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Rules of Engagement: The Principles of Underserved Global Health Volunteerism

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The day begins at 7:00 AM with a layer of mosquito repellent and boiled coffee in a tin cup. Our medical clinic in the small village of Rancho Pedro along the Dominican Republic-Haiti border is a small hut composed of dilapidated wooden planks fastened together under a thatched reed roof. Patients with a variety of ailments line up daily outside the clinic door in anticipation of seeing a physician, often for the first time. Most patients have been waiting for hours, usually after enduring an overnight mountainous trek from a neighboring Haitian or Dominican village. Many of the medical problems encountered can be treated effectively with simple measures of wound debridement, bandages, analgesics, or antibiotics; however, some are more complex with no referral options. The work is intense but inspiring, rewarding but often frustrating as the limitations of our abilities quickly become apparent.

Many such medical programs generate unique personal experiences for volunteer healthcare providers; however, we continue to wonder whether any of our efforts have any meaningful and lasting benefit. We work under the pretense of promoting community autonomy and health sustainability in rural communities without access to healthcare, but can any positive difference in community health through the efforts of our volunteer medical teams be noticed? For the local rural communities that we temporarily serve, have any of our interventions subsequently reduced the burden of illness or death? Has individual or communal quality of life been enhanced? Have the social, economic, and educational boundaries been addressed to realistically implement some sustained beneficial impact? After our team leaves Rancho Pedro, is the community really better off, or do they simply wait for the next foreign medical team to arrive?

To understand global health is to appreciate the dependence of public health on the regional environmental, economic, political, cultural, and social structures.[1] Healthcare, education, and poverty are all closely intertwined. The opportunities to grow up, go to school, earn money, and eventually support a family all depend on a basic level of health. The breakdown in local public health and prevalence of hunger detract from most educational opportunities, reducing financial and societal stability. Preventable deaths from childhood diarrhea, inadequate obstetric and neonatal care, infectious diseases, and neglected chronic conditions, including cardiovascular disease, diabetes, and hypertension, all dramatically reduce a community's potential for economic and social productivity. In addition, desperate economic and unstable political conditions entice many local health providers to move away.

Many reasons have been identified to engage in underserved healthcare projects. Individual providers and relief organizations may feel an inherent responsibility to improve healthcare delivery in both domestic and international underserved communities. The motivation may stem from a fundamental desire to help others in need and perhaps is augmented by a progres-

Funding: None.

Conflict of Interest: None.

Authorship: All authors had access to the data and played a role in writing this manuscript.

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0002-9343/$ -see front matter
doi:10.1016/j.amjmed.2012.01.008

sive discordance of resources and healthcare availability between industrialized and developing countries. On a larger scale, the Centers for Disease Control and Prevention and the US Department for Homeland Security recognize that public health is never an isolated concern. Modernized air travel and international commerce provide efficient avenues for the global spread of select infectious diseases. New strains of influenza virus (including novel and avian influenza virus), Severe Acute Respiratory Syndrome coronavirus, and drug-resistant tuberculosis, as well as vaccine-preventable communicable illnesses, can flourish in regions lacking adequate public health infrastructure.

There are numerous international healthcare and humanitarian programs working in developing countries and no apparent paucity of medical volunteers or financial donations. Indeed, many US medical centers and medical schools have been developing their own global health programs that attract prospective physicians, scientists, and philanthropic donors. Among graduating medical students in the United States from 2000 to 2010, 30% to 39% had participated in an international health elective during medical school.[2] Such programs sponsored by US medical centers can facilitate student and resident participation in medical volunteer efforts, provide on-site training for supervisory physicians, and allow development for possible clinical research projects.

The global health programs at these medical centers also enhance their appeal to prospective medical school and residency applicants. In turn, most medical students participating in a structured international health fellowship program find such experiences beneficial to their profession through enhanced cultural sensitivity, improved patient communication and examination skills, the opportunity to see a wide variety of pathology, and more appropriate medical resource use.[3,4,5] Such international health experiences also correlate with increased student selection of primary care medicine and careers in public health and future work with underserved populations.[6] **Table 1** lists a number of benefits and values cited by participants of international clinical rotations.

POTENTIAL RISKS AND CONCERNS

Despite the abundance of interest and altruistic passion for international underserved healthcare work, there are a number of risks and potential harm that can result from ill-equipped, shortsighted, and unstructured projects (**Table 2**). For any project, one must first determine whether direct patient care is even warranted or whether the focus is better placed on alternative measures in public and preventative health (eg, vaccinations). Volunteers providing healthcare may not always be trained or licensed health providers.[7] In the absence of appropriate supervision, visiting medical students and residents may quickly over-reach their clinical abilities and may not fully understand select diseases or managerial approaches appropriate for a select region.[8] Even experienced physicians without adequate preparation may quickly find themselves without the optimal procedural skills or appropriate knowledge base to provide quality service.[8,9] Different languages, local customs, and religious beliefs can pose barriers to well-intentioned healthcare delivery and community acceptance of public health measures.

PERSPECTIVES VIEWPOINTS

- Interest and participation in global health projects by students and health providers are increasing throughout the United States.
- Significant harm to communities may occur through the lack of public health focus, appropriate skills, medical supervision, familiarity with local diseases and customs, and the subsequent creation of community dependency.
- To reduce the risk of harm, we suggest a set of guiding principles: quality service, sustainability, professionalism, and safety.

Intermittent international healthcare volunteerism by itself does not confer a sustainable community healthcare benefit. Without the participation and engagement of local health providers, there is a significant risk of fulfilling the self-interests of the volunteer team rather than the inherent needs of the local providers and communities. Quality patient care, education, and research depend on an integrated understanding of the medical needs identified and expressed by local providers and community leaders. Using medications and materials predominately supplied by volunteer medical teams rather than what is locally available may prohibit the

Table 1 Potential Benefits to Medical Students, Residents, and Trainees Conferred Through International Clinical Experiences[4,5]

Opportunity to encounter diseases not typically encountered in United States
Opportunity to see more advanced stages of select diseases not commonly seen in United States
Opportunity to improve physical examination skills and procedural skill sets (via less reliance on laboratory, radiology, or consultation options)
Opportunity to understand the fragile socioeconomic relationship among local government, hospital, and local medical clinics
Greater awareness of cultural sensitivity and importance of patient communication

Table 2 Actions That Can Produce Harm

Embarking on medical volunteerism without first considering alternative or supplemental activities to improve local community health
Allowing untrained volunteers to perform healthcare
Overreaching or mismatching providers' medical knowledge base and skill sets
Not incorporating or recruiting the services and expertise of local providers
Focusing on the medical and scientific interests of the visiting team rather than the needs and requests of local providers
Being unfamiliar with local languages, cultures, or system of beliefs
Being unfamiliar with prevalent regional diseases and management strategies used by local providers
Relying on medications (including non-WHO Essential Medicines), equipment, and other supplies donated externally rather than what is locally available
Dispensing inappropriate medications (eg, vitamins, NSAIDS, and antibiotics)
Performing surgery and other invasive procedures without adequate patient follow-up to address possible complications
Donating medical equipment that is not required and is beyond the capacity of local providers or healthcare center and without a plan for maintenance
Having inadequate pre-travel preparation (ie, updating vaccinations and taking precautions for vector-borne and possible blood-borne infections) and education regarding appropriate food and water consumption and sun exposure
Creating local community health dependency on external medical team

NSAIDS = nonsteroidal anti-inflammatory drugs; WHO = World Health Organization.

development of a sustainable medical and pharmaceutical supply chain. Furthermore, failing to match the equipment and technology used to the onsite needs and level of training risks further alienating local health providers.[10]

Inappropriate dispensing of available medications, including nonsteroidal anti-inflammatory drugs, vitamins, and antibiotics, can both harm patients and create a false community perception that there is "a pill for every problem." Performing complex surgical and other invasive procedures until the time of team departure prohibits any subsequent opportunity to adequately manage potential complications (including infection and excessive bleeding).[10] The unfortunate end result that can develop from shortsighted activities is the unintentional development of community or regional dependency on returning external medical organizations rather than any meaningful progression toward local health system autonomy and quality.

DEVELOPING GUIDING PRINCIPLES

As underserved health and volunteer programs continue to develop, it becomes increasingly important to establish a set of guiding principles by which to operate. Whether the focus is on patient care delivery, vaccinations, preventative health measures, healthcare training, or research, 4 fundamental principles should be considered in the development of any such program: service, sustainability, professionalism, and safety (**Table 3**).

Service

The quality of healthcare delivered within an underserved location should be the highest possible allowed by the resource constraints. The needs of the patients should always come first. Before embarking on a trip, efforts should be made to adequately learn and prepare to manage diseases of poverty. Students and residents should be supervised and providers should practice within their knowledge base and skill sets. Providing service can take many forms. Well-designed service projects fulfill a supporting or assisting role in partnership with local healthcare organizations and avoid the missteps of ignorance, arrogance, and paternalism toward both patients and local providers within a community.[11] Frustration and helplessness will be encountered while working in under-resourced conditions as many readily preventable and curable diseases often prove fatal. For patients and clinics without referral options, visiting providers must be able to acknowledge their limitations, uphold patient dignity, and provide comfort care measures. In addition to patient care, service may include support of local healthcare systems with continuing medical education, assistance in their research endeavors, and teaching providers how to train others (a model of "training the trainers").

Sustainability

The development of a sustainable program requires a clear identification of project goals, objectives, and systems for measuring outcomes composed within an infrastructure that enables and promotes autonomous function. The primary objective is to avoid the development of any sense of external dependency or learned helplessness, often fueled by a reliance on external medicine, equipment, or other donated resources to solve problems. The identification and development of partnerships with local providers and organizations focusing on longitudinal engagement with the target com-

Table 3 Ethical Commitments and Considerations

Service	
	The best interests and needs of each patient should always be the primary objective.
	Ensure team "preparedness" for a particular project, including the ability of a group of providers to work together and a familiarization of the common medical problems, cultural beliefs, and local medical system of the host country.[17]
	Health providers should appropriately apply their training and acknowledge their limitations.
	Visiting teams must have the capacity to exert flexibility in practice, accommodate local health provider and patients' needs, and have patience with project development.[15] It remains imperative that as guests of a foreign country, visiting providers must respect the "local ways" of doing things.
Sustainability	
	Develop outcome assessments of patient care activities, patient safety, quality control, and overall mission impact.[17]
	Use education and "training the trainers" as a model of intervention.
	Develop partnerships with local health agencies and supporting nongovernmental organizations.
	Use medications available locally or through the WHO's list of Essential Medicines.
	Develop a global health program curriculum with structured didactic sessions, peer-led seminars, journal clubs, and competency assessments.[18]
Professionalism	
	Ensure that the same ethical patient care standards practiced in the United States are upheld to the same standards in underserved locations.
	At a minimum, ensure that the community and health clinic are not left worse off as a result of the volunteerism effort.
	Ensure that the exploitation of 1 partner (local health providers or patients) for the benefit of another is avoided at all cost.[19]
	Ensure that medical students, residents, and other visiting trainees have adequate supervision and mentorship to ensure quality of patient care.
Safety	
	Perform pre-travel medical assessments for all team members.
	Ensure that team lodging, transportation, food and water, and security measures have been confirmed before travel.
	Team members should be familiar with local laws, customs, and religious beliefs that directly affect interactions with patients.
	Obtain appropriate approvals by local health organizations if visiting teams will be involved in direct patient care.
	Outline an appropriate "exit strategy" in case of medical emergency or sudden political unrest.

WHO = World Health Organization.

munity can help reduce this risk. Sustainable outcomes rely on the empowerment of local providers and the communities themselves to provide a higher quality of healthcare.

Education and preventive health measures have a pivotal role with sustainable healthcare interventions and can nicely complement clinical patient care duties or research initiatives. Whether the teaching objective is to demonstrate new surgical techniques, didactically convey new scientific discoveries, refresh vital skill sets (eg, wound care, basic life support, and advanced cardiac life support training), or address community practices of food handling, hygiene, and waste management, education can have an enduring effect.

Medical equipment and medication donations are typically well received; however, strategies for integration into the local practice, repair, and maintenance are crucial for any long-term benefit. Interaction with the local supply chain management may help ensure availability of some basic equipment, replacement parts, and essential medicines as outlined by the World Health Organization's biennial publication.[12]

Professionalism

Professionalism embodies the core values, goals, behaviors, and attitudes that constitute the practice of medicine. The profession of medicine has not only an inherent societal responsibility to improve the quality of health but also a responsibility to deliver the best care possible to every patient. To optimize quality healthcare, visiting physicians need to seek out and work with local health providers. In 1910, during his commencement address at Rush Medical College, William J. Mayo, MD, summarized the inherent responsibility of medical providers and societies to work together.

> The sum-total of medical knowledge is now so great and wide-spreading that it would be futile for one man to attempt to acquire, or for any one man to assume that he has, even a good working knowledge of any large part of the whole. The very necessities of the case are driving practitioners into cooperation.[13]

Chase and Evert[14] outline 3 ethical principles fundamental to professionalism: the primacy of patient welfare, respect for patient autonomy, and commit-

ment to social justice. Although many international medical volunteer programs focus on a "duty to assist" and enhance available medical service, the most basic of our medical values, "primum non nocere" (first do no harm), should guide our actions. The core principles of how we practice medicine in our own hospitals and clinics, including respect for patient autonomy, privacy, dignity, and confidentiality, should be upheld. Our commitment to social justice is indeed predicated on our intent to do no harm, to reconstruct a sustainable platform for health improvement, and to assist local providers in these efforts.[11] For some patients, the best medicine applied may be in the form of just listening, making eye contact, producing a smile, and touching in a culturally appropriate way.[15] By using whatever time is available, such measures help establish empathy, respect, and appreciation for the patients for whom we care.

Safety

Not to be undervalued, the safety of all team members must be adequately addressed. A well-structured program focuses not only on the well-being of the patients and community but also on the volunteer medical providers, residents, and students themselves. **Table 3** lists a number of pre-travel considerations that participants should address. This preparation begins by ensuring that each member of a medical volunteer team has a formal pre-travel assessment (eg, through a local travel clinic). Such services include appropriate pre-travel and routine vaccinations, anti-malaria prophylaxis, precautions against mosquitos and other vectors of infection, and information on food handling, sun exposure, prevalent local diseases, and how to register with the US embassy in a foreign country.

It is important to ensure before travel that in-country lodging and transportation and food, water, and other logistics for the team have been established. Personal safety and team security should be addressed and appropriate measures taken to ensure a positive experience. Many local laws and customs of a country may be different than those in the United States. Such differences should be discussed with the team and compliance ensured. Depending on the types of service planned, select personal protective equipment (including gloves, hand sanitizers, and face masks) may need to be acquired. An important but often overlooked item is outlining a reliable "exit strategy" in case of medical emergency or sudden development of local political instability.

PUTTING IT ALL TOGETHER

In acknowledgment of the array of potential benefits and significant risks of underserved health activities, many residency training programs are introducing more formalized global health training into their curricula. Many of the potential risks of international health electives might be averted by providing prerequisite education in global health. It has been shown that optimal, productive, and responsible educational experiences for students and residents are generated through the combination of comprehensive educational courses on select global health issues with subsequent international overseas medical electives.[16] Many centers have developed global health tracks within their residency programs to train future health providers interested in underserved domestic and international healthcare.[17] Such programs focus not only on the diagnostics and management of novel diseases but also on the interrelationships with poverty, education, religion, and cultural beliefs.

Medical and surgical brigades that address readily correctable ailments in communities with inadequate local healthcare may provide a valuable service. The sustainability of any such efforts, however, must remain the primary focus. Despite the popularity of medical care volunteerism, focusing on vaccinations, provisions for clean water, and improvements in community hygiene may actually have a larger, more profound, and enduring impact. Such public health projects should be considerations for any undeserved healthcare initiative. Direct patient care by volunteers may still have a worthy role, but only in the appropriate context. If conducted with the emphasis placed on the needs and values of the local communities and a focus to assist and support the local health providers, the work of volunteer teams can be mutually beneficial.[18]

The education of local health providers ("train the trainer") is a key element to ensure a lasting benefit. Enhancing autonomy through training local providers and expanding medication and equipment supply chains will require time and patience. The establishment of open, trusting, and long-term relationships with the community and its local providers is essential to ensure the appropriateness of underserved health activities and optimize outcomes.[17,19]

Within the United States, the practice of medicine evokes many kinds of stress, including meeting clinical productivity targets, obtaining Medicare reimbursements, minimizing liability risk, and maintaining comprehensive documentation. Participation in underserved health activities can remind us of why we cherish our profession and reaffirm the core values of why we entered the healthcare profession. Both domestically and abroad, there are communities in dire need of medical services. Our efforts to meet those needs, however, should be coupled with strategies focused on sustainable and long-term health infrastructure development. By following the rules of engagement, we have a wonderful opportunity to make a positive and meaningful difference.

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