

GLOBAL HEALTH ESSENTIAL CORE COMPETENCIES

All medical graduates should understand the major factors that influence the health of individuals and populations worldwide. They should have a basic understanding of the complexity of global health issues, especially in low-resource settings, and be able to identify sources of information concerning global health topics. They should appreciate the role of physicians as advocates for improving the health of patients and populations in their communities and globally.

These competencies were developed by a Joint US/Canadian Committee on Global Health Core Competencies during 2008-09. The Committee's work benefitted greatly from a Report of the Assoc. of Faculties of Medicine of Canada's Resource Group on Global Health, as well as review of recent literature on this topic. The competencies are made available on GHEC's website in the hopes they will elicit discussion, refinement and use in the planning of global health curricula.

All medical graduates should have competency in the following areas:

1: GLOBAL BURDEN OF DISEASE

A basic understanding of the global burden of disease is an essential part of a modern medical education as this knowledge is crucial for participating in discussions of priority setting and the allocation of funds for all health-related activities. A medical graduate should be able to demonstrate:

- Knowledge of the major global causes of morbidity and mortality and how health risks vary by gender and income across regions.
 - To demonstrate competency in this area, students should:
 - i. Be able to describe the principle measures of morbidity and mortality and their roles and limitations for health program monitoring, evaluation and priority setting. This will involve the ability to:
 1. Describe the concepts of under 5 mortality rate, life expectancy, quality adjusted life-year (QALY) and disability adjusted life-year (DALY)
 2. Explain how life expectancy, QALY and DALY may be used to make general health comparisons within and/or between countries and regions
 3. Identify changes in under 5 mortality as the major reason for changes in life expectancy
 - ii. Be able to identify the major categories of morbidity and mortality used by the World Health Organization (WHO) and to describe how the relative importance of each category, and of the leading diagnoses within each category, vary by age, gender, WHO region, and between high, middle and low-income regions. For example:
 1. Communicable and parasitic diseases, maternal, perinatal and childhood conditions, and nutritional deficiencies are more

- significant causes of morbidity and mortality in low-income regions
 - 2. Non-communicable conditions are important and of increasing significance in high, middle and low-income regions
 - 3. Injuries are a more important cause of morbidity and mortality in middle and low-income regions
 - iii. Be able to efficiently access global health data from sources such as the WHO Global Burden of Disease measures and understand the limitations of these data.
- Be able to knowledgeably discuss priority setting, healthcare rationing and funding for health and health-related research
 - To demonstrate competency in this area, students should:
 - i. Be familiar with the concepts of priority setting and healthcare rationing and be able to describe challenges for the existing healthcare system in your community/country, such as:
 - 1. Lack of health insurance for a substantial proportion of the population;
 - 2. Waiting times for elective procedures and the public/private balance for healthcare;
 - 3. Unequal distribution of physicians between urban and rural areas and between primary care and sub-specialty fields
 - ii. Be aware of global systems of funding for health research and service provision and describe what is meant by the concept of neglected diseases

2: HEALTH IMPLICATIONS of TRAVEL, MIGRATION and DISPLACEMENT

Travel, migration and displacement may have significant impact on the health of individuals and populations. Medical graduates should have an understanding of health risks associated with international travel, migration and foreign birth in order to appropriately manage patients in their care. The proper management of patients necessitates taking into consideration perspectives and implications posed by international travel, foreign birth or culture. A medical graduate should be able to:

- Understand health risks associated with travel, with emphasis on potential risks and appropriate management, including referrals
 - To demonstrate competency in this area, students should:
 - i. Know general patterns of disease and injury in various world regions, and how to counsel or refer patients traveling to or returning from those areas.
 - ii. Understand the importance of a recent or past travel history when patients present for care and have proficiency in obtaining a relevant travel history.
 - iii. Recognize potentially serious or life threatening conditions such as the febrile traveler and be able to arrange timely, appropriate referral.

- Understand the health risks related to migration, with emphasis on the potential risks and appropriate resources
 - To demonstrate competency in this area, students should:
 - i. Understand the basic demographics of foreign-born individuals in one's local community and country.
 - ii. Recognize when foreign birth places a patient at risk for unusual diseases or unusual presentation of injuries, common diseases or tropical diseases and make an appropriate diagnosis or referral.
 - iii. Be able to elicit individual health concerns in a culturally sensitive manner.
 - iv. Be familiar with issues that arise when communicating with patients and families using an interpreter.

- Understand how travel and trade contribute to the spread of communicable diseases
 - To demonstrate competency in this area, students should:
 - i. Describe the concept of a pandemic and how global commerce and travel contribute to the spread of pandemics.
 - ii. Understand how travelers may contribute to outbreaks of communicable diseases such as measles in a context of local and international populations with varying levels of immunization
 - iii. Be aware of the utility and limitations of common infection control and public health measures in dealing with local or global outbreaks.
 - a. Examples include contact precautions, vaccinations, health advisories, prophylaxis, quarantines, isolation and travel restrictions

- iv. Know how to liaise with local or regional public health authorities and be aware of national and international public health organizations responsible for issuing health advisory recommendations

3A: SOCIAL and ECONOMIC DETERMINANTS of HEALTH

Physicians should understand the many ways social and economic conditions affect health, both to recognize disease risk factors in their patients and to contribute to improving public health. A medical graduate should be able to:

- Understand the relationship between health and social determinants of health, and how social determinants vary across world regions
 - To demonstrate competency in this area, students should:
 - i. Define health inequity and be able to describe one local and one international example.
 - ii. List major social determinants of health and their impact on differences in life expectancy, major causes of morbidity and mortality and access to healthcare between and within countries.
 - 1. Topics include absolute and relative poverty, urbanization, crowding, inadequate housing, education (especially for females), gender and other inequities and discrimination based on race, ethnicity or other social determinants.
 - iii. Be aware of local, national or international interventions to address health determinants
 - 1. Examples include the UN Millennium Development Goals or the US Global Health Initiative

3B. POPULATION, RESOURCES, and ENVIRONMENT

Demographic projections anticipate a ~40% increase in the world population by 2050, with almost all of it concentrated in low-income countries. This growth will have a major adverse impact on the availability of food, water and other essential resources as well as increasing the pollution of the planet. A medical graduate should be able to:

- Understand the impact of rapid population growth and of unsustainable and inequitable resource consumption on important resources essential to human health including water, sanitation and food supply and know how these resources vary across world regions
 - To demonstrate competency in this area, students should:
 - i. Have a basic understanding regarding the adequacy of nutrition, potable water and sanitation in different regions around the world.
- Describe the relationship between access to clean water, sanitation, and nutrition on individual and population health
 - To demonstrate competency in this area, students should:
 - i. Explain the basic relationship between the availability of adequate nutrition, potable water and sanitation and risk of communicable and chronic diseases and provide specific examples.
 - 1. Appropriate topics include the interactions between protein, caloric, and micronutrient malnutrition and various major diseases; and the interactions between inadequate clean water supplies and good sanitation and diarrheal and parasitic diseases
- Describe the relationship between environmental degradation, pollution and health
 - To demonstrate competency in this area, students should:
 - i. Be able to explain examples of causes of pollution and environmental degradation and their consequences for health globally. For example:
 - 1. The effects of air pollution on chronic lung and cardiovascular disease
 - 2. The relationship between environmental pollution and cancers
 - i. Radon and lung cancer; benzene and leukemia

4: GLOBALIZATION of HEALTH and HEALTHCARE

Globalization affects all aspects of healthcare including the ability of governments or organizations to provide adequate care, the evolution of the local healthcare system, disease patterns and the movement of healthcare workers within a global shortage of health human resources. A medical graduate should be able to:

- Understand how global trends in healthcare practice, commerce and culture contribute to health and the quality and availability of healthcare locally and internationally
 - To demonstrate competency in this area, students should:
 - i. Describe different national models for public and/or private provision of healthcare and their impact on the health of the population and individuals.
 - ii. Be aware of examples of how globalization and trade including trade agreements affect availability of healthcare such as patented or essential medicines.
- Be familiar with major multinational efforts to improve health globally
 - To demonstrate competency in this area, students should:
 - i. Describe the core functions and role of the WHO in developing healthcare policies and practices.
 - ii. Discuss the function/intention of the Millennium Development Goals and identify health-related objectives, including:
 1. Reduce child mortality
 2. Improve maternal health
 3. Eradicate extreme poverty and hunger
 4. Combat HIV/AIDS, malaria and other diseases
- Understand and describe general trends and influences in the global availability and movement of healthcare workers
 - To demonstrate competency in this area, students should:
 - i. Know the approximate extent of national and global healthcare worker availability (shortage).
 - ii. Describe the most common patterns of healthcare worker migration (“brain drain”) and its impact on healthcare availability in both the country that the healthcare worker leaves and the country to which he/she migrates.

5: HEALTHCARE in LOW-RESOURCE SETTINGS

Healthcare needs and resources differ markedly between high- and low-resource settings, yet most medical training occurs in high-resource settings. To effectively care for patients across a range of settings, a medical graduate should be able to:

- Identify barriers to health and healthcare in low-resource settings locally and internationally.
 - To demonstrate competency in this area, students should:
 - i. Describe barriers to recruitment, training and retention of human resources in underserved areas such as rural, inner-city and indigenous communities within high- and low-income countries.
 - ii. Describe the effect of distance and inadequate infrastructure on the delivery of healthcare.
 1. For example, be able to discuss the effects of travel costs, poor roads, lack of mailing address or phone system, lack of medicines, inadequate staffing, and inadequate and unreliable laboratory and diagnostic support.
 - iii. Identify barriers to appropriate prevention and treatment programs in low-resource settings.
 1. For example, be able to discuss the effects of low literacy and health literacy, user fees, lack of health insurance, costs of medicines and treatments, therapies and procedures, advanced presentation of disease, lack of provider access to management guidelines and training including continuing professional development, concerns regarding quality of care – real or perceived, cultural barriers to care, underutilization of existing resources, issues facing scaling up and implementation of successful programs.
- Demonstrate an understanding of healthcare delivery strategies in low-resource settings, especially the role of community-based healthcare and primary care models
 - To demonstrate competency in this area, students should:
 - i. Differentiate between and highlight the benefits and disadvantages of horizontal and vertical implementation strategies.
 - ii. Be familiar with the concept of an essential medicines list and understand its role in ensuring access to standardized, effective treatments.
- Demonstrate an understanding of cultural and ethical issues in working with underserved populations
 - To demonstrate competency in this area, students should:
 - i. Discuss the professional and ethical issues involved in allowing trainees to practice or assist in settings where they may be perceived and treated as healthcare workers, even by local healthcare providers.

1. Explain the student's professional and ethical responsibilities in resource-poor settings.
 2. For example, be able to discuss the impact on local staff, patient perceptions and risks to patients and students.
- Demonstrate the ability to adapt clinical skills and practice in a resource-constrained setting
 - To demonstrate competency in this area, students should:
 - i. Identify signs and symptoms for common major diseases that facilitate diagnosis in the absence of advanced testing often unavailable in low-resource settings.
 1. For example, HIV/AIDS, TB, malaria, childhood pneumonia, cardiovascular disease, cancer, diabetes
 - ii. Describe clinical interventions and integrated strategies that have been demonstrated to substantially improve individual and/or population health in low-resource settings.
 1. For example, be able to discuss immunizations, an essential drugs list, maternal, child and family planning health programs.
 - For students who participate in electives in low-resource settings outside their home situations, demonstrate that they have participated in training to prepare for this elective
 - To demonstrate competency in this area, students should:
 - i. Demonstrate preparation in the following areas:
 1. Personal health: basic health precautions, immunizations, health insurance, personal protective equipment, post exposure prophylaxis for HIV, access to medical care.
 2. Travel safety: orientation upon arrival, packing requirements, registering at home embassy, travel advisory warnings, emergency preparedness.
 3. Cultural awareness: basic understanding of culture (especially as it pertains to health), intercultural relationships, gender, family and community roles, and religion.
 4. Language competencies: language basics, host language expectations and availability of interpreters.
 5. Ethical considerations: evaluate motivations for participating in international elective, discuss potential ethical dilemmas prior to departure, code of conduct, appropriate licensing, local mentor/supervision, communications, and patient privacy.
 6. Review guidelines for professionalism in electronic communications such as blogging, emails, and/or distribution of photographs taken in low resource settings.
 7. Understand the possible historical and current socio-political and economical factors pertaining to the region in which they will work and how these may affect their work abroad.

6: HUMAN RIGHTS in GLOBAL HEALTH

Advocating for health equity is a basic tenet of global health, and health and access to healthcare have been recognized as fundamental human rights. Yet, large inequities in health and healthcare exist within and between communities and countries. To advocate effectively for patients' and communities' health based on an understanding of the relationship between human rights and health, a medical graduate should be able to:

- Demonstrate a basic understanding of the relationship between health and human rights
 - To demonstrate competency in this area, students should:
 - i. Have an understanding of the right to health and how this right is defined under international agreements such as the United Nations' Universal Declaration of Human Rights or the Declaration of Alma-Ata.
 - ii. Discuss how social, economic, political or cultural factors may affect an individual's or community's right to healthcare.
 2. Examples include availability, accessibility, affordability and quality

For further information about this project and the competencies contact either Dr. Timothy Brewer, McGill University and chair of the Joint Committee (timothy.brewer@mcgill.ca), or Dr. Tom Hall, executive director, GHEC (thall@epi.ucsf.edu)