A student-initiated and student-facilitated international health elective for preclinical medical students

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Introduction: Global health education is becoming more important for developing well-rounded physicians and may encourage students toward a career in primary care. Many medical schools, however, lack adequate and structured opportunities for students beginning the curriculum.

Methods: Second-year medical students initiated, designed, and facilitated a pass–fail international health elective, providing a curricular framework for preclinical medical students wishing to gain exposure to the clinical and cultural practices of a developing country.

Results: All course participants (N = 30) completed a post-travel questionnaire within one week of sharing their experiences. Screening reflection essays for common themes that fulfill university core competencies yielded specific global health learning outcomes, including analysis of health care determinants.

Conclusion: Medical students successfully implemented a sustainable global health curriculum for preclinical student peers. Financial constraints, language, and organizational burdens limit student participation. In future, long-term studies should analyze career impact and benefits to the host country.

Keywords: international health; preclinical students; medical education; student-initiated

Understanding international health care is increasingly important for medical professionals in the USA (1). The rise in global interdependence has caused seemingly isolated public health threats in one part of the world to escalate into worldwide concerns (2). Furthermore, rising immigration rates contribute to an ever more diverse patient population (3). These trends have led to a growing demand for doctors who are familiar with diseases endemic to other parts of the world and who can treat patients with cultural sensitivity (2). Currently, it is of paramount importance that we train and equip health care professionals to meet this demand.

One method to address the need for global health education is an international elective during medical school. Studies have shown that exposure to health care in a developing country allows students to improve their clinical skills, decrease their reliance on technology, and gain a better understanding of global public health issues (4, 5). International electives are also becoming increasingly popular among students (6). While only 5.9% of graduating medical students completed clinical education abroad in 1979, 27.3% participated in 2007 (7, 8). Although many medical schools have pilot-tested international health electives, preclinical medical students’ demands are still not being met (4, 9). A literature review revealed two publications about international health electives for preclinical medical students. One elective at the University of Massachusetts allowed preclinical medical students to participate in language classes in a foreign country, but lacked clinical exposure (10). The University of Texas Medical Branch offered a clinical experience to its preclinical medical students traveling to Nicaragua, but limited the number of participants and restricted the experience to one country (11). Meanwhile, medical students with international clinical experience are more likely to enter primary care medicine (5). Recent studies have shown that a greater primary care physician supply translated into lower mortality rates, while a higher specialist ratio resulted in higher mortality rates (12). Despite this, the number of medical students entering family practice training in the USA dropped by 50% between 1997 and 2005. Therefore, it is crucial for medical schools to encourage their students to pursue primary care medicine (13). Furthermore, experiences in...
the preclinical years could have an even greater impact on shaping such career decisions in medicine (2).

At Chicago Medical School (CMS), we developed a program to facilitate international exposure in the preclinical years. For the past several years, interested CMS students have traveled abroad in the summer following their first year. The International Health Interest Group (IHIG), an on-campus club, provided a contact list of clinical sites while students arranged and funded their experiences. Although this system offered some medical exposure to enthusiastic students, the extent of this exposure was inconsistent. With no minimum criteria for a site and no student accountability for the depth of their work, it was challenging for students to define goals for their international health experience. These limitations called for a structured course with a focused curriculum and learning standards.

To address these limitations, two Rosalind Franklin students, NV and MC, created an official course. This paper describes the design and implementation of the course and represents the student responses to these experiences.

Methods

‘Clinical Experience in a Developing Country’ (MCUR607) is a pass-fail sophomore elective course implemented at CMS in 2006. The course provides a curricular framework for medical students wishing to gain exposure to the clinical and cultural practices of a developing country during the summer after their first year. Sophomore electives offer in-depth training in specific or applied areas of the basic medical sciences to medical students in good academic standing who have completed first-year requirements. Eligible students choose from a number of didactic, interdisciplinary, research, or service-oriented classes. MCUR607 fulfills two out of the three pass-fail sophomore elective units required for medical student graduation. NV and MC designed the course with a vision for participants to develop into well-rounded ‘complete’ physicians, capable of caring effectively for a diverse patient population. Course objectives describing valuable skills and knowledge attainable through a study-abroad experience early in students’ medical careers related directly to the University’s existing core competencies (Table 1). With the support of IHIG’s faculty advisor (CL), jointly serving as course director, the course proposal was presented to the Educational Affairs Committee and accepted as a new sophomore elective.

Pretravel: clinical approval and waiver

Two months prior to traveling abroad, first-year medical students submitted a Clinic Approval Form to course faculty, describing the clinic or clinical program, expected volunteering activities, contact information of physician mentor, and any additional program or language requirements, as well as planned dates of travel, specific costs, and living arrangements. Course Teaching Assistants (HP and AH), two student officers elected through IHIG, screened submissions for completeness and adherence to course objectives, requested missing program details, and advised students having difficulty with the process. Most students traveled to clinics chosen from an established list created by IHIG based on the experiences of previous students and faculty. Some opted to use their own contacts or the Internet to find new programs. These students completed a New Clinic Approval Form, which required additional details on how they discovered the program, the type of clinic or hospital, the patient population served, and any affiliations with a medical school. In either case, faculty oversight encouraged students to plan early for a successful trip and ensured that students’ programs met the course mission and requirements. Along with the Clinic Approval Form, students also submitted a waiver and release form prior to travel. Developed in collaboration with the University general counsel, the waiver released the University from liability for a student’s health or injury and required students to obtain adequate health insurance covering medical evacuation and repatriation. Students were encouraged to go to the State department and Center for Disease Control and Prevention (CDC) websites to monitor any political unrest or infectious outbreaks in their planned country of travel. The University’s malpractice insurance policy covered enrolled students during the international clinical experience.

Requirements abroad

Students were required to volunteer at a clinic in a developing nation for at least 60 h and a minimum of three weeks under the direction of a physician mentor. Currently, at CMS, sophomore elective credits require 30 h of involvement to obtain one credit. Students completing MCUR607 received two sophomore credits. Hence, this elective required students to complete 60 h of work. After completing the experience, the mentor signed a Physician Verification Form to confirm the hours worked and provide feedback on the student’s behavior. Some students incorporated language study into their clinical experience. In this case, language classes substituted up to 20 h of the clinical volunteering requirement. Students also kept a patient log with patient age, gender, chief complaint, diagnosis, and treatment. While not specifically required, students were encouraged to keep a journal for self-reflection, interact and communicate with indigenous people, travel within the country, and appreciate alternative perspectives.
Reflecting and sharing the experience: essay, PowerPoint, and learning outcomes

Each student was required to write a 1,000–1,500-word reflection essay. Specifically, the essay addressed (a) the program, country, and daily activities; (b) two country-specific determinants of individual health or quality of life (i.e., sanitation, endemic diseases, governmental or public policy); (c) a patient who made a strong impression on the student; (d) how the experience may impact the student’s future career in medicine; and (e) any unexpected obstacles or challenges faced during the stay.

Students also created a 10-min PowerPoint presentation with a photo journal illustrating their experience and its impact, both cultural and academic. Students who

| Medical school’s six core competencies | MCUR607 course objectives |
|----------------------------------------|----------------------------|
| 1. Medical and Scientific Knowledge. Demonstrate knowledge about established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences and apply this knowledge in caring for patients. | -Learn economic, psychological, social, environmental, and cultural determinants of health and illness within a specific cultural setting  
-Knowledge of the epidemiology of common illnesses within defined populations, the systematic approaches used in reducing the incidence and prevalence, as well as the prevention of those illnesses within cultural and socioeconomic contexts  
-Understanding the scientific method and its application in establishing the cause of disease and the efficacy of traditional and non-traditional therapies in another country |
| 2. Patient Care and Prevention. Demonstrate patient care that is compassionate, appropriate, and effective for the promotion of health, prevention of illness, treatment of disease, and the end of life. | -Perform a symptom-based history and physical examination and participate in the course of management that may involve procedures and clinical problem solving within a particular sociocultural setting in a defined amount of resources  
-Use preventive medical strategies for patient care in conjunction with other health care professionals |
| 3. Professionalism and Self-awareness. Demonstrate a commitment to professional service, adherence to ethical principles, sensitivity to diverse patient populations, and awareness of one’s own interests and vulnerabilities. | -Demonstrate respect, compassion, integrity, and altruism in relationships with patients and their families  
-Understand how culture and beliefs shape the decision making for a patient  
-Recognize and accept limitations to one’s knowledge such as lack of familiarity with a language or sociocultural setting, and clinical skills  
-Strive continuously to improve by advocating the interests of the patient over one’s own comfort level  
-Understand the financial, organizational, and other conflicts of interest inherent to the practice of medicine |
| 4. Practice-based, Life-long Learning. Demonstrate the ability to appraise and assimilate scientific evidence and methods to investigate, evaluate, and improve one’s own patient care practices. | -Learn new evidence regarding diagnosis, prognosis, and treatment of specific diseases, and integrate this knowledge into patient care  
-Learn willingness to self-assess and learn from errors to enhance processes of care despite limitations, such as resources or language/cultural barrier |
| 5. Systems-based, Inter-professional Practice. Demonstrate an awareness of and responsiveness to the larger context of health care and the ability to call on system resources and other health care professionals to provide optimal care. | -Communicating and working in teams to ensure that care is continuous and reliable; acknowledge and respect the roles of other health professionals in prioritizing needed services to individual patients and communities  
-Advocate for quality of care and assist individual patients in dealing effectively with complex health care systems  
-Able to communicate with patients and their families about all aspects of their well-being within a given sociocultural context  
-Develop effective listening, questioning, non-verbal, and writing skills to communicate with patients, families, and professional associates seeking assistance when necessary |
| 6. Interpersonal and Communication Skills. Demonstrate effective understanding, information exchange, and teamwork with patients, their families, and other health professionals. | |

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traveled with peers in the same program could opt to create one PowerPoint and present as a group. The essay, PowerPoint, as well as patient log and Physician Verification Form, were submitted to course faculty by the second week of the sophomore year, either in person or through an online drop box as part of the University’s online course management system.

Within one month of submission, all students who completed the course attended a mandatory meeting and shared their presentations with each other. Presentations were also given throughout the year at University-wide meetings sponsored by IHI G. The group selected presentations representing a variety of regions and cultures, often in conjunction with a cultural organization on campus, in order to recognize past participants and inspire new ones. Presentations also shared the achievements and challenges of student experiences, led discussions on country-specific, medico-cultural issues, and raised awareness of global health issues around campus.

NV and MC independently screened the reflection essays for common themes; only those themes recognized by both screeners were used to define learning outcomes. Themes were chosen based on the repetition of keywords and the patterns of ideas noted while reading the essays. Constant comparisons were made by re-reading essays as new themes were defined. Exact quotations from each essay representing a particular learning outcome were extracted. These quotations were then counted to calculate the frequency of each learning outcome and a portion selected for publication (see Table 4).

Results

Description
In 2007, 30 second-year CMS students (N = 30, 15 males, 15 females) participated in and successfully completed the MCU/R607 elective with a combined total of 3,276 h spent abroad. Students completed an average of 109.2 h each, with a range of 40–300 h.

Pattern of involvement
Students traveled across four major continents: Asia (South, East, and Southeast), Africa, Central America, and Europe. Thirty-four percent of students traveled to Asia, 23% to India, 14% to Ecuador, 7% to Ghana, 7% to South Korea, 3% to Armenia, 3% to the Czech Republic, 3% to the Philippines, 3% to Costa Rica, and 3% to Vietnam. Table 2 describes the programs offered at the various international health sites at which students participated.

Ninety-three percent of students observed surgical procedures, 70% conducted physical examinations, 46% assisted in surgery, 43% of students performed history taking, 17% administered medications (Rx), 17% conducted social counseling, and 10% stated ‘other.’ The skills listed under the heading of ‘other’ included inserting intra-venous (IV) lines, inserting Foley catheters, inserting naso-gastric tubes, and assisting with cardiac stress tests. All procedures were carried out under the direct supervision of a qualified preceptor.

One hundred percent of students interacted with physicians, 87% with nurses, 23% with physiotherapists, 13% with religious chaplains, 7% with social workers, and 7% with others. One inter-professional interaction listed within ‘other’ was a practitioner of traditional Ayurvedic medicine in India. Another student witnessed the integration of Chinese acupuncture with allopathic medicine.

Student responses
Within one week of the mandatory student presentations, 100% of students completed a ‘Post-Experience Survey’ composed of various statements pertaining to international health (Table 3). Prior to survey distribution, Institutional Review Board (IRB) approval was granted and students provided informed written consent. This survey used a 5-point Likert Scale (Strongly Disagree, Disagree, Somewhat Agree, Agree, Strongly Agree), with each response receiving a numerical value from one to five. We compiled and analyzed data from the survey based on whether the response was one or two (negative) or three to five (positive). One hundred percent of students were exposed to a new culture, 100% would recommend MCU/R607 to colleagues, 100% would like to make future contributions to international health in developing nations, 97% reported exposure to a new language, 93% felt more culturally sensitive, 90% thought the CMS curriculum prepared for this international experience, 87% learned novel skills that they would not normally have learned in North America at this stage of their education, 83% improved their knowledge on international health initiatives, and 70% believed this international experience altered their career choice.

Table 4 correlates student essay-derived learning outcomes and CMS core competencies. Selected student quotes reflect common themes witnessed during their international experiences. The most common themes reference cultural influences on medical care, government involvement, and socioeconomic issues. The remaining themes, from most to least frequently mentioned, include references to learning compassionate medicine, challenge of language barriers, future student involvement with underserved populations, preclinical student motivation, sanitation and sterility concerns, self-awareness and recognition of personal limitations, cultural sensitivity, lack of preventative medicine, strengthening non-verbal communication, and comparisons with American health care.

Conclusion
As world cultures integrate, students and physicians across the USA have increased their concern for cultural
sensitivity and competence. In order to better understand the interactions of these cultures with the health care system, many medical students elect to volunteer in clinics and hospitals abroad or join a Global Multiculturalism Track (4, 10). Medical students have driven much of the growth in global health education (2). This paper describes the global health curriculum initiated, designed, and executed by medical students with faculty assistance and support, as well as its successful impact on the development of its participants as well-rounded physicians.

The structured curriculum of MCUR607 led to a paradigm shift of the extracurricular IHIG from a mere ‘travel club’ to an academic experience of cultural immersion and reflection on health care determinants. Despite students’ pretravel exposure to international health through peer and physician-led IHIG lectures, MCUR607 students remained surprised by their firsthand experience with cultural and societal-specific practices integrated into the hospital environments. One student was astonished by the rarity of prenatal care in a large, urban center of Vietnam. She attributed this to providers’ lack of emphasis on prevention education and limited demand secondary to the existence of traditional home remedies. A student who observed decreasing health care quality for poor patients in India learned how government corruption blocks the flow of finances allocated for system improvement. Another student did not expect emergent surgical care in China to require advanced payment, and his colleague concluded that ‘health care is a business worldwide.’ Rather than make simple observations, students used critical thinking to analyze the practice differences as a socio-behavioral science. As seen through their essays (Table 4), students primarily emphasized the impact of social class and economic disparities on health care access, as well as the role of culture on influencing a nation’s practice of medicine.

These cross-cultural interactions help to promote the recognition of diverse practices, beliefs, and value systems, which is imperative for the practice of medicine as global interdependence strengthens. For example, many students who traveled to East Asia found that physicians defer to a patient’s family rather than the patient when disclosing terminal prognoses. In the future, students who encounter a family wishing to withhold a terminal

| International health sites | Program description and opportunities |
|---------------------------|----------------------------------------|
| Private Hospital – Dervan, Maharashtra, India | Students work within a rural rehabilitation clinic that treats a patient population comprised primarily of elderly farmers suffering chronic illnesses (joint, spine, and muscle pain) |
| Private Hospital – Agra, Uttar Pradesh, India | Students work alongside the chief orthopedic surgeon with a rural agricultural patient population |
| Private Humanitarian Hospital – Thane, Maharashtra, India | Students work in a philanthropic hospital with a destitute patient population most of whom cannot afford treatment elsewhere |
| Local Community Hospital – Mussorie, Uttarakhand Pradesh, India | Students work alongside physicians treating a diverse patient population in a hospital located at the foothills of the Himalayas |
| Missionary Hospital – Tansen, Nepal | Students work with physicians and nurses to serve the indigenous population of this mountainous region |
| Government Hospital – Linh Ai City, Zhejiang Province, China | Students observe surgical (general, orthopedic, and neurosurgery) and OB/GYN procedures in an underequipped hospital setting serving a destitute population |
| Medical University Hospital – Shenyang, Liaoning Province, China | Students observe surgery at this well equipped but overcrowded teaching hospital that services patients from the entire province |
| Public Pediatric Hospital – Ho Chi Minh City, Vietnam | Students rotate through various departments: Infectious Diseases, ER, ICU, and Neonatal Intensive Care Unit (NICU) |
| Physical Medicine and Rehabilitation Clinic – Yangpyeong, Kyung-Ki Do, South Korea | Students work within a rural rehabilitation clinic that treats a patient population comprised primarily of elderly farmers suffering chronic illnesses (joint, spine, and muscle pain) |
| Amazon Medicine Program – Ecuador | Students attend 20 h of Spanish language classes before rotating through various hospitals where they learn about tropical illnesses (Malaria, Dengue Fever) and have opportunities to observe surgery |
| Private Hospitals – Prague, Czech Republic | Students rotate in various Prague hospitals learning the basics of clinical medicine |
| Medical University Hospital – Armenia | Students observe reconstructive surgeries and assist with outpatient clinics |
| Medical University Teaching Hospital – Accra, Ghana | Students are mentored by resident physicians with opportunities to attend lectures, conduct patient rounds, and attend small group sessions |
Table 3. Post-experience survey comments

| Post-experience survey comments                                                                 | Positive comments (/30) | Percentage response (%) |
|-------------------------------------------------------------------------------------------------|--------------------------|-------------------------|
| I did receive exposure to a new language                                                         | 29                       | 97                      |
| I learned novel clinical skills that I wouldn’t have obtained North America                      | 26                       | 87                      |
| I did receive exposure to a new culture                                                          | 30                       | 100                     |
| This international clinical experience altered my career choice                                  | 21                       | 70                      |
| I would recommend MCUR607 to fellow students                                                     | 30                       | 100                     |
| I feel the CMS curriculum prepared me for this international clinical experience                | 27                       | 90                      |
| I plan to contribute to international health care in developing countries in the future          | 30                       | 100                     |
| This experience has made me more culturally sensitive                                             | 28                       | 93                      |
| This experience has improved my knowledge on global health initiatives                           | 25                       | 83                      |

prognosis from a patient can address the situation in an empathic, culturally sensitive manner. Several other students in India, China, and Ecuador observed the integration of indigenous healing modalities with Western medicine and found them extremely compatible. They are more likely to question patients about any complementary or alternative medicine the patient may have used in order to provide more comprehensive care. Such medico-cultural experiences have the potential to influence the way students practice medicine in the future due to their new perspectives. Students’ recognition of these perspectives facilitates the establishment of a strong doctor–patient relationship, thus contributing to improved health status of immigrants arriving in the USA and the diverse cultures that make up this country.

The positive impact of the global health experience on the practice of medicine extends beyond treating members of different cultures. Students developed more compassionate methods of healing all patients by observing physicians practice ‘thoughtful medicine’ with ‘human touch,’ despite limited resources. In addition to exposure to various languages, students felt as though they had strengthened their non-verbal communication skills and the ability to provide comfort to patients with whom they could not speak. Students renewed their confidence while surviving and adapting in settings with fewer resources, language barriers, and cultural differences. Many redefined their understanding of privilege and, from this self-awareness, realized their desire to incorporate treating underserved populations into their careers. A reward of global health education not previously described in the literature (2, 4) is the short-term impact to motivate preclinical students. As summarized in Tables 1 and 4, the vast benefits from a clinical experience in a developing country that students have described meet each of the MCUR607 objectives and fulfill all six CMS core competencies.

Despite the successful outcomes of the course, there exist several logistical hurdles of cost, language, and planning for students participating in MCUR607. Students must fund the trip themselves, and it is acknowledged that there are students who cannot participate in the course due to financial constraints. There are no scholarship funds available from CMS, but students are given information from IHIG about outside scholarships for which they can apply. Some programs, like that in Zhejiang Province of China and Dervin village of India, may subsidize housing or food costs, thereby attracting considerably more students. For universities without affiliated global health funding or departments like CMS, financial challenges remain an obstacle for students who wish to participate in clinical experiences abroad. Students must also accept a considerable organizational burden as part of the course. A large amount of time and resources must be devoted to finding a suitable placement for the student to fulfill their course obligations. If the experience does not materialize as planned, students must also problem-solve in real time. Two MCUR607 students traveling to Costa Rica discovered that their program, while fulfilling the language teaching as promised, did not have adequate site placements for the clinical portion of the experience. One student took the initiative to find her own clinical site and the other decided to use the time to travel rather than completing the course requirements. These students managed to communicate via email with the course faculty who attempted to assist with a new placement, but the ultimate responsibility fell on the students.

While students strengthened their non-verbal communication skills, several students wished they could speak the language of their patients to benefit the site. Even students who had experience in a language often felt local dialects or slang prevented them from fully participating in patient care. The language barrier drove many students to participate in surgical procedures that are not subject to the same language constraints of the history and physical examination in the clinic setting. Despite these obstacles, students enjoyed the course and all agreed they would recommend it to their peers.

There are several limitations to the conclusions drawn in this paper. Because no data were collected from students who traveled abroad prior to the creation of MCUR607,
### Medical school’s six core competencies

#### 1. Medical and Scientific Knowledge. Demonstrate knowledge about established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences and apply this knowledge in caring for patients.

| Culture influences a nation’s practice of medicine (20*) |
|----------------------------------------------------------|
| ‘Always positive prognosis no matter truth in order to maintain patient’s strong will to live’ – China |
| ‘It is amazing how many illnesses are treatable and the knowledge the locals had about the uses of the many plants in the forest’ – Ecuador |
| ‘Routine prenatal care is not free and occasionally not sought after due to beliefs in traditional home remedies and alternative medicine, as well as the lack of widespread encouragement from the medical community’ – Vietnam |
| ‘Ayurvedic medicine can be considered as a prophylaxis or a component of wellness living’ – India |

#### 2. Patient Care and Prevention. Demonstrate patient care that is compassionate, appropriate, and effective for the promotion of health, prevention of illness, treatment of disease, and the end of life.

| Challenges to sanitation in community and sterility in hospital (9*) |
|---------------------------------------------------------------|
| ‘The region was extremely overpopulated with people and stray animals. Due to these living conditions, the sanitation was very poor and would often lead to people getting sick’ – India |
| ‘Likely cause of (intestinal) parasites is contaminated water’ – Ecuador |
| ‘When I asked for a pair of gloves to wear while removing sutures from a patient’s head, I was denied them; it even appeared as though I had insulted my doctor by requesting them’ – China |
| ‘Justification of using gloves had to be strong enough to meet the cost of gloves’ – Philippines |
| ‘Windows were open and paint was peeling off the OR walls’ – Czech Republic |

| Little emphasis on prevention (7*) |
|----------------------------------|
| ‘Great deal of people do not seek care until their conditions become life-threatening’ – China |
| ‘If she had been screened [for toxoplasmosis], she could have been treated and thus saved her baby… many are not informed of the importance of seeing a doctor throughout one’s pregnancy’ – Costa Rica |
| ‘The approach to preventative medicine is inconsistent and sometimes even nonexistent’ – Vietnam |

| Impact: future involvement with underserved populations (10*) |
|-------------------------------------------------------------|
| ‘I know now how rewarding it is to see other cultures and give to communities other than my own’ – Costa Rica |
| ‘As physicians, we have the opportunity and the voice to work and represent the developed countries across the globe’ – China |
| ‘After this, I have a strong desire to spend time overseas participating in volunteer projects/organizations to help those in need’ – India |
| ‘I am now considering returning to China after obtaining my medical degree and working in underdeveloped areas to educate people on healthcare and primary care’ – China |
| ‘responsibility of providing international health care is just as important as providing health care in the United States’ – Ecuador |

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*Table 4. Post-experience essay themes and quotes*
### Medical school’s six core competencies Post-experience essay – themes and quotes

#### Self-awareness and limitations (9*)
- ‘I made my first mistake of asking my mentors if they had children, forgetting China’s strict policies on having multiple children’ – China
- ‘Limits of my education and how much more I need to learn’ – Philippines
- ‘I didn’t realize that being in the villages would mean some of the men would look down on me simply because I was a woman’ – India
- ‘I will not take the respect that doctors are given in the U.S. for granted’ – China
- ‘I will never forget my stay in the jungle. … you don’t need much to live a very peaceful and happy life’ – Ecuador
- ‘I leave China with a renewed sense of social responsibility’ – China
- ‘Biggest lesson I learned was confidence’ – Costa Rica
- ‘Opportunity to appreciate the true extent of my privileges and taught me the true definition of humanity’ – India

#### Sensitivity (7*)
- ‘Traditional Chinese medicine and Western medicine are not mutually exclusive and can actually be practiced at the same time. … I will be more open and accepting of health ideas and practices among the diversity of patients that I will come across’ – South Korea
- ‘Make decisions for a patient on the basis of what is the best for the patient as opposed to worrying about if the patient can afford treatment’ – India
- ‘Humbling experience because it showed us just how poor these [elderly] people were, and how their health was so greatly affected after being left untreated for so long’ – China
- ‘Their worries were not entirely without merit, since the lack of standardization and accreditation in China meant a lot of substandard clinics without resources existed, and no one would like to take the risk when it comes to their health’ – China
- ‘Though [decision making without patient] is drastically different from the American model of informed consent, one must understand the difference in circumstances. … high cost of care is unaffordable to an average patient but rather burdened by the entire family where most cannot afford extended care’ – China

#### Impact: culture and new perspectives teach students to practice compassionate medicine (13*)
- ‘[This] medico-cultural experience may very well have changed the way I will practice medicine in the future and has given me new perspectives on how other people in the world live their lives’ – India
- ‘Limitless resources aid in the practice of medicine but are not in any way necessary for the practice of thoughtful & effective medicine’ – Armenia
- ‘Seeing this compassion and generosity has been an example to me to do the same once I’m a practicing physician’ – India
- ‘Global exposure to the practice of medicine and a heightened understanding of different cultures that will make me a balanced, more conscientious physician’ – China
- ‘While medicine is a universal practice, it is essential for physicians to be culturally competent’ – South Korea
- ‘Reinforced my ideal of never letting go of the “human touch” when practicing medicine’ – Vietnam
- ‘My job as a future doctor is not only to heal but to provide them with as much comfort as I can’ – China

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4. Practice-based, Life-long Learning. Demonstrate the ability to appraise and assimilate scientific evidence and methods to investigate, evaluate, and improve one’s own patient care practices.

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| Medical school’s six core competencies | Post-experience essay – themes and quotes |
|----------------------------------------|------------------------------------------|
| **5. Systems-based, Inter-professional Practice.** Demonstrate an awareness of and responsiveness to the larger context of health care and the ability to call on system resources and other health care professionals to provide optimal care. | ‘I am a much more culturally competent individual than I was before I left for China’ – China  
‘It is these understandings and perspectives [to different cultures and lifestyles] that are essential to shaping the whole physician… to treat only the body is to err greatly’ – India  
**Government influences health care systems (16*)**  
‘The Indian government has started a program that pays for all TB meds’ – India  
‘Today, the Czech medical system is still in the process of changing from Communist times’ – Czech Republic  
‘Armenia has passed legislation outlawing smoking in public transportation vehicles where quantity of second hand smoke is dangerously high’ – Armenia  
‘Occupational health and safety regulations in the United States have dramatically reduced the number of reported illnesses related to the inhalation of silica dust particles, but China has fewer regulations on this matter’ – China  
‘Financial allocations are given to help the poor; however, many of the government officials keep the money, and as a result the healthcare to the poor keeps on worsening’ – India  
**Comparisons to American health care system (4*)**  
‘The lessons I learned made me critical of some aspects of American medicine such as the rushed care of patients, yet appreciative of other facets such as access to care in times of emergency’ – China  
‘Even though the hospital is limited in resources, they will not compromise on the quality of health care being delivered. As one doctor said to me: “A stitch received at this hospital is of the same make and quality of one you would receive in the US”’ – India  
‘Even though my department was very good with English, I still wish that I could have understood all of their medical discussions regarding the patients and procedures’ – China  
‘[Language] obstacle was most troublesome when documenting patient symptoms… local people spoke rapidly and tended to use a lot of slang not taught in Spanish class’ – Ecuador  
**Opportunity to strengthen communication (7*)**  
‘Could even communicate with patients and other medical professionals through smiles an different expressions and gestures’ – China  
‘What I learned from residents of Lagrasu… they taught me without uttering a word of English’ – India  
‘Frustrated that I could not speak language and offer her words of comfort, I simply held her hand and pet her head’ – China  
‘Immense value of learning a new language’ – South Korea  
**Inspiration in a sea of books** (10*)  
‘Motivated me in my studies but also helped me grow as a person’ – India  
‘I thought that many of the lecture material from 1st year would be useless, but I learned that almost no detail is too minute’ – China  
‘It was a good way of gaining perspective on why we as students have to sit through course lectures of seemingly irrelevant material to the actual practice of medicine’ – South Korea  
‘I have come back stronger and more motivated than I have ever been to work hard in achieving my goals to become a physician’ – Ecuador |
we can only infer the advantage of this model aside from the additional course credit students receive. The course founders, MC and NV, did travel in the year prior to course creation and agree with the benefits of the structured curriculum from an empirical standpoint. In addition, no control data were collected from peers of MCUR607 participants who did not travel, so we cannot know if students are developing similar skills through non-international experiences. The authors recognize the subjective nature of the data and the difficulty in preventing observer bias by the two authors, MC and NV, who coded the essays for themes. For this reason, we included the exact quotations from student papers in Table 4; however, we do not include the full text of 30 essays for logistical reasons. Finally, we faced challenges in monitoring the quality of student experiences. While we attempted to validate the clinic sites in advance through submission of detailed approval forms, all assessment was at the discretion of the course faculty. The Physician Verification Form and patient log can be reviewed if there is question of experience quality, and the reflection essay offers students an opportunity to disclose their own analysis of any limitations in the experience. Because of the subjective nature of the course, there is, ultimately, an implicit trust in students who organize their experience, to research quality, and the reflection essays offer students the opportunity to disclose their own analysis of any limitations in the experience. We are treating people. Humans. That we are more than matter, but spirit, body, and soul, and to treat only the body is to err greatly. This is what I learned from the residents of Lagrasu. This is what they taught me without uttering a word of English' – India

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international heath efforts (2, 4, 15). Early global experiences afforded by MCUR607 may impact student decision making during a formative stage. Future studies should attempt to collect and analyze data regarding student specialty choice and host country benefit with the aim of answering these questions.

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