawzi WW, Holmes KK, Gardner P. Global health in medical education: a call for more training and opportunities. *Acad Med* [Internet]. 2007 Mar;82(3):226-30. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/17327707>
3. Williams C. Editorial: The post-2015 development agenda, human rights, evidence, and open-access publishing. *Health Hum Rights* [Internet]. 2013 [cited 2014 Apr 27];15(2):2013-6. Available from: <http://www.hhrjournal.org/wp-content/uploads/sites/13/2013/12/Editorial-The-post-2015-development-agenda-human-rights-evidence-and-open-access-publishing-.pdf>
4. Cherian M, Choo S, Wilson I, Noel L, Sheikh M, Dayrit M, et al. Building and retaining the neglected anaesthesia health workforce: is it crucial for health systems strengthening through primary health care? *Bull World Health Organ* [Internet]. 2010 Aug 1 [cited 2014 Jul 22];88(8):637-9. Available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2908973&tool=pmcentrez&render_type=abstract
5. Hamadani F, Sacirgic L, McCarthy A. Ethics in global health: the need for evidence-based curricula. *McGill J Med ...* [Internet]. 2009 [cited 2014 Nov 4];12(2):120-5. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2997253/>
6. Taylor C. International experience and idealism in medical education. *Acad Med* [Internet]. 1994 [cited 2014 Jul 7]; Available from: <http://journals.lww.com/academicmedicine/Abstract/1994/0>

- 8000/International_experience_and_idealism_in_medical.5.aspx
7. Evert J. Developing residency training in global health: a guidebook [Internet]. 2008 [cited 2014 Jul 25]. Available from: http://books.google.com/books?hl=en&lr=&id=bS2-at0iwEgC&oi=fnd&pg=PP3&dq=Developing+Residency+Training+in+Global+Health+:+A+Guidebook&ots=rUZH2dBV3D&sig=WaAV8sLV_LRKKpLB-nULAxRPXJ8
 8. Jamison DT, Summers LH, Alleyne G, Arrow KJ, Berkley S, Binagwaho A, et al. Global health 2035: a world converging within a generation. *Lancet* [Internet]. Elsevier Ltd; 2013 Dec 7 [cited 2014 May 25];382(9908):1898–955. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24309475>
 9. Weiser TG, Regenbogen SE, Thompson KD, Haynes AB, Lipsitz SR, Berry WR, et al. An estimation of the global volume of surgery: a modelling strategy based on available data. *Lancet* [Internet]. 2008 Jul 12 [cited 2014 Jul 12];372(9633):139–44. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/18582931>
 10. Meara JG, Hagander L, Leather AJM. Surgery and global health: a Lancet Commission. *Lancet* [Internet]. Elsevier Ltd; 2014 Jan 4 [cited 2014 Dec 5];383(9911):12–3. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24332309>
 11. Groen RS, Samai M, Stewart K-A, Cassidy LD, Kamara TB, Yambasu SE, et al. Untreated surgical conditions in Sierra Leone: a cluster randomised, cross-sectional, countrywide survey. *Lancet* [Internet]. Elsevier Ltd; 2012 Sep 22 [cited 2014 Jul 20];380(9847):1082–7. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22898076>
 12. Ozgediz D, Jamison D, Meena C, McQueen K. The burden of surgical conditions and access to surgical care in low- and middle-income countries. *WHO bulletin*. 2008.
 13. Hedges JP, Mock CN, Cherian MN. The political economy of emergency and essential surgery in global health. *World J Surg* [Internet]. 2010 Sep [cited 2014 Dec 7];34(9):2003–6. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/20454792>
 14. Farmer PE, Kim JY. Surgery and global health: a view from beyond the OR. *World J Surg* [Internet]. 2008 Apr [cited 2014 Jul 17];32(4):533–6. Available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2267857&tool=pmcentrez&render_type=abstract
 15. Debas H, Gosselin R, McCord C, Thind A. Disease Control Priorities in Developing Countries. 2nd edition. Surgery. 2nd editio. New York: Oxford University Press; 2006;
 16. LeBrun DG, Chackungal S, Chao TE, Knowlton LM, Linden AF, Notrica MR, et al. Prioritizing essential surgery and safe

- anesthesia for the Post-2015 Development Agenda: operative capacities of 78 district hospitals in 7 low- and middle-income countries. *Surgery* [Internet]. Mosby, Inc.; 2014 Mar [cited 2014 Jul 20];155(3):365–73. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24439745>
17. Dubowitz G, Detlefs S, McQueen K a K. Global anesthesia workforce crisis: a preliminary survey revealing shortages contributing to undesirable outcomes and unsafe practices. *World J Surg* [Internet]. 2010 Mar [cited 2014 Jul 24];34(3):438–44. Available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2816796&tool=pmcentrez&render_type=abstract
 18. Walker I, Wilson I. Anaesthesia in developing countries—a risk for patients. *Lancet* [Internet]. 2008 [cited 2014 Nov 6];371:968–9. Available from: <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Anaesthesia+in+developing+countries+—+a+risk+for+patients#0>
 19. Pemberton J, Cameron B. Essential Surgical Services: An emerging Primary Health Care Priority. *Clin Rev*. 2010;5–10.
 20. Enright A. Review article: safety aspects of anesthesia in under-resourced locations. *Can J Anaesth* [Internet]. 2013 Feb [cited 2014 Jul 10];60(2):152–8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23229868>
 21. Baerlocher MO, Bradley J. General Anesthesia Gender patterns amongst Canadian anesthesiologists. 2006;437–41.
 22. Enright A. The Place of Global Education in Anesthesia. In: Frost EAM, editor. *Comprehensive Guide to Education in Anesthesia SE - 16* [Internet]. Springer New York; 2014. p. 205–14. Available from: http://dx.doi.org/10.1007/978-1-4614-8954-2_16
 23. Mcqueen KAK, Parmar P, Kene M, Broaddus S, Casey K, Chu K, et al. Burden of Surgical Disease: Strategies to Manage an Existing Public Health Emergency. 2009;24.
 24. Lipnick M, Mijumbi C, Dubowitz G, Kaggwa S, Goetz L, Mabweijano J, et al. Surgery and anesthesia capacity-building in resource-poor settings: description of an ongoing academic partnership in Uganda. *World J Surg* [Internet]. 2013 Mar [cited 2014 Nov 4];37(3):488–97. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23192167>
 25. Morse M. Responsible Global Health Engagement: 2014;(June):347–8.
 26. Moyo D. *Dead Aid*. 1st ed. New York: Niall Ferguson; 2009.
 27. Elobu AE, Kintu A, Galukande M, Kaggwa S, Mijumbi C, Tindimwebwa J, et al. Evaluating international global health collaborations: perspectives from surgery and anesthesia trainees in Uganda. *Surgery* [Internet]. Mosby, Inc.; 2014 Apr [cited 2014 Jul 21];155(4):585–92. Available

- from:
<http://www.ncbi.nlm.nih.gov/pubmed/24612624>
28. Crump J a, Sugarman J. Ethics and best practice guidelines for training experiences in global health. *Am J Trop Med Hyg* [Internet]. 2010 Dec [cited 2014 Nov 6];83(6):1178-82. Available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2990028&tool=pmcentrez&render_type=abstract
29. Thompson MJ, Huntington MK, Hunt DD, Pinsky LE, Brodie JJ. Educational effects of international health electives on U.S. and Canadian medical students and residents: a literature review. *Acad Med* [Internet]. 2003 Mar;78(3):342-7. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/12634222>

Chapter 2 Definitions of Aid

What is aid?

Foreign aid is defined as a voluntary transfer of supplies, knowledge or services from one country to another (1). It is an umbrella term that incorporates a variety of national and international aid entities. Bilateral aid describes assistance from one government to another, usually fiscal in nature, and is directed towards development, poverty and debt relief (1). Multilateral aid is assistance provided by organizations such as the United Nations. Examples of United Nations organizations include, World Health Organization (WHO), World Bank, International Monetary Fund (IMF), and United Nations International Children's Emergency Fund (UNICEF) among many others. Non-governmental organizations (NGOs) are aid agencies separate from the government (although can be financed by governments) that work alongside or separate from multilateral and bilateral agencies (2). Well known NGOs include International Red Cross Red Crescent Society (ICRC), Médecins Sans Frontières (MSF), World Vision and Canadian Anesthesiologists' Society International Education Foundation (CASIEF). Lastly, over the past two decades, an ever-expanding philanthropic and private aid sector is playing a major role in the global health arena (3).

Aid, in fact, is an array of different forms of assistance from a variety of organizations. To physicians, foreign aid equates to working in low resource settings; to economists,

foreign aid means grants; to public health officials, aid is vaccinations and to engineers, it is the building of roads and bridges.

Definitions of foreign aid, global health, public health and international health: Global health, public health, international health and foreign aid are commonly used interchangeably, however they are different entities. There is still some ambiguity between definitions, as described in the article published by the Lancet. "Towards a common definition of global health" (4).

Foreign aid could be considered a general term to represent any type of foreign assistance. It does not specify in which capacity aid is provided. Public health (also known as international public health) is a subspecialty in medical sciences that focuses on health issues in communities, regions and countries. An example of this would be improving water access and sanitation in a community, and promoting smoking cessation. Global health is similar to public health; however it transcends borders, addressing health on a global scale (4). Common examples of global health successes include eradication of smallpox and worldwide vaccination programs. Lastly, international health refers to health improvements that can be delivered through development and service provision. These are usually "vertical" programs, which means that projects tackle one or a few specific health issues. An example of such would be starting oral rehydration clinics in an area prone to drought or providing anesthesia in an underserved community hospital.

Describing these definitions is a matter of semantics, however it is important to know what type of aid you wish to provide. It is valuable to tease out the differences if you wish to pursue an international health elective or an international health career.

Lancet; Towards a common definition of global health: "We call for the adoption of a common definition of global health"



References:

1. Lancaster C. Foreign aid diplomacy, development , domestic politics. University of Chicago Press; 2008.
2. Załęski P. Global non-governmental administrative system: geosociology of the third sector. Civ Soc Making, Warszawa IFiS Publ. 2001;
3. Ollila E. Global health priorities - priorities of the wealthy? Global Health [Internet]. 2005 Apr 22 [cited 2014 Jun 4];1(1):6. Available from:<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1143784&tool=pmcentrez&rendertype=abstract>
4. Koplan JP, Bond TC, Merson MH, Reddy KS, Rodriguez MH, Sewankambo NK, et al. Towards a common definition of global health. Lancet [Internet]. 2009 Jun 6 [cited 2014 Aug

Chapter 3 History of Foreign Aid and Canada's Involvement

Brief History of Foreign Aid (1800-2014):

It is difficult to trace the origin of foreign aid to a certain date or event. Historically countries and empires would donate and support allies in times of need or war to help populations in distress. One of the first foreign aid public health initiatives dates back to 1803 by the Spanish government. Physician Xavier de-Balmis vaccinated large parts of South and Central America, Caribbean, Philippines and China for smallpox (1). Another important historical event was in 1859 when the Swiss businessman, Jean-Henri Dunant, witnessed the Battle of Solferino. Dunant was shocked by the lack of respect for human life and quickly organized a medical aid team which provided non-discriminatory, basic medical care to surviving soldiers (2). Upon return to Geneva, Jean-Henri Dunant was instrumental in discussing health as a human right, which culminated in the creation of International Red Cross Societies in 1864 at the Geneva Convention. World War I prompted the creation of the League of Nations whose mandate was to promote world peace and address basic principles of human rights.

It was not until the atrocities of World War II that the international community responded and created the United Nations system (UN). The UN mandate is to promote international cooperation, ensuring economic, military and environmental stability,

and adherence to The Charter of Human Rights (3). UN's World Health Organization, along with an array of other programs (UNAIDS, UNICEF, UN-Women), advocates for global health. Determinants of health are not solely reliant on access to medical care but are related to the degree of poverty, economic stability, peace, human rights, gender equality, development, water access and education (4). The UN has a plethora of programs, which oversee the non-medical components of public health. Examples include the World Bank Group, International Monetary Fund (IMF), World Trade Organization (WTO) and United Nations Educational Scientific and Cultural Organization (UNESCO) (5). Figure 1.

The initial UN, US and Canadian post-war efforts were geared to rebuilding war torn countries, and infectious disease control (6) (3). Later in the 1960's, the growing donor community shifted their attention towards Africa, South America and parts of Asia. It was the era in which colonial powers were removing their military dominance in the geographical south, leaving countries stranded with little governmental, economic or health care infrastructure (7). The WHO was the voice for health during the transition from colonial rule. Donations became progressively larger with little transparency. Little attention was paid to equity, sustainability and development (8). By the 1970's the WHO emphasized that health care accessibility and primary health care goals were not being realized (7). In 1978, The Alma Ata declaration brought the international community together to reiterate the importance of health care accessibility

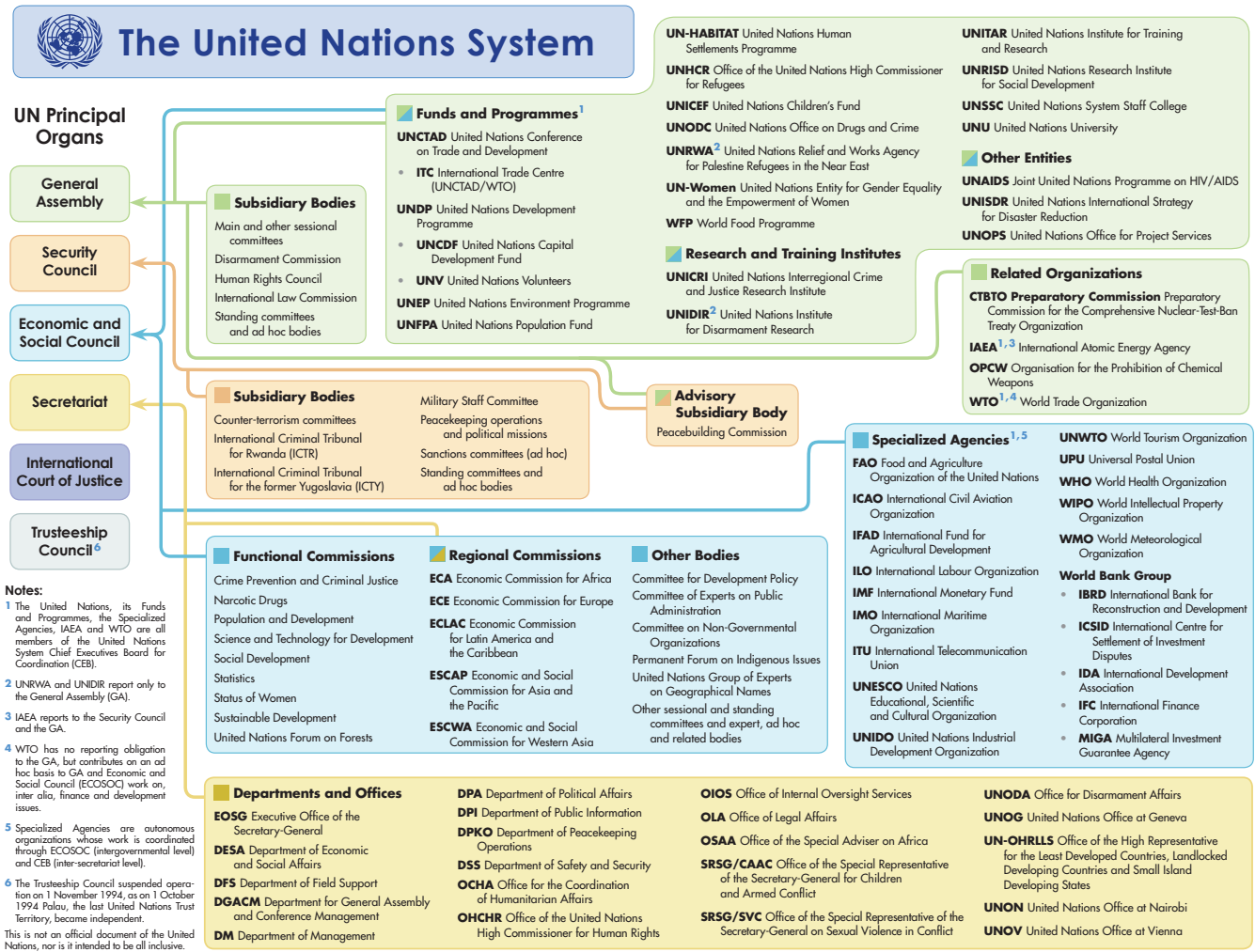


Figure 1

and a goal of “health for all” by the year 2000 (9). Throughout the 1980’s, humanitarian assistance continued to flourish. It is estimated that, by 1980, over a trillion US dollars were donated to Africa (8). In the 1990’s, musicians, actors and influential global figures popularized the idea of foreign aid (8). This increased altruism and the guilt of the geographical north to continue to donate. Large vertical programs were being instituted yet comprehensive, sustainable programs were being undermined. This was further exacerbated by the increasing private-public partnership, which favored policies that had better financial returns, yet again undermining health care at a grass root level (10). During late 1980’s and 1990’s vertical programs focused their attention towards the HIV/AIDS epidemic, arguably diverting attention away from other global health threats (11).

By the year 2000, the Alma Ata goals were not realized. The same problems, which existed in Sub-Saharan Africa in 1970, remained a reality. Maternal Mortality Ratio (MMR), access to obstetrical care, Infant Mortality Rate (IMR), access to primary health care and poverty continued to be major issues (7). The international community agreed upon the Millennium Development Goals (MDGs) to improve these shortcomings by 2015. Although many MDGs do not specifically address health care, health determinants are dependant on economic, social, environmental and governmental stability (4). MDGs 4, 5 and 6 target specific health care deficiencies including child mortality, maternal mortality and the fight against

HIV/AIDS malaria and other communicable diseases. As we transition into the post-2015 era, varied success with MDG targets are reported. For example, in Uganda, many economic and poverty targets have been realized, however MMR remains high, falling short of 2015 targets; prevalence of HIV/AIDS is increasing; perinatal care remains limited; access to safe surgery and safe cesarean section in the community is restricted (12).

At the turn of the century, the WHO identified Non Communicable Diseases (NCDs) as the largest global health threat (13). NCDs are a conglomerate of diseases that include cardiovascular disease, chronic respiratory disease and cancer. These pathologies share common etiological risk factors that involve behavioral risk factors such as physical inactivity, obesity and smoking (14). It is estimated that NCDs will contribute to 60% of deaths globally, and the WHO predicts that the greatest increase in NCDs will be seen in African countries. For example, the WHO estimates that by 2030 cardiovascular disease will be the leading cause of death globally and 80% of global cardiovascular deaths will occur in LMICs (15). NCDs are mistakenly thought of as diseases of High Income Countries.

In 2010, the WHO identified that the global surgical burden results in over 5 million preventable deaths (10% of deaths globally) and 15% of total Disability Adjusted Life Years (DALYs) (16) (17). Epidemiological data suggest that the burden of surgical disease affects the young, the population that is the economic driving force of a country (18). The

WHO advocates that basic surgical services, which include basic trauma care and surgical obstetrical care, are necessary to tackle the Global Burden of Surgical Disease (19). In 2013 Lancet Commission on Global Surgery was created to examine global surgical inequities and provide recommendations to overcome barriers that limit global access to safe surgical services (18).

Some efforts have been made to improve the surgical burden by instituting programs such as the Global Initiative on Emergency and Essential Surgical Care (GIESSC) and the Essential Surgical Care toolkit (20). As we transition to the post 2015 era, it has become evident that essential surgical services and NCDs are major public health threats (14). The end result is a large surgical burden in a patient population with advanced medical comorbidities (18).

What is Canada's role in Global Health?
Post war, Prime Minister Mackenzie King backed large aid donations to Europe and joined the President Truman led Marshall plan. Results were favourable, giving the donor community confidence that large vertical programs work (6). In the 1950s Canada joined the Colombo Plan, which had similar ideology to the Marshall plan but extended to commonwealth countries around the world (21). Quickly the catchment area expanded to Asia, Caribbean and Africa with special attention to commonwealth and francophone countries, explaining Canada's large presence in Haiti (22).

In the late 1960s, Pierre Trudeau, along with Lester Pearson, further

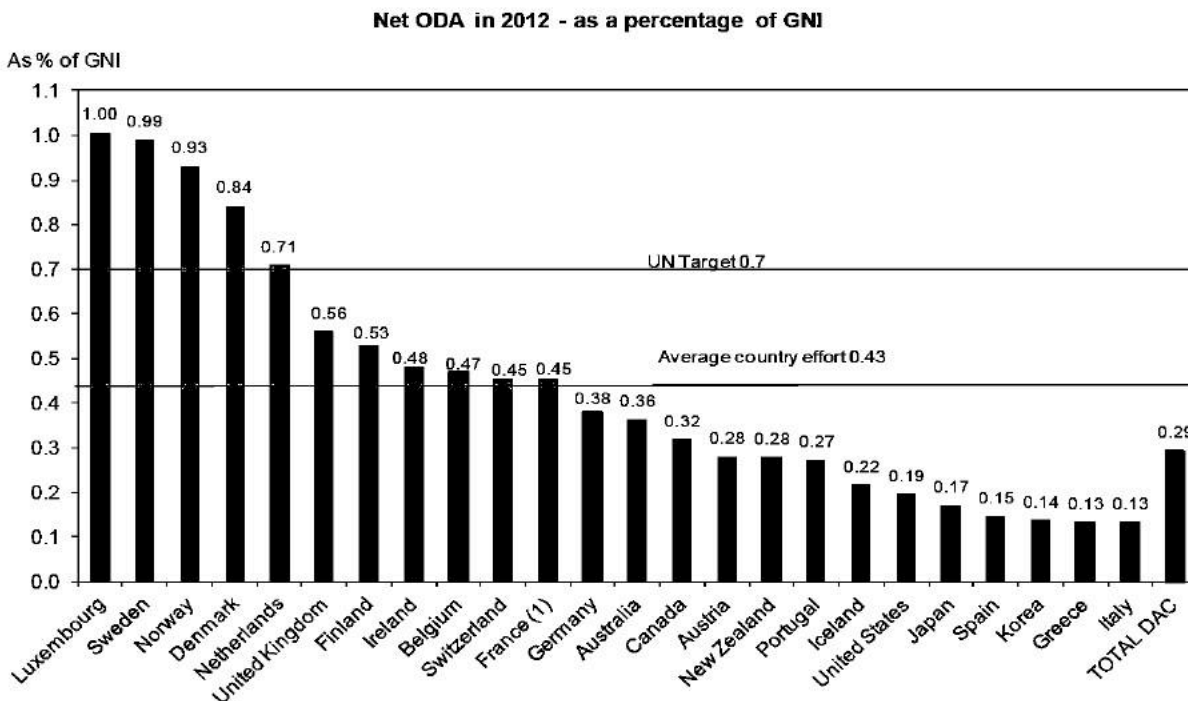
expanded Canada's international engagements (23). Canada continued to be an important contributor to multilateral aid organizations specifically World Bank, WHO, WFO and UNICEF. Furthermore, the Canadian International Development Agency (CIDA) was created, to oversee international activities separate from the United Nations system. In 1970, the International Development Research Center (IDRC) was established to promote international research, with the goal to align Canada's foreign assistance to match international interest (23). Canada's NGO sector is continuously expanding and the Government's NGO funding is increasing in parallel. Examples include, Canadian government donated over a billion dollars to Haiti between 2006 and 2012, Canadian Red Cross gained a 1.2 billion dollar budget for the Haitian earthquake, and existing and new Haitian NGOs were being sponsored by CIDA (22).

Assessing a country's foreign aid involvement and expenditure is difficult as it is nearly impossible to track all financial and resource flows. Historically, foreign aid contributions were measured as a percentage of Gross National Income (GNI), which is known as the Official Development Assistance (ODA). Non-ODA support is through private, non-governmental and philanthropic assistance, which accounts for a major contribution of overseas involvement. 2012 data confirms that Canada is the sixth net ODA contributor globally, with US, UK, Germany, France and Japan in the lead. Canada surpasses the USA when comparing aid contribution to Gross National Income (GNI). (24) High Income Countries have an unofficial

agreement to spend 0.7% of GNI towards international aid (25). This is a target which Canada has not yet reached.(26). Figure 2

“Explore gapminder.org and compare health & development indices that interest you!”

Figure 2



History of Global Health Education:

Global health topics have been taught for over a century. The first public health education program was established in 1899 by Sir Patrick Manson at The London School of Tropical Medicine and Hygiene (27). Other well recognized public health schools include John Hopkins, established in 1920, and the University of Sydney School of Public Health in 1930. In 1947 and 1951, the World Medical Association and the International Federation of Medical Students’ Association were created to increase awareness of medical concerns that cross regional and international boundaries. Supported by the WHO, in 1991, the Global

Health Education Consortium was founded to promote medical education at an undergraduate and postgraduate level. Since then, many medical school and residency training programs have incorporated varying degrees of global health education into their curriculums. Recently several universities have developed fellowship-training programs in international health. Some are for one year of international training, and others provide a two-year program combined with a Master’s of International Public Health. Presently Dalhousie University is the only Canadian university offering an international health fellowship in anesthesia.

References:

1. Mark C, Rigau-Pérez JG. The world's first immunization campaign: the Spanish Smallpox Vaccine Expedition, 1803-1813. *Bull Hist Med* [Internet]. 2009 Jan [cited 2014 Jun 26];83(1):63-94. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/19329842>
2. Bennett A. *The Geneva Convention: The Hidden Origins of the Red Cross*. First edit. The History Press; 2006.
3. Lucas A. WHO at country level. *World Health*. 1998;351:743-7.
4. Irwin A, Scali E. Action on the social determinants of health: learning from previous experiences. WHO [Internet]. 2005 [cited 2014 Nov 28];(March). Available from: <http://www.popline.org/node/216704>
5. UN. The United Nations System [Internet]. United Nations Department of Public Information. 2013. p. 1. Available from: http://www.un.org/en/aboutun/structure/pdfs/UN_system_chart_lettercolor_2013.pdf
6. Granatstein JL, Cuff RD. Canada and The Marshall Plan, June — December 1947. *Hist Pap* [Internet]. 1977 [cited 2014 Jun 29];12(1):196. Available from: <http://id.erudit.org/iderudit/030828ar>
7. Hall JJ, Taylor R. Health for all beyond 2000: the demise of the Alma-Ata Declaration and primary health care in developing countries. *Med J Aust* [Internet]. 2003 Jan 6;178(1):17-20. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/12492384>
8. Moyo D. *Dead Aid*. 1st ed. New York: Niall Ferguson; 2009.
9. Alma-Ata Declaration. Alma-Ata; 1978 p. 1-8.
10. Ollila E. Global health priorities - priorities of the wealthy? *Global Health* [Internet]. 2005 Apr 22 [cited 2014 Jun 4];1(1):6. Available from: http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1143784&tool=pmcentrez&render_type=abstract
11. Shiffman J. Has donor prioritization of HIV/AIDS displaced aid for other health issues? *Health Policy Plan* [Internet]. 2008 Mar [cited 2014 Jun 4];23(2):95-100. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/18156161>
12. Ministry of Finance. *Millennium Development Goals Report for Uganda 2013*. 2013;(September 2013). Available from: http://www.ug.undp.org/content/dam/uganda/docs/UNDPUG-2013MDGProgress_Report-Oct2013.pdf
13. WHO. Report on the progress made in implementing the 2008-2013 Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Diseases (June 2008 - February 2010) [Internet]. First NCDnet Global forum WHO. 2010 p. 1-10. Available from: <http://www.who.int/ncdnet/en/>
14. Jamison DT, Summers LH, Alleyne G, Arrow KJ, Berkley S, Binagwaho A, et al. Global health 2035: a world converging within a generation. *Lancet*

- [Internet]. Elsevier Ltd; 2013 Dec 7 [cited 2014 May 25];382(9908):1898-955. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24309475>
15. WHO. Cardiovascular Disease [Internet]. WHO bulletin. 2013 [cited 2014 Sep 20]. Available from: <http://www.who.int/mediacentre/factsheets/fs317/en/>
 16. Debas H, Gosselin R, McCord C, Thind A. Disease Control Priorities in Developing Countries. 2nd edition. Surgery. 2nd editio. New York: Oxford University Press; 2006;
 17. Pemberton J, Cameron B. Essential Surgical Services: An emerging Primary Health Care Priority. Clin Rev. 2010;5-10.
 18. Meara JG, Hagander L, Leather AJM. Surgery and global health: a Lancet Commission. Lancet [Internet]. Elsevier Ltd; 2014 Jan 4 [cited 2014 Dec 5];383(9911):12-3. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24332309>
 19. Ozgediz D, Jamison D, Meena C, McQueen K. The burden of surgical conditions and access to surgical care in low- and middle-income countries. WHO bulletin. 2008.
 20. Azgediz D, Jamison D, Cherian M, McQueen K. The burden of Surgical conditions and access to surgical care in low- and middle-income countries. WHO Bull [Internet]. 2008; Available from: <http://www.who.int/bulletin/volumes/86/8/07-050435/en/>
 21. Maniki A. The Story of The Colombo Plan. The Colombo Plan Secretariat. The Colombo Plan Secretariat; 2012.
 22. CIDA. Canada-Haiti Humanitarian Alliance Fund Project Evaluation [Internet]. Department of Foreign Affairs, Trade and Development Canada. 2009. Available from: <http://www.acdi-cida.gc.ca/acdi-cida/acdi-cida.nsf/eng/EMA-218132115-PJM>
 23. Brent C, Wood B, Ehrhardt R. Foreign Aid. The Canadian Encyclopedia historuca Canada. 2006.
 24. OECD. NET OFFICIAL DEVELOPMENT ASSISTANCE FROM DAC COUNTRIES IN 2012 [Internet]. 2013. Available from: http://www.oecd.org/dac/stats/documentupload/ODA_2013_Tables_and_Charts_En.pdf
 25. Nations U. Report of the International Conference on Financing for Development. 2002.
 26. Paul J, Pistor M. Official Development Assistance Spending. Parlimentary Inf Res Serv Libr Parliment. 2009;5-9.
 27. London School of Hygiene & Tropical Medicine [Internet]. London School of Hygiene & tropical Medicine. 2014. Available from: <http://www.lshtm.ac.uk/library/archives/history/frieze/manson.html>

Chapter 4:
Global Burden Of Surgical Disease workshop

Assignment 1

The public health literature describes the critical shortage of anesthesia and surgical services in LMICs. Read the following WHO bulletin: “The burden of surgical conditions and access to surgical care in low and middle income countries” Link n# 1, attached at the end of the document (1). This short document provides a good introduction to global burden of surgical disease literature. After completing the first reading, read the study regarding anesthesia shortages. “Global Anesthesia Workforce Crisis: A preliminary Survey Revealing Shortages Contributing to Undesirable Outcomes and Unsafe Practices.” Link n# 2 (2) .

Question 1: In your opinion what are the main barriers to providing sustainable surgical services in LMICs? Max 500 words.

Assignment 2

There has been an epidemiological transition from communicable diseases to non-communicable diseases (NCDs). The WHO projects that by 2030 NCDs will be responsible for the majority of deaths globally with the greatest burden in LMICs. Read the following WHO bulletins:

Link n# 3 (3)

Link n# 4 (4)

Question 2: What are the main factors that contribute to the growing epidemic of NCDs? What effect do you think this may have on the delivery of safe surgery and anesthesia in LMICs? Max 500 words

Assignment 3

Over the past 60 years, global health priorities have changed and evolved. At the creation of the United Nations system, infectious diseases and food and water deprivation were major priorities. After Alma Ata, primary health care (PHC) was added into the priority list. In the late 1980s and 1990s, HIV received significant attention from the global community. At the turn of the millennium, the Millennium Development Goals (MDGs) were created to focus on global inequities. Simultaneously NCDs and surgical disease became global health priorities. As we transition to the post 2015 era, old priorities remain and new priorities arise. Read the following literature regarding global burden of disease and global health priorities.

Link n# 5 (5)

Link n# 6 (6)

Question 3: In your opinion, are surgical services a global health priority? Max 500 words

Links:

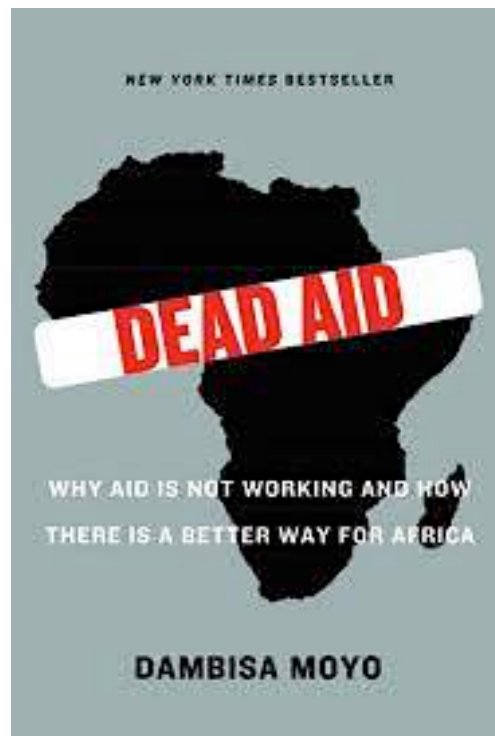
- 1) <http://www.who.int/bulletin/volumes/86/8/07-050435.pdf>
- 2) <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2816796&tool=pmc&rendertype=abstract>
- 3) <http://www.who.int/mediacentre/factsheets/fs355/en/>
- 4) http://www.who.int/nmh/events/2013/revised_draft_ncd_action_plan.pdf
- 5) <http://www.ncbi.nlm.nih.gov/pubmed/24309475>
- 6) <http://fhs.mcmaster.ca/surgery/documents/PembertonMUMJ.pdf>

NB: Links and references follow the same numbering system.

Recommended books:

- 1) Mountains Beyond Mountains by Tracey Kidder
- 2) Awakening Hippocrates: a primer on health, poverty, and global service by Edward O'Neil
- 3) Dead Aid by Dambisa Moyo

“World leading economists include Jeffrey Sachs, Bill Easterly and Dambisa Moyo. Jeffrey Sachs continuously supports the ideology that the geographical north does not donate enough. <http://jeffsachs.org/2009/01/jeffrey-sachs-on-cbc/>. William Easterly, agrees that the majority of aid is distributed inappropriately. Dambisa Moyo accuses international aid of perpetuating poverty”. Many good interviews and debates are easily found over the Internet. What is your opinion?”



References:

1. Ozgediz D, Jamison D, Cherian M, McQueen K. The burden of Surgical conditions and access to surgical care in low- and middle-income countries. WHO Bull [Internet]. 2008; Available from: <http://www.who.int/bulletin/volumes/86/8/07-050435/en/>
2. Dubowitz G, Detlefs S, McQueen K a K. Global anesthesia workforce crisis: a preliminary survey revealing shortages contributing to undesirable outcomes and unsafe practices. World J Surg [Internet]. 2010 Mar [cited 2014 Jul 24];34(3):438-44. Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2816796&tool=pmcentrez&rendertype=abstract>
3. WHO. Noncommunicable diseases [Internet]. WHO Fact sheet. 2013. Available from: <http://www.who.int/mediacentre/factsheets/fs355/en/>
4. WHO. Global action plan for the prevention of noncommunicable disease 2013-2020. World Heal Organ [Internet]. 2013; Available from: http://apps.who.int/iris/bitstream/10665/94384/1/9789241506236_eng.pdf
5. Jamison DT, Summers LH, Alleyne G, Arrow KJ, Berkley S, Binagwaho A, et al. Global health 2035: a world converging within a generation. Lancet [Internet]. Elsevier Ltd; 2013 Dec 7 [cited 2014 May 25];382(9908):1898-955. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24309475>
6. Pemberton J, Cameron B. Essential Surgical Services : An emerging Primary Health Care Priority. Clin Rev. 2010;5-10.

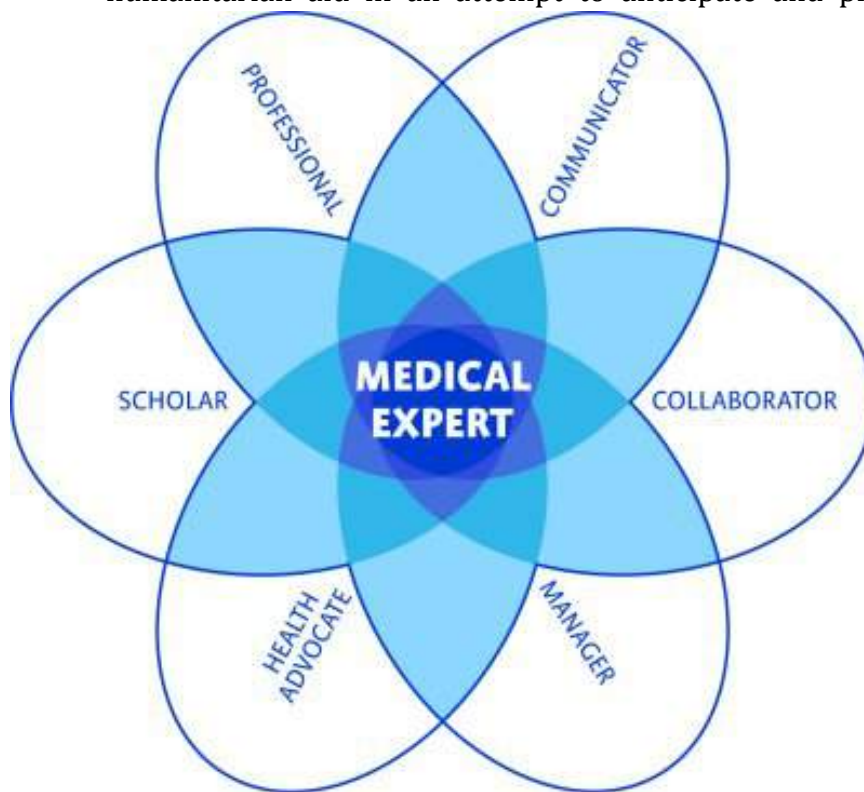
Chapter 5

Using CanMEDS roles to assess ethical considerations of an International Health Elective.

Introduction:

There is vast amount of literature that exposes ethical issues of providing aid (1)(2). Every mode of aid delivery has its own unique ethical burden (3). Residents pursuing an IHE will be exposed to ethical dilemmas. A distinction needs to be made between Public Health Ethics and ethical dilemmas that may be encountered when on an IHE. Public Health Ethics is the study of ethical concepts that justify or refute our actions in instituting health interventions (4).

For the purpose of an IHE, a trainee should consider ethical aspects of providing humanitarian aid in an attempt to anticipate and prevent certain undesirable



THE
CANMEDS
ROLES FRAMEWORK

In the debriefing period post elective, we encourage discussion regarding ethical concerns with your preceptor.

situations (5). Previous Canadian global health literature suggests that CanMEDS roles can be used to discuss and assess global health competencies and tackle ethical issues (6)(3).

In the following text, every CanMED role will be discussed in the context of an IHE. A scenario describing a potential ethical dilemma will be attached to every CanMED role. We recommend working through these exercises prior to departure (7)(1). During the elective period, the resident must reflect on and discuss these situations (or similar witnessed situations) with a

"The CanMEDS Physician Competency Framework describes the knowledge, skills and abilities that specialist physicians need for better patient outcomes" The RCPSC.

Communicator:

Many Canadians have an advantage when working abroad thanks to a bilingual heritage. Despite this, communication barriers may exist even if local staff speaks English or French, as local dialects may vary greatly. Furthermore, communication breakdowns can develop between English/French speaking staff and medical volunteers due to cultural differences. It is important to tune in on mannerisms and social interactions during the course of the elective to avoid communication breakdown and misunderstandings. Obtaining informed consent is a frequent problem that requires careful situational evaluation (1).

Scenario: You are booked to work with a non-physician anesthesia provider in Kinshasa in a general surgery room. The first case is a resection of a gastrointestinal tumor requiring a large midline laparotomy. The anesthesia provider administers 200 mcg of fentanyl at the start of the case and 5 mg of morphine at the end. In your practice the patient would have had an epidural or a larger dose of long acting narcotic. You ask the anesthesia provider if there is more morphine for the patient, but he replies, "the patient will be ok". You take the patient to recovery room and, while the next case is started, you attempt to assess the pain. The language barrier with the patient is significant not allowing for a proper assessment. What is your role as a communicator in the management of this patient?

Collaborator:

Collaborator, as defined by the Royal College, is a physician who effectively

works within a healthcare team to achieve optimal patient care. It is easier to provide optimal care when working in a familiar environment and when professional roles are clearly defined. This changes whilst working abroad and it is often difficult to know if you should be viewed as a trainee, teacher or a colleague. Careful case-by-case interactions need to be evaluated, as you do not want to come across as the all knowing, pompous, foreign doctor who has never been exposed to, or worked in, a resource limited setting with advanced pathology. Furthermore, if providing a teaching component, it is important to teach context sensitive anesthetic practices (5). Constantly referring to "at home since we have" does not develop expertise and may create a sense of helplessness and frustration.

Scenario: You are a third year resident working in a tertiary hospital in Namibia. You ask to join an overnight call shift and you get slated with a junior anesthesia trainee who started training 6 months ago. After several cases, the surgeon books a Congenital Diaphragmatic Hernia (CDH) repair. You have never assisted in a CDH case but you are aware of the anesthetic considerations: avoid increase in PA pressures, potential for multiple cardiac anomalies, tension pneumothorax and pulmonary hypoplasia, and the challenges of a neonatal patient. You are aware that this is a high-risk case, and you advocate that the patient should have a cardiac echo pre-operatively and that consideration should be given to delaying the surgery until tomorrow as the patient has not yet "declared himself". The surgeon pressures you to go ahead with the case. How would

you manage the situation and how would collaborate in this situation?

Manager:

When participating in, and inquiring about, an IHE, you become the manager of your international experience. Managerial responsibilities include choosing an educationally beneficial elective that is providing effective aid. During the elective period, you need to manage time to best complement the health care system that you are trying to aid through either teaching or service provision. If providing a service, be very careful with resource use and allocation. It is very important that your relative inexperience in working in a resource-limited setting does not add to the burden of limited resources.

Scenario: You are alone on the obstetrical floor in a peripheral hospital in Tanzania. A young mother is brought in from a village 50 kilometers away with post-partum hemorrhage. The bleeding is ongoing and the initial vitals include BP 55/25, HR 135, RR 30, SpO₂ not detectable. You inquire about the duration of the bleeding and the family through an interpreter mentions that she was unresponsive for at least half an hour. You find a peripheral IV and start a crystalloid resuscitation. You tell the training obstetrician to call the blood bank and get emergency blood. The obstetrical trainee questions your resuscitative efforts and tells you that blood resources are limited and that the patient had a prolonged period of hypotension. What are the managerial responsibilities in this obstetrical emergency and what are the ethical concerns in initiating resuscitation?

Consider post resuscitation resource allocation in your answer.

Health Advocate:

Canadian residency training programs are structured, standardized and highly regarded around the world. Our rigorous training gives us an opportunity to be exemplary health advocates. When practicing in a resource limited setting, health advocacy opportunities are abundant. Although it may be intuitive, it is important to advocate selectively in a context sensitive manner. Furthermore, one should avoid constantly referring to "how we do it at home" because you are not at home and home practice is not always better.

Scenario: On an elective, you are scheduled to complete a neuro-anesthesia slate with a training anesthesiologist. Several craniotomies for pediatric brain abscesses are being performed. You notice that the Safe Surgery Checklist is not being performed. Furthermore you notice that the anesthetic consists of inhalational induction with halothane and maintenance with halothane. Isoflurane is available but not in large quantities. You identify two potential learning opportunities, which one do you think is more pressing and why?

Scholar:

International electives should be complemented by scholarly activities to benefit personal learning objectives and to better serve the population you are trying to assist. The trainee must prepare him or herself for work in a LRS, recognizing that pathology may be very different from Canada. It helps

to understand the cultural, political and medical systems in order to facilitate transition. The trainee should consider any environmental or geographical variations, such as working in extremes of weather or high altitude. Lastly, research is flourishing in LMICs and a trainee may ask to take part in such activities.

Scenario: You are working in Gambia and notice that the labor floor received a large donation of epidural sets from China. You also note that the laboring women do not receive epidurals for labor analgesia. You are eager to take part in a research project and talk to local staff about setting one up. The proposal is: "To assess Visual Analogue Pain Scores and satisfaction of patients who receive an epidural as compared to patients with standard care: A RCT of 50 patients in Gambia, Africa".

What are some ethical considerations you may face when performing such a study? What is not context sensitive in this project?

Professional:

Professionalism is the commitment to the patient and the profession through ethical practice and a high standard of behavior. Medical volunteers need to demonstrate commitment to the destination health care system and should try to build lasting relationships to further develop international collaboration.

Scenario: You travel to Ethiopia for a medical elective for 3 weeks. The first several days were extremely difficult due to a variety of factors; new environment, new people, and poor accommodation. You meet a local trainee and he tells you about a

gorgeous Safari in the northern part of the country. Because you realize that your impact is minimal and you feel that you are "in the way," you plan on a safari for the following week. Since you are unfamiliar with the local transportation system, you ask the trainee to drive you. What are some potential ethical considerations in this scenario?

Medical Expert

Being a medical expert is expected of every physician practicing in Canada as per the Royal College mandate of Maintenance of Certification. When working abroad such expectations tend to be more lenient. This is ironic, as the work abroad is often more challenging and requires more scholarly commitment and expertise. It is the duty of medical volunteers to improve their knowledge in international health topics. Residents must offer context sensitive medical care and provide location sensitive teaching. Helpful tools include international health courses and working under the guidance or supervision of an experienced volunteer. Lastly, knowing your limitations is crucial, as you should always continue to practice (in so far as you can) at the same standard that you would adhere to in Canada.

Scenario: You are a PGY2 resident working abroad on a three-week elective. You are working during the day with a non-physician anesthesia provider in the orthopedic trauma room. It is the end of the day and an urgent case is added to your slate. The patient's history is significant for an uncorrected Tetralogy of Fallot (TOF), with an open fracture from a fall likely secondary to a "tet" spell. The newly

donated anesthetic machine is not working and consequently the Anesthetic Officer combines two old machines to provide a working anesthetic circuit. No end-tidal CO₂ or agent monitoring is available. You identify many gaps in the anesthetic management of this patient; you have not yet done your pediatric rotation and have never managed anyone with a TOF. The Anesthetic Officer asks for your help.

What do you do? Identify some ethical considerations with respect to proceeding and delaying the operation. The surgeon tells the Anesthetic Officer to proceed immediately, what role should you play?

Other ethical considerations:

Social norms:

It is expected that the medical volunteers will inquire about social and cultural norms before arriving in a country. Canada's relatively liberal social norms may not be accepted and appreciated around the world. Religious standards and gender interactions can vary and must be respected. Before embarking on a clinical rotation abroad, it is crucial to anticipate potential cultural challenges and to take preventive measures.

Publicizing your trip:

Travelling abroad and providing medical care is exciting and can be life and career changing. Until you have travelled and provided a service, be humble about the trip. An international elective can be very disappointing to a trainee, as you might have envisaged something completely different. It is important not to lose faith in this line of work, as

there are many different ways a medical professional can provide effective foreign aid. Be mindful of posting and adding your experience on social media forums. One must respect the privacy of the patients in the same manner as we do in Canada.

Conclusion

There are many ethical concerns that may arise during the duration of an IHE. Preparatory work helps to anticipate and prevent certain ethically uncomfortable situations. Prior to departure it is strongly recommended to complete the Johns Hopkins on-line ethics course created by Dr. DeCamp. Open the following link to complete the online coursework:

<http://www.ethicsandglobalhealth.org>. Residents who wish to pursue global health as a career should consider supplementing their education with a Public Health Ethics course, which is beyond the scope of an IHE.



References:

1. DeCamp M, Rodriguez J, Hecht S, Barry M, Sugarman J. An ethics curriculum for short-term global health trainees. *Global Health* [Internet]. *Globalization and Health*; 2013 Jan [cited 2014 Nov 5];9(1):5. Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=3598721&tool=pmcentrez&rendertype=abstract>
2. Moyo D. *Dead Aid*. 1st ed. New York: Niall Ferguson; 2009.
3. Hamadani F, Sacirgic L, McCarthy A. Ethics in global health: the need for evidence-based curricula. *McGill J Med ...* [Internet]. 2009 [cited 2014 Nov 4];12(2):120–5. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2997253/>
4. Childress JF, Bernheim RG. Public health ethics. Public justification and public trust. *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz* [Internet]. 2008 Feb [cited 2014 Oct 24];51(2):158–63. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/18259709>
5. Enright A. The Place of Global Education in Anesthesia. In: Frost EAM, editor. *Comprehensive Guide to Education in Anesthesia SE - 16* [Internet]. Springer New York; 2014. p. 205–14. Available from: http://dx.doi.org/10.1007/978-1-4614-8954-2_16
6. Goecke ME, Kanashiro J, Kyamanywa P, Hollaar GL. Using CanMEDS to guide international health electives: an enriching experience in Uganda defined for a Canadian surgery resident. *Can J Surg*. 2008 Aug;51(4):289–95.
7. Crump J a, Sugarman J. Ethics and best practice guidelines for training experiences in global health. *Am J Trop Med Hyg* [Internet]. 2010 Dec [cited 2014 Nov 6];83(6):1178–82. Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2990028&tool=pmcentrez&rendertype=abstract>

Chapter 6 Working in a low resource setting:

Working abroad in a low resource setting (LRS) is filled with challenges and may be daunting. Canadian residents rarely work in a LRS as operating rooms in Canada are held to a high standard, regardless of geographical location. Furthermore, Canadian residency programs are primarily centered in tertiary settings that are complemented by modern equipment. Consequently, residents travelling on an International Health Elective (IHE) may be faced with equipment and pathology unknown in Canada. There is no recipe for working comfortably in a LRS however several topics should be considered prior to departure.

LRS is a general term that describes any type of resource limitation. These might include manpower, biomedical equipment, medicines, and access to healthcare. In LMICs, lack of trained anesthesia providers is the largest barrier to providing safe anesthesia and surgery (1)(2). In Democratic Republic of Congo, there are 0.02 anesthesia providers per 100 000 people and in Canada there are over 7 anesthesiologists per 100 000 population, not including residents and anesthesia assistants (1)(3). The majority of anesthesia providers in sub-Saharan Africa are non-physician providers commonly referred as Anesthetic



Officers (AOs) (4). Task shifting to non-physician providers is extremely important to help with the growing surgical burden (5). Despite anesthesia task shifting, there continues to be a critical shortage of anesthesia providers (1). Furthermore the lack of physician anesthesiologists, who can lead and develop anesthesia programs, perpetuates shortages and neglects medical education. A study in Uganda demonstrated that only half of Anesthetic Officers have access to basic anesthesia

texts and are rarely able to attend CME courses (4). Educational support by foreign residents to both physician and non-physician providers can be valuable (6) (7). Residents who teach on international electives need to teach context sensitive information.

Anesthesia equipment limitations tend to be extremely variable and in a constant state of fluctuation. A study in Uganda showed that only a minority (6%) of hospitals had the means to provide safe anesthesia for a cesarean section (4). Donation of anesthesia equipment to LMICs is common. However there is poor understanding among donors of what will and will not function in the recipient setting. There is generally no biomedical follow up of donated equipment. Frequently the end result is an accumulation of modern medical equipment useless in the low resource environment.



"The Glostavent® machine is designed to provide safe inhalational anesthesia without electricity and compressed gases meeting standards of the WFSA performance standard for machines for Low and Middle Income Countries.
www.diamedica.co.uk/english/product_details.cfm?id=196"

Anesthesia machines, such as the Glostavent and the Universal Anesthesia Machine, are purpose built for LRS. They are simple to use, easy to fix and employ oxygen concentrators. They can function for long periods without electricity. Residents who are going to work in a LRS, need to prepare themselves by reviewing anesthesia literature pertaining to breathing circuits and anesthesia machines. A resident should be comfortable working with a variety of machines and be able to troubleshoot a variety of anesthetic circuits. If overwhelmed, visiting residents should ask questions and learn from local providers who are familiar with the equipment.



Medication availability, like biomedical equipment, is unpredictable. The WHO has developed an Essential Medicines list in an effort to improve availability of medications that could help provide safe anesthesia (8). Becoming familiar with some of the anesthetic medications on the WHO list before leaving Canada, may help while working abroad. Additionally, travelling residents should review the pharmacology of medications that have been phased out of practice in Canada. For example, a resident could be expected to use thiopental for induction, halothane for maintenance of anesthesia and pancuronium for paralysis. Narcotics are often used very sparingly in LRS. Resident should explore innovative ways to overcome shortages in a context sensitive manner whilst remaining safe. Regional anesthesia is often a useful tool in reducing anesthetic costs and improving postoperative pain control. Blocks are usually performed using a landmark technique or nerve stimulation as opposed to using ultrasound which is common in Canada.

The Post Anesthesia Care Unit (PACU) is a resource that is often marginalized in LMICs. If a recovery unit is available, nursing and monitoring ratios are limited. These differences need to be incorporated into the overall anesthesia considerations and disposition plans for every patient. The resident needs to consider analgesic methods that have favorable hemodynamic and respiratory profiles and that provide good postoperative pain control. Methods to consider include; regional anesthesia, Ketamine boluses and infusions, Lidocaine infusions, among many other cost effective treatments. Whenever possible a resident should explore ways to have patients optimized and ward ready to avoid adding further stress on limited PACU resources.



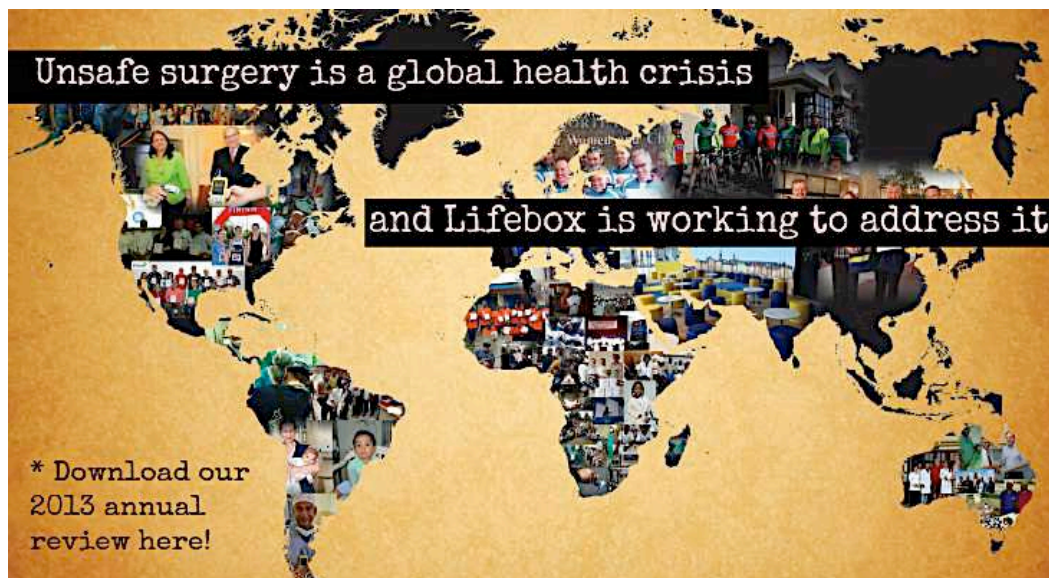
The World Health Organization (WHO) and World Federation of Societies of Anaesthesiologists (WFSA) have endorsed several initiatives to improve global anesthesia standards. For example, the WHO promotes the safe surgery checklist and pulse oximetry for all surgeries, yet it is estimated that over seventy five thousand operating rooms work without a pulse oximeter (9). The WFSA Quality Committee has anesthesia practice guidelines. It also has guidelines for minimal performance of anesthetic machines suitable for low resource areas. Most importantly there continues to be a critical shortage of anesthesia providers in developing countries (10). Residents embarking on IHE should be aware of these disparities and consider ways to improve anesthesia care in LMICs.

Required readings:

- 1) Anesthesia in developing countries – a risk for patients (Link n#1) (2)
- 2) Safety aspects of anesthesia in under-resourced locations (Link n# 2) (9)

Links:

- 1) [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(08\)60432-8/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(08)60432-8/fulltext)
- 2) http://www.lifebox.org/wp-content/uploads/CJA-2012_enright-safety-aspects-of-anesthesia-in-under-resourced-locations-can-j-anesth2013.pdf



References:

1. Dubowitz G, Detlefs S, McQueen K a K. Global anesthesia workforce crisis: a preliminary survey revealing shortages contributing to undesirable outcomes and unsafe practices. *World J Surg* [Internet]. 2010 Mar [cited 2014 Jul 24];34(3):438–44. Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2816796&tool=pmcentrez&rendertype=abstract>
2. Walker I, Wilson I. Anaesthesia in developing countries—a risk for patients. *Lancet* [Internet]. 2008 [cited 2014 Nov 6];371:968–9. Available from: <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Anaesthesia+in+developing+countries+—+a+risk+for+patients#0>
3. Baerlocher MO, Bradley J. General Anesthesia Gender patterns amongst Canadian anesthesiologists. 2006;437–41.
4. Hodges SC, Mijumbi C, Okello M, McCormick B a, Walker I a, Wilson IH. Anaesthesia services in developing countries: defining the problems. *Anaesthesia* [Internet]. 2007 Jan [cited 2014 Jul 26];62(1):4–11. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/17156220>
5. Jamison DT, Summers LH, Alleyne G, Arrow KJ, Berkley S, Binagwaho A, et al. Global health 2035: a world converging within a generation. *Lancet* [Internet]. Elsevier Ltd; 2013 Dec 7 [cited 2014 May 25];382(9908):1898–955. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24309475>
6. Elobu AE, Kintu A, Galukande M, Kaggwa S, Mijumbi C, Tindimwebwa J, et al. Evaluating international global health collaborations: perspectives from surgery and anesthesia trainees in Uganda. *Surgery* [Internet]. Mosby, Inc.; 2014 Apr [cited 2014 Jul 21];155(4):585–92. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24612624>
7. Lipnick M, Mijumbi C, Dubowitz G, Kaggwa S, Goetz L, Mabweijano J, et al. Surgery and anesthesia capacity-building in resource-poor settings: description of an ongoing academic partnership in Uganda. *World J Surg* [Internet]. 2013 Mar [cited 2014 Nov 4];37(3):488–97. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23192167>
8. WHO. Essential medicines [Internet]. 2013. Available from: http://www.who.int/medicines/services/essmedicines_def/en/
9. Enright A. Review article: safety aspects of anesthesia in under-resourced locations. *Can J Anaesth* [Internet]. 2013 Feb [cited 2014 Jul 10];60(2):152–8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23229868>
10. Cherian M, Choo S, Wilson I, Noel L, Sheikh M, Dayrit M, et al. Building and retaining the neglected anaesthesia health workforce: is it crucial for health systems strengthening through primary health care? *Bull World Health Organ* [Internet]. 2010 Aug 1 [cited 2014 Jul 22];88(8):637–9. Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2908973&tool=pmcentrez&rendertype=abstract>

Chapter 7 Anesthesia Pre-Departure Checklist

Introduction:

Prior to departure, a resident must be aware of potential travel risks and take steps to ensure personal health and safety during the trip. Additionally, the trainee must ensure that they are psychologically prepared for the International Health Elective (IHE). This shortened synopsis was adopted from The Association of Faculties of Medicine of Canada Global Health Resource Group, Canadian Association of Interns and Residents (CAIR) and from the Working Group on Ethics Guidelines for Global Health Training (1)(2)(3). Other pre-departure checklists and programs are linked at the end of the document for further reading.

Personal Safety:

Prior to departure you must inquire about safety precautions of the elective destination. This includes political stability, environmental stability and any other risks that might be posed to foreign travelers (4). There are several governmental advisory websites, which provide basic information. The Canadian travel advisory website is travel.gc.ca and the American advisory site is travel.state.gov. A good way to become accustomed and tuned in to the potential dangers of a country is by reading news reports several weeks prior to departure. Travelers are advised to bring new American fifty-dollar bills as they are usually universally accepted in emergency and bailout situations.

While travelling abroad, several intuitive precautions should be considered. Keep personal belongings safe and avoid flashing camera, phone and wallet. Register with the Canadian embassy as soon as possible and keep passport in a safe place. Keep a photo ID on hand at

all times along with a photocopy of your passport. Ideally travel in a group and, if planning to travel alone, inform supervisor of intended travel destinations. Bring or buy an unlocked phone and obtain a local number. A large contributor to the Global Burden of Surgical Disease is road traffic accidents. Travelers are not immune to traffic accidents, therefore be very cautious when driving or crossing the road. Ensure that drivers and taxis are safe. It is often better to pay more and travel with a certified driver. Avoid taking motorcycle taxis whenever possible.

Personal Health:

Mental Health: Depending on the individual's coping mechanisms and foreign travel experience, travelling to a LMIC, away from home comforts, can be stressful and anxiety provoking. Furthermore, health inequities and advanced pathology may be



overwhelming and traumatic to the resident. Mentorship from an anesthesiologist who has worked in LMIC or disaster zones is invaluable help for residents travelling on an IHE. Although uncommon, some residents help in disaster relief projects. It is not advised to participate in disaster relief as a first foreign aid experience or during residency years. However, if doing so, additional self-assessment and preparedness is required for this potentially emotionally difficult work.

Infectious disease: When travelling abroad it is recommended to schedule an appointment with a travel health clinic at least three months in advance. The travel clinic will discuss country specific precautions and discuss the choice of malaria prophylaxis. The travel clinic should ideally start a vaccination record for future travel and provide a yellow fever passport. The travel clinic should be notified of all destinations during the elective period. Sleeping under a mosquito net is mandatory in mosquito-infested areas.

Workplace infections: As always, universal precautions should be maintained at all times. In many developing countries, the prevalence of HIV and hepatitis may be extremely high. Aid workers should bring personal protective equipment (gloves, eye protection, masks), as they are not available in the quantities we have become accustomed to in Canada. Post Exposure Prophylaxis (PEP) access should be readily available either from the program you are travelling with or by prescription from the travel health clinic. Read and understand the indications for PEP, as emergency post-exposure support may not be available at the destination facility.

Medical license & insurance:

Residents should inquire about the medical licence as soon as possible. Since residents are trainees, many jurisdictions will not provide a temporary medical licence. Humanitarian workers do at times travel and work abroad without a medical license however it is not advisable for obvious reasons. If a trainee is traveling under the supervision of a Canadian consultant, the resident may not need a licence however a case-by-case evaluation is required.

In terms of medical insurance, the CMPA offers special humanitarian work coverage under codes 8 and 9. Additionally, if the resident is travelling and working under the supervision of a Canadian attending, their insurance partly covers the trainee. CMPA requires an exact description of the type of work you will provide in writing. Follow the CMPA link provided below:

https://oplfrpd5.cmpa-acpm.ca/documents/10179/25003/questionnaire_8_9-e.pdf

Personal health insurance:

This is a priority. Call your insurance company and describe the type of work you will be providing and exact dates you will be travelling. Many VISA cards provide this service. The insurance company should send you the information by email and provide local and international contact details. In case of an emergency call the insurance company within 24 hours, as many insurance companies will not accept a claim past 24 hours of accident. Other helpful emergency contacts are at <http://travel.gc.ca/assistance/emergency-assistance>. Make sure your insurance includes evacuation coverage in the case of illness, accident or death. Be familiar with insurance company rules for evacuation; you may

believe it is to home; the insurance company may intend to take you to a facility in a nearby country.

Food and water safety:

One of the great opportunities of travelling abroad is to experience a different culture and new cuisine. Precautions are required with uncooked food and vegetables that are washed with tap water. Avoid any raw meat and fish, as the processing quality may be variable. Drink and brush your teeth using bottled water unless you have a purifier that is calibrated for such destinations. Buy bottled water from reputable shops and pay attention to the bottle cap, ensuring that the seal is intact. For travelers diarrhea bring Ciprofloxacin and Imodium. Some Infectious Disease physicians have advocated a “Cipro chaser” if you feel that you ate something that you should not have.



Conclusion:

Travelling as a physician to a developing country is a unique experience. Although most destinations chosen by residents are safe, ensuring personal health and safety is crucial. A preparatory checklist is a great tool especially if travelling for your first humanitarian aid project. Seek out guidance from physicians who have previously worked abroad.

Checklist:

1) Medical supplies:

Stethoscope

Sterile and non-sterile gloves

OR masks and hats

Eye protection

Scrubs to last a rotation
Lab coat
Dedicated OR shoes
Books, iPad, reading material
Flashlight

2) Personal Health:

Appropriate malaria prophylaxis: Start taking as directed before the trip and continue as prescribed after the trip.
Mosquito repellent
Tylenol, ibuprofen, sunscreen
Chronic medications that you may be on
Water filter

3) Documents:

Medical insurance printouts
CMPA printout
Medical license printout
Yellow fever passport and immunization record
Passport and several photocopies
Travel health clinic recommendations and precautions
Several new US 50\$ bill notes in case of emergency and other money
Emergency contacts in wallet and photocopied

4) Other recommendations:

Don't be fooled, it does get cold in many tropical destinations
If rainy season, bring rain gear
All other necessary clothes
Daypack for side trips
Camera (not for the OR and patients)
Spare batteries

5) Other useful guides:

Canadian Association of Interns and Residents (CAIR):
<http://www.cair.ca/u/elibrary/CAIR%20Guidelines%20for%20global%20health%20elective%20placements.pdf>

Western University Pre-Departure Training Handbook:

<https://www.schulich.uwo.ca/globalhealth/docs/electives/pre-departure%20training.pdf>

AFMC Global Health Resource Group and CFMS Global Health Program:

<http://www.cfms.org/downloads/Pre-Departure%20Guidelines%20Final.pdf>

Association of Anaesthetists of Great Britain and Ireland - international:

<http://www.aagbi.org/international>

References:

1. CAIR. CAIR Guidelines for Resident Physician Participation in Global Health Elective Placements [Internet]. CAIR. 2011. p. 1–4. Available from: [http://www.cair.ca/u/elibrary/CAIR Guidelines for global health elective placements.pdf](http://www.cair.ca/u/elibrary/CAIR_Guidelines_for_global_health_elective_placements.pdf)
2. Crump J a, Sugarman J. Ethics and best practice guidelines for training experiences in global health. *Am J Trop Med Hyg* [Internet]. 2010 Dec [cited 2014 Nov 6];83(6):1178–82. Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2990028&tool=pmcentrez&rendertype=abstract>
3. Anderson K, Bocking N, Slatnik M, Pattani R. Preparing Medical Students for Electives in Low-Resource Settings: A Template for National Guidelines for Pre-Departure Training. *AFMC CFMS* [Internet]. 2008 [cited 2014 Jul 29];(May):1–19. Available from: <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Preparing+Medical+Students+for+Electives+in+Low-Resource+Settings:+A+Template+for+National+Guidelines+for+Pre-Departure+Training#0>
4. Enright A. The Place of Global Education in Anesthesia. In: Frost EAM, editor. *Comprehensive Guide to Education in Anesthesia SE - 16* [Internet]. Springer New York; 2014. p. 205–14. Available from: http://dx.doi.org/10.1007/978-1-4614-8954-2_16

Chapter 8 Debriefing

Debriefing is becoming a common tool for evaluation and education in healthcare. It is especially useful in high stress environments which an IHE can be (1). The Working Group on Ethics Guidelines for Global Health Training (WEIGHT) endorses the need for debriefing post-IHE (2). An IHE can be life changing, career changing, emotionally taxing or have no effect at all (3). Many foreign aid workers and international trainees have great difficulty returning and working in the country of origin (4). A debriefing exercise can ease the transition and address issues that are responsible for these emotions (5). Furthermore a debriefing session can consolidate knowledge gained, allow for further learning opportunities and potentially open career discussions. Lastly a debriefing session offers a point of contact for residents who feel they require further support.



Suggested steps for debriefing (6) (2) (7):

- 1) Timely debriefing with preceptor.
- 2) Summarize the experience.
- 3) Discuss any questions that are pending or are unanswered.
- 4) Discuss the best experiences of the IHE.
- 5) Discuss the worst experiences, or emotionally difficult parts of the IHE.
- 6) Lessons learned from the elective.
- 7) Discuss ways to improve the experience, improve the aid provided (if any), and increase reciprocal interaction with the program, which hosted the elective.
- 8) Was anything unexpected? Consider ways to be better prepared.
- 9) Discuss future interest in international health.
- 10) Review assignments.
- 11) Allow for potential follow up and supportive sessions if required.
- 12) Send a letter of appreciation to colleagues and hosts in recipient country.

References:

1. Dismukes R, Gaba D, Howard S. So Many roads: Facilitated Debriefing in Healthcare. *Simul Healthc* [Internet]. 2006 [cited 2014 Nov 6]; Available from: http://journals.lww.com/simulationinhealthcare/Abstract/2006/00110/So_Many_Roads_Facilitated_Debriefing_in.1.aspx
2. Crump J a, Sugarman J. Ethics and best practice guidelines for training experiences in global health. *Am J Trop Med Hyg* [Internet]. 2010 Dec [cited 2014 Nov 6];83(6):1178–82. Available from: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2990028&tool=pmcentrez&rendertype=abstract>
3. Button L, Green B, Tengnah C, Johansson I, Baker C. The impact of international placements on nurses' personal and professional lives: literature review. *J Adv Nurs* [Internet]. 2005 May;50(3):315–24. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/15811111>
4. Taylor C. International experience and idealism in medical education. *Acad Med* [Internet]. 1994 [cited 2014 Jul 7]; Available from: http://journals.lww.com/academicmedicine/Abstract/1994/08000/International_experience_and_idealism_in_medical.5.aspx
5. Hamadani F, Sacirgic L, McCarthy A. Ethics in global health: the need for evidence-based curricula. *McGill J Med ...* [Internet]. 2009 [cited 2014 Nov 4];12(2):120–5. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2997253/>
6. Bender A, Walker P. The obligation of debriefing in global health education. *Med Teach* [Internet]. 2013 Jan [cited 2014 Oct 24];35(3):e1027–34. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23102161>
7. Rudolph JW, Simon R, Raemer DB, Eppich WJ. Debriefing as formative assessment: closing performance gaps in medical education. *Acad Emerg Med* [Internet]. 2008 Nov [cited 2014 Oct 23];15(11):1010–6. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/18945231>

Notes & Experiences

Notes & Experiences

Notes & Experiences