Using Volunteer Healthcare Providers To Expand the Global Health Workforce
EXPANDING THE IMPACT
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Contributors

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Through many years of involvement in the global health arena, I have witnessed the devastating health consequences resulting from a shortage of trained healthcare providers. This crisis directly affects the quality of health services worldwide, and often represents the difference between life and death for affected populations. While this critical issue has recently garnered worldwide attention, no solutions have been provided by the global community.

Well-designed volunteer opportunities for United States (US) based healthcare providers to provide hands-on training for healthcare providers in the developing world will help address the global shortage of trained healthcare workers. Improving the baseline level of healthcare services will also dramatically improve emergency response efforts following future disasters.

Working with a variety of non-governmental organizations and international agencies towards a joint solution to the global healthcare workforce crisis has been very rewarding and we are looking forward to future collaborative programs. The combined strength of the University of California network of healthcare volunteers and the expertise of the relief and development community in supplying needed medical supplies, equipment, training, and health systems strengthening will provide an innovative, effective, and much-needed solution to the existing crisis.

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UCLA CASIT Board of Directors
EXPANDING THE IMPACT
USING HEALTHCARE PROVIDER VOLUNTEERS

Introduction
A well-trained healthcare workforce is the heart of the healthcare system in any country. Alarmingly, there is currently a worldwide shortage of more than four million healthcare workers. This crisis severely affects Latin America, the Middle East, Southeast Asia, and North Africa, with Sub-Saharan Africa bearing the brunt of the problem. Furthermore, insufficient numbers of healthcare providers are being trained annually to meet ongoing global demand.¹

The lack of healthcare surge capacity was clearly evident following the 2005 Pakistan earthquake, 2004 Indonesian tsunami, and the 2003 Bam earthquake natural disasters that claimed 330,000 lives.² While the world’s attention is focused on the shortage of trained healthcare workers in the wake of natural and man-made disasters, the lack of trained healthcare workers and functional health systems results in millions of preventable deaths per year throughout the world on an ongoing basis.

A comprehensive solution to the global healthcare workforce shortage will require addressing the many factors contributing to this crisis. Contributing factors include inadequate medical training and education, poor retention of trained care providers (i.e., mitigating brain drain), insufficiently incentivized and motivated healthcare workers, and dysfunctional healthcare systems. Key elements of emergency medical response to large-scale disasters in at-risk areas include developing a well-trained healthcare workforce and functional healthcare system. These elements are supplemented by the rapid and coordinated deployment of well-trained and supplied emergency response teams to such disasters.

The UCLA Center for International Medicine (CIM) is working to improve the emergency medical response to natural and man-made disasters worldwide. This report will address the need to expand the global healthcare workforce and international emergency medical response mechanisms. It will also analyze the current mechanisms and channels that mobilize and coordinate healthcare

“At the heart of each and every health system, the workforce is central to advancing health.”
World Health Organization
volunteers in response to international disasters. The report will provide several collaborative pathways through which non-governmental organizations can coordinate their international emergency response efforts with volunteer teams of healthcare providers. Potential solutions include sending healthcare workers to existing field sites to assist in healthcare systems development, provision of baseline medical care and training, and developing surge capacity by sending emergency response medical teams in response to natural and man-made disasters.

The Need for a Trained Global Healthcare Workforce

In 2006, the World Health Organization (WHO) recorded a shortage of 4.3 million trained health workers worldwide. Over one billion people worldwide have little or no access to health services. The largest shortage of health workers is found in economically disadvantaged countries, where millions are dying or becoming disabled each year due to lack of proper medical care. Currently, 57 countries are facing critical shortages and maldistribution of healthcare workers (Figure 1).

Figure 1

Critical shortages and maldistribution of health workers


While this crisis affects countries worldwide, Africa is particularly afflicted by the ongoing shortage. Africa is home to 36 of the 57 countries facing extreme
deficiency. While African countries only account for three percent of the world’s healthcare workforce, they are home to 11 percent of the world’s population and bear over 24 percent of the global burden of disease (Figure 2).

**Figure 2**

<table>
<thead>
<tr>
<th>Global healthcare workforce distribution</th>
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<tbody>
<tr>
<td><strong>The Americas</strong></td>
</tr>
<tr>
<td>14% of the world’s population</td>
</tr>
<tr>
<td>10% of the global burden of disease</td>
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<tr>
<td>42% of the world’s health workers</td>
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<tr>
<td>&gt;50% of global health expenditure</td>
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Source: *The World Health Organization 2006*

According to the WHO, a major factor contributing to the global healthcare workforce crisis is the inadequate number of healthcare workers that have been properly educated, trained, and subsequently employed. Disease, economic conditions, political insecurity, population trends, and international migration are direct negative influences on the healthcare workforce in many poor countries.5

**The Current Landscape**

An analysis of the quantities of healthcare workers per country illustrates the overwhelming need in the world’s most economically disadvantaged nations (Figure 3). It is estimated that there are over 700,000 physicians practicing in the United States (US). Based on US census data, this amounts to one doctor for every 300 people.6 When this ratio is compared to some of the world’s most economically disadvantaged countries, the reality is stark. In Uganda, home to almost 29 million people, there exists only 2,200 trained physicians.7 In Ethiopia, there are only 1,900 trained physicians for a population of over 74 million. That amounts to only one doctor for every
40,000 people living in Ethiopia. The problem is not unique to Africa, as similar deficiencies exist in the Middle East and Asia. In Indonesia, over 222 million people vie for the attention of some 29,000 physicians. In Afghanistan, there is only one doctor for every 6,000 people.

While global healthcare worker shortage statistics are staggering, the direct health effects of this crisis translate into high rates of premature death and shortened life spans. In the United States, only eight children under five die per 1,000 live births, while in Haiti, 120 children per 1,000 live births die. Twelve percent of all children born in Haiti will die before their fifth birthday. In Pakistan ten percent of children will die before their fifth birthday, in Cambodia 14 percent, in Rwanda 20 percent, and in Sierra Leone that number is 28 percent.

The crisis directly affects maternal mortality rates as well. In the United States, only 11 of every 100,000 mothers, less than one percent, are lost to childbirth. Mothers in countries critically affected by shortfalls in numbers of healthcare workers are not afforded the same chances for survival. Maternal mortality rates per 100,000 births are 950 in Tanzania, 1,300 in Rwanda and 2,100 in Sierra Leone. Asia, the Middle East, and Latin America are affected as well, with childbirth complications causing death among 26,000 mothers in Afghanistan, 6,500 in Nepal in 2005, and 1,500 in Peru.
The *World Health Report 2006*, published by the WHO, called for a massive international effort to increase the quality and quantity of trained health workers worldwide.\(^{13}\) The report recommends specific actions that includes participation from government as well as local, national, and international organizations. The main focus is the expansion of education and training of healthcare workers in all specialties.\(^ {14}\)

By educating and training additional healthcare workers, health systems directly benefit. Improved access to well-trained healthcare workers directly influences health outcomes. Analyses in developing countries show positive correlations substantially impacting infant, child, and maternal survival ratios (Figure 4).\(^ {15}\) The quality of trained doctors and the density of their distribution also have shown positive outcome correlation in cardiovascular diseases. Increasing the numbers of trained healthcare workers, as well as updating the skills of existing workers, will directly improve quality care.\(^ {16}\)

**Figure 4**


**Natural and Man-Made Disasters**

The use of the term “disaster” is determined by the ability of a community to cope with an acute situation, one which often causes serious disruption to community functionality resulting in widespread human, material, economic,
and/or environmental losses due to surpassed local resource capabilities. These disasters can be the result of sudden catastrophic natural events (e.g., earthquakes, hurricanes, or flooding), chronic and progressive conditions (e.g., increasing prevalence of HIV infection), or complex man-made humanitarian crises (e.g., large displaced populations trapped in conflict zones).

In 2005, the United Nations reported that one half of the world’s population was living in urban areas, crowding only three percent of the earth’s land mass. Approximately 97 percent of population growth is occurring in the developing world, now home to 17 of the world’s 20 largest cities. Poverty and population pressures have forced these growing numbers of people to live in harm’s way. It is estimated that one of every two large cities in the developing world are vulnerable to natural disasters such as earthquakes, floods, and severe storms. Large populations located on coastal or flood plains, in earthquake zones, or on unstable hillsides, compounded by shoddy construction, unsafe buildings, and poor infrastructure increases susceptibility to large amounts of casualties during disasters. Natural disasters often cause massive displacement of populations creating instant exposure and vulnerability for such displaced persons.

In 2005, the Pakistan earthquake killed 73,000 people with 70,000 seriously injured and an additional 59,000 with minor injuries. It was estimated that immediately following the earthquake, four million people were in need of health services, rapidly overwhelming local healthcare provision capacity. In addition to the overwhelming amount of injuries, millions were rendered homeless which resulted in health risks (e.g., hypothermia, diarrheal illness, hepatitis, and meningitis) due to lack of shelter and water, and poor sanitary conditions. Large numbers of patients were dependent on international medical teams coordinated through the Ministry of Health, World Health Organization, and other international agencies for the provision of medical care.

Nearly 50 percent of the local health personnel were missing or dead in the immediate aftermath of the 2003 Bam, Iran earthquake. In addition, a majority of local healthcare facilities were completely or partially destroyed including three district hospitals, 10 urban health centres, 13 rural health centres, and 95 health houses. Initial health assessments revealed that primary causes of morbidity were direct injuries, while the primary causes of mortality were traumatic injuries and suffocation. Treating the injured became the responsibility of the provincial health system, with many university hospitals receiving more than

“Most disaster victims live in developing countries, where poverty and population pressures force growing numbers of people to live in harm’s way.”
Kofi Annan
12,000 injured patients airlifted from the disaster.\textsuperscript{26} Due to the overwhelming lack of healthcare infrastructure and services, deployment of foreign field hospitals was initiated upon the request for international assistance.\textsuperscript{27} A rapid response by the relief and development community helped mitigate the crisis by addressing basic needs (food, water, and shelter) and health care provision to large populations housed in temporary shelters.

Even in high-income countries, disasters can cause stress and overwhelm health systems. In the aftermath of Hurricane Katrina in 2005, the primary health issue became the inability of the displaced population to manage chronic diseases. This disaster cut off thousands of patients from basic healthcare services. Disease exacerbations due to lack of access to prescription medications (e.g., diabetes, heart disease, treatment regimens for HIV and tuberculosis) and lack of basic services for the mentally and physically disabled were prevalent.\textsuperscript{28} In countries where management programs for such diseases are already at limited capacity, it is foreseeable that these populations in need of daily care could become entirely overlooked in the event of a mass casualty disaster.

Using Healthcare Volunteers to Mitigate the Crisis

Countries with inadequate numbers of healthcare workers and health services are unable to effectively respond to the added healthcare needs that accompany disasters. Such countries are dependent on assistance from outside countries and the international relief and development community. Well-coordinated logistical and material support coupled with large-scale medical volunteerism can significantly mitigate the negative public health consequences of disasters.\textsuperscript{29}

A dual approach, which involves strengthening health systems and developing a rapid response capacity to acute health crises, is needed to mitigate the health effects of disasters. The creation of medical volunteer and exchange programs will ease the shortage of trained healthcare workers, develop functional health systems, and improve rapid medical response capacity following large-scale disasters. Sending healthcare volunteers to partner programs to engage in systems development in at-risk areas can better prepare local communities for future disasters. Volunteers can offer expertise to increase the capacity of the local systems, as well as develop disaster response protocols. By creating a program of ongoing health systems development, a cadre of seasoned volunteers can simultaneously be created for stand-by deployment to assist in the event of a disaster.

In an effort to assess the viability of this proposed solution, the UCLA CIM surveyed practicing and retired healthcare professionals in the United States regarding their interest in serving as an international healthcare volunteer.
Over 100 healthcare professionals from over 20 different medical centers and institutions and a variety of specialties were surveyed. We found that over 80 percent of surveyed healthcare providers were interested in volunteering overseas in some capacity. The majority wished to spend two to four weeks overseas, with pre-deployment planning time being the critical factor in their ability to participate. Forty-seven percent required one month of lead-time for logistical planning purposes. (Figure 5)

**Figure 5**

**Volunteer Logistics**

**How long would you ideally spend overseas?**

- 1 - 2 Weeks: 26%
- 2 - 4 Weeks: 43%
- 1 - 2 Months: 18%
- 2 - 4 Months: 6%
- 4 - 6 Months: 2%
- 6 Months +: 5%

**How much lead time would you need to plan your trip?**

- 1 - 2 Days: 8%
- 3 - 4 Days: 5%
- 1 Week: 16%
- 2 - 3 Weeks: 13%
- 3 - 4 Weeks: 11%
- 1 Month +: 47%

*Source: UCLA Center for International Medicine, 2008 Healthcare Provider Survey*
Over 80 percent of those surveyed would consider volunteering without any supplemental agency financial support and 97 percent would be willing to spend their time training health workers during their experience. (Figure 6 & 7)

**Figure 6**

**Training**

Would you be willing to provide training to local health staff overseas if the opportunity to provide direct patient care is limited?

- Yes - 90%
- No - 2%
- Maybe - 3%

*Source: UCLA Center for International Medicine, 2008 Healthcare Provider Survey*

**Figure 7**

**Funding**

Would you consider volunteering without agency funding?

- Yes - 22%
- Maybe - 56%
- No - 13%

*Source: UCLA Center for International Medicine, 2008 Healthcare Provider Survey*
In-country acceptance and support of such international volunteer programs by field-based partner institutions are a pre-requisite to such proposed solutions. We surveyed 53 field-based hospitals and clinics, currently benefiting from NGO support and found that 94 percent were interested in having international volunteers. Eighty-six percent had the ability to provide logistical support in some capacity, which may include meals, transportation, and accommodations. Fifty-five percent preferred volunteers for ongoing training versus disaster response, while 88 percent favored having volunteers both training careproviders and helping to treat patients. (Figure 8)

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**Figure 8**

<table>
<thead>
<tr>
<th>Program Preferences</th>
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<tbody>
<tr>
<td>Would you prefer volunteers for disaster/emergency response or for ongoing care and/or training?</td>
</tr>
<tr>
<td>Ongoing Care &amp; Training - 55%</td>
</tr>
<tr>
<td>Disaster/Emergency Response - 2%</td>
</tr>
<tr>
<td>Both - 43%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Do you prefer to have healthcare volunteers provide training or treatment?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both - 88%</td>
</tr>
<tr>
<td>Treatment - 2%</td>
</tr>
<tr>
<td>Training - 10%</td>
</tr>
</tbody>
</table>

*Source: UCLA Center for International Medicine, 2008 NGO Partner Program Survey*

The use of international healthcare volunteers to mitigate the shortage of global healthcare workers is supported by research that shows high levels
of interest amongst United States-based (US) healthcare workers to serve the international community. Based on this survey of US-based healthcare providers, it is evident that an opportunity exists to leverage this massive pool of talent and expertise.

Recent Case Reports

In coordination with the UCLA CIM, two UCLA emergency medicine residents traveled to Tanzania on volunteer medical rotations. Dr. Danielle Schindler spent three weeks volunteering her expertise at the Sumbawanga Regional Hospital in Tanzania, which she calls “one of the most rewarding professional experiences of [her] life.” Dr. Schindler delivered 50 pounds of medical materials and antibiotics for distribution to the hospital.

While at the hospital, she assisted physicians in treating the overwhelming patient load and trained them in the use of the newly delivered antibiotics. “As a doctor you get into habits, and with so many patients there becomes little time to read about unfamiliar drugs, so you really just end up prescribing what you know best. I think the doctors found it helpful that I could provide some background on specific antibiotics and teach them about the best cases to prescribe those particular drugs,” Schindler said. She was also able to conduct an assessment of needed supplies and reported back to a US-based NGO that supports the hospital with information regarding necessary items the hospital could begin using immediately.

In a similar trip, Dr. Reza Danesh, a fourth-year emergency medicine resident from UCLA, spent three weeks acting as a consultant at the Mawenzi Hospital in northern Tanzania. His experiences were similar to Dr. Schindler’s, and he called the hospital “extremely overwhelmed and in need of additional training and resources.” While volunteering at the hospital, a patient presented who had been struck by a bus. He had traveled over an hour and a half by taxi to the hospital and upon arrival the staff was unable to treat him due to lack of training and equipment. The patient required an immediate referral to the main regional hospital, which was an additional forty-five minutes away. Dr.
Danesh said, “In the United States, this gentleman may have had a chance to pull through his injuries. However, in Tanzania the large distances between health facilities and the lack of proper training in trauma services really makes it difficult. Even after being transferred to the regional hospital, they only had one anesthesiologist who was trained to intubate. In addition, I found it troubling that I had to retrain doctors on the proper way to perform CPR in the middle of a case.” Following the incident at the hospital, Dr. Danesh performed a lecture for the Mawenzi Hospital staff on the fundamentals of trauma care hoping to improve their skills in any way possible.

Former UCLA emergency medicine resident, Arthur Sorrell, has also had numerous volunteer experiences overseas. In 2002, Dr. Sorrell was participating in a UCLA CIM exchange program at the Bali International Medical Centre at the time of the Bali bombings. He was able to lend his expertise in trauma and triage to the clinic staff. He said, “I had only been in country for two days when the bombings occurred. The seven-bed clinic immediately had hundreds of patients as it was the closest medical facility to the actual bombing location. I helped devise a triage system for the staff to implement as most had never treated mass casualty or burn victims.” Following the bombings, Dr. Sorrell spent the next few weeks leading trauma management seminars for the staff. “They were all incredibly receptive, with a lot of questions and a lot of desire to fill in the gaps that they perceived in their response to the bombings. The event was a horrific experience to learn from, but I think it was helpful to be able to immediately implement follow-up seminars on trauma while it was still fresh in their minds.”

In addition, Dr. Sorrell also deployed to Indonesia following the 2004 tsunami, arriving seven days after the initial event. He described his tsunami relief experience much more as “a public health enterprise.” He said, “Unfortunately, in the tsunami you were either killed or you survived. There was very little in between. The injuries were not as severe as my experiences in Bali. What happened was an outbreak of disease because of collapse of the health system and health services.” Orthopedic operations and infection control were the most prevalent needs. In addition, people who were in need of chronic disease management were seeking care from volunteers as they found their health facilities washed away and many of their local health staff killed.

This health volunteer exchange process is mutually beneficial. Local healthcare capacity is increased through volunteerism and the perspective and added experience benefits United States-trained healthcare providers. Eric Savitsky, Executive Director of the UCLA Center for International Medicine and
Director of EMC Trauma Services and Education at UCLA, recently said, “International medical volunteerism is an important part of the education process for United States-trained healthcare providers. Our residents return more mature, insightful, and richer from the experience. The volunteers and host communities benefit from many mutual lessons learned that often transcend beyond medicine and include improved cross-cultural understanding and global awareness.”

**Current Channels and Mechanisms for Health Volunteerism**

Most organizations that specialize in relief and development and emergency medical response are dependent on medical volunteers to staff their programs. A review of the current channels and mechanisms for international volunteerism, have identified significant shortcomings. Currently, international health volunteers often must volunteer for extended periods of times (e.g., six-month commitments), engage in development-oriented activities that don’t involve actual patient care, work in dangerous conflict zones, or have to expend significant time and resources self-coordinating their international healthcare volunteer experience.

There are three commonly utilized pathways for international health volunteerism. A number of non-profit organizations allow “direct clinical care” opportunities for healthcare providers. Such organizations include Doctors Without Borders, Operation Smile and International Relief Teams. The mission of these organizations is primarily to send healthcare volunteers overseas to train doctors or treat patients. While many of these organizations are widely recognized and respected for their work, these programs often pose significant logistical difficulties for prospective volunteers. Many organizations demand lengthy dates of services, (e.g., six-month minimum commitment for Doctors without Borders). The commitment requirements often eliminate numerous qualified and capable volunteers who are in full-time practice, have families, or who simply cannot afford a trip of that length.

Another segment of non-profit organizations are focused more on “direct relief and development” opportunities. Such organizations combine volunteering with development work and provide variable degrees of clinical care. Organizations using this approach include the International Medical Corps and Project Hope. These organizations tend to offer some opportunities for healthcare workers on a regular basis coupled with rapid surges of volunteer opportunities in response to disasters. These organizations are more focused on development activity and often work in dangerous, conflict afflicted countries.
A third channel for healthcare providers to work abroad is by identifying volunteer opportunities through online health volunteer databases. Organizations hosting such databases generally facilitate volunteering and provide informational resources but do not coordinate trips, administration, or logistics. Health Volunteers Overseas and Rotary International are examples of organizations hosting volunteer databases. While many physicians and nurses express interest in volunteering, one of the main hindrances to having a trip come to fruition is the lack of logistical and administrative support. Many interested volunteers try to coordinate trips on their own, conducting web searches for opportunities, reaching out to organizations, and facilitating travel arrangements. These coordination efforts are often lengthy and time-consuming.

In summary, current pathways that enable interested medical care providers to engage in international health volunteerism are suboptimal. A key determinant to future success is the ability to coordinate field programs with local organizations and ongoing logistical support for volunteers.
REFERENCES


7 Ibid. Pg. 82.

8 Ibid. Pg. 78.

9 Ibid. Pg. 78.

10 Ibid. Pg. 76.


The UCLA Center for International Medicine (CIM) is dedicated to improving global health through education, training, and technology. Founded in 2002 by Dr. Eric Savitsky, a clinical professor of emergency medicine, the CIM is a non-profit organization that serves as a valued partner to organizations committed to advancing international health by providing customized training materials, health education and medical training, and consultation on international health program development. As part of the University of California system, the CIM enjoys ready access to an extended community of internationally recognized healthcare experts.

Addressing the global shortage of trained healthcare workers is an area of high importance to the CIM. Over the past six years, CIM programs have been used to educate and train thousands of healthcare providers worldwide on a variety of subject matter through ongoing partnerships with private volunteer organizations, international institutions, and private and federal agencies. The CIM also conducts ongoing healthcare provider exchange programs, sending physicians and senior level medical residents overseas with the goal of improving medical services through partnerships with local clinics and other medical care facilities.