



Virginia Hospital Center
MEDICAL BRIGADE

Virginia Hospital Center Medical Brigade STRATEGIC PROGRAM PLAN

February 15, 2008

TABLE OF CONTENTS

Executive Summary	1
1. Background	2
1.1 Mission Statement	2
1.2 Vision Statement	2
1.3 History of the Brigade	2
2. Project Capabilities and Services	5
2.1 Summary of Services Provided	5
2.2 Mission Trips	5
Mission Trip Goals	6
Mission Trip Objectives	8
2.3 Remote Village Project	9
Remote Village Project Goals	10
Remote Village Project Objectives	11
2.4 Capabilities	12
Measuring Criteria: Results and Outputs	12
3. Market Research and Analysis	16
3.1 Documented Need for Services	16
3.2 Contemporary Outreach	18
4. Next Steps	19

Executive Summary

The Virginia Hospital Center (VHC) Medical Brigade is a 501(c)3, non-profit organization that sponsors annual and ongoing humanitarian healthcare mission trips to Honduras, one of the poorest countries in the Americas. The VHC Medical Brigade (the Brigade) believes that all people deserve access to high-quality healthcare. In Honduras, they combine high-impact interventions with education and reproducible models of sustainable healthcare, including capacity building public health measures in underserved communities. Founded in 1998 in response to the devastation caused by Hurricane Mitch, the VHC Medical Brigade has since benefited over 42,500 Honduran citizens and millions of medical supplies have been donated in the process. In 2007 alone, the VHC Medical Brigade served 7,611 patients, performing 89 surgical operations, prescribing and fitting over 2,200 pairs of eyeglasses, and donating over \$600,000 in medical supplies in the process. The VHC Medical Brigade relies almost entirely on volunteer donations to continue day-to-day operations. Teams typically consisting of 60 -70 physicians, surgeons, nurses, and other non-medical support personnel, primarily from Northern Virginia, donate one week of their vacation time and health and medical expertise. All team members cover their own travel-related expenses.

In addition to the one-week high impact efforts, the VHC Medical Brigade also has developed and implemented a model of sustainable healthcare called the Remote Village Project. Beginning in 2006, VHC Medical Brigade Volunteers with the Remote Village Project have provided didactic classroom instruction and clinical training to community leaders of two separate remote villages. During the first year of operations of these clinics, these Community Health Workers handles over 2,000 patient visits. Together with Engineers without Borders, Agua Para el Pueblo, and the Peace Corps, the VHC Medical Brigade is designing and constructing potable water, sanitation, and public health systems in support of the Remote Village Project's focus on sustainability in these villages. These projects will bolster the Brigade's current efforts, adding to the high impact humanitarian healthcare mission trip initiatives and improving the overall quality of life for more than 2,100 people living in the two remote communities chosen to pilot the program.

Volunteers from the Brigade, local Lions Club, and other Honduran non-governmental organizations are working together to train local leaders as Community Health Workers, and work hand-in-hand with community members to develop clean, potable water systems. Empowering local community members as community health workers will enable access and treatment for basic illnesses in the community, eliminating the long travel distances often required to receive even the most basic of healthcare. Clean water is a foundation for all healthcare and treatment, and the provision of clean water will eliminate many diarrheal diseases and improve the overall quality of life for these people.

The VHC Medical Brigade operates out of its' headquarters at the Virginia Hospital Center in Arlington, Virginia. Hundreds of volunteers are recruited each year, and contribute thousands of volunteer hours to the organization of Brigade activities. The Brigade is proactive in working through its partnerships in targeting financial assistance opportunities to fulfill its mission and vision.

This program plan is meant to be a roadmap, explaining the Brigade's history and ideas for potential future growth. The Brigade's projects and internal administration are described in detail, as well methods for building and assessing capability and measurable outputs. Finally,

this document is meant to serve as a key source document for applications for financial assistance.

1. Background

1.1 MISSION STATEMENT

The Virginia Hospital Center Medical Brigade believes that all people deserve access to quality healthcare. In Honduras, we increase access through high-impact interventions, education, and capacity building programs in remote villages. In this way, we deliver medical services to thousands of people annually, and we initiate and build sustainable public health measures that provide ongoing healthcare in impoverished communities.

1.2 VISION STATEMENT

We meet the needs of underserved communities with ever-expanding, comprehensive, humanitarian healthcare interventions. We complement this aspect of our vision by empowering remote villages through community health worker training, health education, and the provision of clean water and sanitation systems. We envision a model where community health workers cooperate with local healthcare structures and empower their communities through public health education. We see our role as facilitators and supporters in developing sustainable independent community healthcare systems that can be replicated in underserved communities elsewhere.

1.3 HISTORY OF THE BRIGADE

The Virginia Hospital Center Medical Brigade was founded by Dr. Barry Byer in 1998 shortly after Hurricane Mitch, the fourth most intense Atlantic hurricane ever recorded at that time, hit Honduras. Though downgraded in the Caribbean, Hurricane Mitch dropped more than 35 inches of rain, hovering over Honduras flooding more than 83,000 homes, devastating agriculture, destroying nearly all of the country's bridges and much of the infrastructure, and killing nearly 6,000 people. An additional 1.5 million people were left homeless. The devastation was horrific and the country was left without many key resources including essential medical care.

Meanwhile, Dr. Byer had been working in Virginia since the early 1990s to gather needed medical supplies that would be sent to post-USSR Russia. His efforts evolved into the founding of CrossLink International (crosslinkinternational.net), providing supplies, logistics and administration for containers to be shipped abroad for medical missions. It was this organization and his own personal experience participating in medical missions that provided the inspiration for Dr. Byer to recruit other volunteers and start work in Honduras.

With colleagues at Arlington Hospital, as Virginia Hospital Center was known then, Dr. Byer assembled a team of 39 member volunteers, all paying their own way, and many using vacation time. Working through the Honduran Embassy in Washington, the Brigade team established initial contacts in the country, and a missionary group in the remote town of Sula offered its hospital as the first site for the Brigade in 1999.

Despite initial difficulties with the arrival of medications and luggage during the first Brigade trip, the 2000 Brigade team proved even stronger and more volunteers attended. The Honduran Embassy in Washington arranged for the Brigade to work out of the Honduran Military Hospital and treat patients in nearby communities surrounding the capital city of Tegucigalpa. Honduras' First Lady encouraged the Brigade and supported its' efforts. The Brigade was unable to travel

in 2001 due to the events of September 11th, but efforts continued each year thereafter and by 2004, the fifth Brigade trip, volunteers were brought to a Red Cross facility in LaCeiba.

In 2005, the Brigade and Comayagua Lions Club teamed their strengths and combined expertise to serve the regions around the colonial capital of Comayagua. This relationship has continued ever since. The Lions Club provides large building and warehouse space within walking distance of the public hospital, where Brigade members perform much needed surgeries. Since the first Lions Club-supported trip in 2005, more than 1,300 boxes of medications, medical equipment and supplies, eyeglasses, physical therapy equipment, clothing, and other humanitarian goods have been assembled, packed and shipped to Honduras.

During the seventh trip in November of 2006, a group of 77 doctors, surgeons, nurses and non-medical support personnel teamed up to treat 6,885 underserved Honduran citizens in Comayagua and four other poverty-stricken, outlying rural villages. Medical services provided included adult and pediatric primary care, ophthalmology, physical therapy, audiology, and 109 surgical operations. Refurbished eyeglasses were fitted to approximately 2,400 adults and children following on-site auto-refractor examinations. Countless sets of crutches, walkers, and wheelchairs were provided to the physically impaired. A certified audiologist, who represented a new field of care for the Brigade, fitted and tuned hearing aids for 35 patients, including a 12 year- old girl who was able to hear for the first time in her life. Surgical operations ranged from cesarean sections and hysterectomies, to laparoscopic gall bladder procedures, numerous corrective strabismus surgeries for crossed eyes, ears, nose, and throat (ENT) procedures, and plastic surgery. In one of the plastic surgery cases, surgeons performed a four and a half hour procedure to help a 16 month-old girl who had been tragically burned when wind blew a candle into her crib. Medications, supplies, and equipment valued at over \$600,000, including a fully-equipped and refurbished ambulance, all acquired with the financial support of over 150 individuals and corporate entities, were donated along with these efforts.

The Brigade also expanded its outreach mission in November 2006 by seeking and receiving full support from the Honduran Government for its Remote Village Project. The Remote Village Project is comprised of two major capacity-building components: 1) an initiative to train local leaders as Community Health Workers, and 2) a clean water, sanitation, and public health initiative to bring perhaps the most effective preventive medicines of all to the communities. In expanding its mission beyond the annual humanitarian healthcare trips, the Medical Brigade recognized that, while their services during the one week Brigade were essential, they simply did not address the health care needs of the community the other 51 weeks of the year.

Sustainability of the initiative has been improved by providing didactic classroom instruction and clinical training to six well-respected rural community leaders from the two remote villages of Valle Bonito and San Antonio de la Libertad to function as certified Community Health Workers (CHWs). These CHWs provide year-round counseling on community health improvements and preventive care. Additionally, with the support and supervision of the VHC Medical Brigade and the Lions Club of Comayagua, the CHWs diagnose and treat a pre-set, limited number of medical conditions common to central Honduras. The Brigade provides all necessary equipment and medications to appropriately empower the CHWs in both locations, and visits each community on a quarterly basis to ensure continuity of the program.

The Brigade also recognized the importance of clean water and sanitation, the most basic elements of public health. Without clean, potable water and proper sanitation facilities, illnesses in the community would continue, and many infants, children and adults would continue to suffer needlessly from chronic diarrhea and other ailments. The Brigade, together with volunteers from Engineers without Borders, Agua Para el Pueblo, and the Peace Corps, is designing and constructing potable water systems in each of the two villages. At each site, these partner have performed assessments on the feasibility of constructing a water system, measurements on water quality, performed land surveys, and conducted in-depth studies of existing systems to tailor the design of new water and sanitation systems for each of the two communities.

The American Red Cross has recognized the Brigade as the largest coordinated effort from a single hospital serving in Honduras. In addition, Dr. Byer, the founder of the Brigade has been recognized for his service to the vulnerable populations of Honduras several times. In November of 2006, Dr. Byer received the Medical Society of Virginia Foundation's Salute to Service award for "Service to the International Community" for founding and leading the Virginia Hospital Center Medical Brigade. In March of 2005, he received the Chamber's James Elkin Award for international humanitarian service. He has been honored by the Greater Falls Church Chamber of Commerce on two occasions. In 2001, Dr. Byer received the Carroll V. Shreve Award for meritorious community service and humanitarian work and in 2000, he received the Falls Church City Commendation for Humanitarian Efforts. Dr. Byer also received Acacia Federal Savings Bank's "Nice Guy" Award in 2005. Dr. Byer is regularly mentioned in both the *Washingtonian Magazine's* "Top Doctor" issue and *Washington Consumer Checklist's* "Outstanding Physician" issue.

2. Project Capabilities and Services

2.1 SUMMARY OF SERVICES PROVIDED

The Virginia Hospital Center Medical Brigade believes that all people deserve access to high quality healthcare. In Honduras, they combine annual humanitarian healthcare missions (Mission Trips) with education and reproducible models of sustainable healthcare, including capacity building public health measures, in underserved communities. Teams typically consisting of 60 -70 physicians, surgeons, nurses, and other non-medical support personnel, primarily from Northern Virginia, donate one week of their vacation time and health and medical expertise. All team members cover their own travel-related expenses. During the one-week trips, physicians, nurses, public health professionals and other medically trained personnel provide essential healthcare services including primary care, pediatrics, physical therapy, optometry, audiology, basic surgery, and some gynecological care.

In addition to the Mission Trips, the VHC Medical Brigade has developed and implemented a model of sustainable healthcare called the Remote Village Project. The Remote Village Project will bolster the Brigade's current efforts, improving the sustainability and impact of the current short term initiatives and the overall quality of life for more than 2,100 people living in the two remote communities chosen to pilot the program. Volunteers from the Brigade train local leaders as Community Health Workers, and volunteers from the Brigade, local Lions Club, Honduran non-governmental organizations such as Agua Para el Pueblo, and the Peace Corp work hand-in-hand with community members to develop clean, potable water, sanitation, and public health systems. Empowering local community members as Community Health Workers will enable access and treatment for basic illnesses in the community, eliminating the long travel distances often required to receive even the most basic of healthcare. Clean water is a foundation for all healthcare and treatment, and the provision of clean water will eliminate many diarrheal diseases and improve the overall quality of life for these people.

2.2 MISSION TRIPS

Many people living in Honduras lack access to even the most basic of medical services. For many, the nearest clinic can be more than 20 kilometers away. Patients often lack transportation, requiring them to walk for many miles over treacherous terrain to reach even the most basic health service. The lack of access, coupled with the extreme poverty levels in the remote areas, creates a tremendous barrier for healthcare services.

The VHC Medical Brigade's Mission Trips bring much needed medical services to remote villages in and around Comayagua. The 60-70 trained healthcare personnel offer basic primary care, physical therapy, optometry, gynecological, pediatric, and surgical care. Without the Brigade's help and care, many of these patients would have to travel several kilometers over many days to reach the nearest healthcare facility or hospital. The expenses in transportation alone, coupled with the cost of care could easily surpass the monthly income of a family of four, and would make providing food for their families very difficult. The Brigade's efforts to help address these urgent health care needs and the services they provide often save the lives of the most vulnerable who might not otherwise seek healthcare. Descriptions of Mission Trip teams, services locations, and utilized capabilities is as follows:

Team	Location of Services	Utilized Capabilities	Detailed Services
Audiology	Fundacion CasAyuda, Comayagua	Health Augmentation	A team of two audiologists performs hearing assessments and fits eligible Hondurans with hearing aids (eligible meaning that they will benefit from hearing aids), on a daily basis. If the patient cannot benefit from a hearing aid, the audiologists recommend – particularly for children – that they learn sign language and enroll in a program or school that will support their disability, such as Fundacion CasAyuda.
Surgery	Hospital Regional Santa Teresa, Comayagua	Health Augmentation	<p>The surgery team is based out of this hospital for the entire week. The first two days are dedicated to screening and prioritizing patients to be operated on. There is also an advance team that arrives in Honduras about 3 days ahead of the rest of the Brigade to begin organizing and setting up equipment in the hospital.</p> <p>Note: Surgeons perform pre- and post-operation visits with patients to ensure that everything is okay, and to provide recommendations for post-operative treatment.</p>
Core Mission	In 2007, visited: Lamani, Villa de San Antonio, La Libertad, San Jeronimo, and Comayagua	Health Augmentation	The mission field teams provide services in eye care, adult primary care, pediatric care, adult and pediatric physical therapy, and dispense prescriptions onsite. The warehouse team sends a truck with equipment to the site in the morning, then reloads the truck at the end of the day with the remaining equipment and medical supplies.
Warehouse	Lions Club of Comayagua	Medical/ Pharmaceutical Supplies, Equipment Donation/ Management	<p>The warehouse team sends a truck with equipment to the site in the morning, then reloads the truck at the end of the day with the remaining equipment and medical supplies. Another member travels between the warehouse and the sites in Comayagua (CasAyuda and Hospital Santa Teresa) to bring supplies back and forth.</p> <p>The truck restocks every night for the next day's trip. A computer inventory of all the supplies and equipment is updated and maintained, and on the last day the entire warehouse team goes through its entire physical inventory in the warehouse to identify what needs replenishment, what needs to be disposed of (expired medicines, etc.), and what can be donated to local health institutions. This is also recorded and maintained in the computer inventory system.</p>

Mission Trip Goals

- 1) Encourage and foster future medical mission staff (i.e. doctors, nurses, surgeons) and expand Brigade opportunities for American doctors in training
 - a. Provide marketing materials (handouts, posters, videos, etc.)
 - b. Increase Brigade outreach and education
 - c. Obtain dedicated administrative staff

- 2) Continue to increase the availability of the Brigades Mission Trip services by replicating the model in new villages with each trip, documenting the model and sharing the model with other Missions that would like to replicate
 - a. Form an administrative structure to assist with planning and coordination efforts
 - b. Recruit a dedicated administrative staff whose duties would include: organizing volunteers, business management / administration coordination, general coordination, correspondence, and additional duties as they are identified and defined
 - c. Develop a process for screening and pre-screening patients, advance teams, scheduling patients and for surgical advance teams
 - d. Perform annual analysis of patient activity data
- 3) Consider organizing multiple Brigade teams and multiple Brigade trips per year
 - a. Hold Brigade sessions for all trip members and provide marketing materials for them to distribute
 - b. Increase Brigade outreach and education
 - c. Increase the standardization of many aspects of the Brigade process as identified and defined
 - d. Recruit and educate others to be Brigade leaders
 - e. Obtain contact information (if available) from surgical patients treated while on medical service trips
 - f. Develop a handout or flyer to hand out to patients seen to inform them of next Brigade trip time and place so they know exactly when and where the next medical station will be
 - g. Track surgical patients seen and forecast what supplies will be needed for follow-up care
 - h. Develop a system for referrals from field clinic to hospital for surgeries
 - i. Create a system to allocate time for emergency surgeries that have not been scheduled prior
 - j. Enhance scheduling by arranging time slots for transportation services between the village or field clinic and hospital
- 4) Refine the communication systems and processes between field clinic and hospital
- 5) Expand the surgical services that are offered to the hospital
 - a. Document what surgeries are performed and how many
 - b. Document surgeries requested in order to understand the kinds of resources (surgeons and surgical equipment) that might be needed for upcoming trips
 - c. Fill in slots on the surgical team based on the forecast for resources needed
 - d. Charge advance team with pre-screening patients and recording services needed

- 6) Create a communications and scheduling system with partners in Honduras
 - a. Map out the transnational system currently being used for communicating and scheduling with Honduran partners (Lions Club, Escuela Bilingual Honduras, Red Cross, etc.) to identify any gaps or areas for improvement
 - b. Based on gap analysis in 6a, develop an improved transnational system to communicate and schedule with Honduran partners to maximize the efficiency of services

Mission Trip Objectives

- 1) Perform regular data analysis on all aspects of Medical Brigade mission trip
 - a. Identify and develop performance measures for each Brigade capability
 - b. Set up database to store data collected
 - c. Create performance metrics and measures to gauge how well the Brigade is performing and in which areas
 - d. Designate a Brigade member to update and analyze information
- 2) Diagnose tuberculosis and encourage patients to seek treatment
 - a. Train Brigade doctors and nurses to identify telltale and covert signs of tuberculosis
 - b. Train Community Health Workers so that they are able to diagnose and educate their communities on tuberculosis and how the disease is transferred
 - c. Track the number of tuberculosis cases that are encountered on each trip
 - d. Analyze data collected by Community Health Workers to assess the effectiveness of training and education
- 3) Encourage basic hygiene and sanitation practices
 - a. Field clinic doctors and nurses should educate patients preventative health practices for common illnesses
 - b. Develop a process for doctors and nurses to provide education based on 3a
 - c. Develop a list of common illnesses and easy ways to prevent them through basic hygiene and sanitation
 - d. Distribute the list developed in 3c to patients
- 4) Identify current and future medical services needed
 - a. Analyze trip data to match needed services
 - b. Recruit physicians, surgeons and specialists depending according to identified needs
 - c. Send an advance team to Honduras to screen patients and to identify services supplies that will be needed on the next Brigade trip
 - d. Improve records and data retention

2.3 REMOTE VILLAGE PROJECT

The VHC Medical Brigade recognized that, while their services during the one week mission trip were essential, they simply did not address the health care needs of the community the other 51 weeks of the year. The Brigade expanded its outreach mission in November 2006 by seeking and receiving full support from the Honduran Government for its Remote Village Project.

The Remote Village Project is comprised of two major components:

1. Capacity-building initiative to train local leaders as Community Health Workers
2. Clean water, sanitation, and public health systems to bring the most effective preventive health measures to the communities

Sustainability of the Brigade's mission has been improved by providing didactic classroom instruction and clinical training to six well-respected rural community leaders from the two remote villages of Valle Bonito and San Antonio de la Libertad to function as certified Community Health Workers (CHWs). These CHWs provide year-round counseling on community health improvements and preventive care, focusing on issues such as access to and utilization of tuberculosis treatments, clean water, proper nutrition, hygiene and proper body mechanics for lifting. Additionally, with the support and supervision of the VHC Medical Brigade and the Lions Club of Comayagua, the CHWs diagnose and treat a pre-set, limited number of medical conditions common to central Honduras, including infant diarrhea, ear infections, bronchitis, simple skin disorders, and intestinal parasites. The Brigade provides all necessary equipment and medications to appropriately empower the CHWs in both locations, and visits each community on a quarterly basis to assess diagnoses made and treated, track the amount of medicine dispensed, answer any questions or issues the CHWs may have, and gauge whether the supplies are meeting the actual needs of the population.

The Brigade also recognized the importance of clean water and sanitation, the most basic elements of public health. Without clean, potable water and proper sanitation facilities, illnesses in the community would continue, and many infants, children and adults would continue to suffer needlessly from chronic diarrhea and other ailments. The Brigade, together with volunteers from Engineers without Borders, Agua Para el Pueblo, and the Peace Corps, is designing and constructing potable water systems in each of the two villages. During the initial site assessment trip in February 2007, the Brigade Members and Engineers without Borders assessed the feasibility of constructing a water system and also measured water quality at each of the proposed sites. During the second trip, volunteers from the Brigade and Engineers without Borders performed land surveys and conducted in-depth studies of existing systems. This information is being used in the design of new water and sanitation systems for each of the two communities.

Descriptions of the Remote Village Project teams, services locations, and utilized capabilities follow:

Team	Location of Services	Utilized Capabilities	Detailed Services
Community Health Workers (CHW)	Onsite at San Antonio de la Libertad and Valle Bonito, and during annual mission trips	Training Materials (textbooks), Health Instruction, Equipment Donation, Medical Pharmaceutical Supplies	<p>The Brigade's CHW team travels to the villages on a quarterly basis to assess CHW progress and to review patient cards.</p> <p>During the one-week mission trip the Brigade provides classroom and hands-on training sessions, including shadowing doctors as they diagnose patients. CHWs accompany Brigade doctors at the mission sites during the annual mission trip. Certified CHWs in the remote villages of Valle Bonito and San Antonio de la Libertad provide year round counseling on community health improvements and preventive care. CHWs also diagnose and treat a limited number of medical conditions common to central Honduras, including infant diarrhea, ear infections, bronchitis, simple skin disorders, and intestinal parasites.</p> <p>The Medical Brigade has provided all necessary equipment and medications to appropriately empower both locations.</p>
Water, Sanitation, and Public Health	Valle Bonito and San Antonio de la Libertad	Project Management, Skilled and Unskilled Labor, Public Health Instruction and Training, Technical Operation and Maintenance Training, Business Administration Training	<p>Remote Village Project, Engineers Without Borders, Lions Club of Comayagua, and Peace Corps volunteers travel regularly to the two villages of Valle Bonito and San Antonio de la Libertad to continue assessment and planning of the water and sanitation systems that are being built.</p> <p>The Remote Village project seeks to address the root cause of the majority of health conditions in the villages, in addition to the symptoms, by developing gravity-fed potable water and sanitation systems for the villages. In this regard, the Medical Brigade and the Lions have joined forces with Engineers Without Borders, Agua Para el Pueblo, and Peace Corps, to partner with and to advocate for these two villages in these development efforts. These infrastructure projects will be introduced to the communities along with specifically tailored public health intervention plans – plans that will raise the awareness of the link between proper hygiene and disease prevention – plans designed to educate and encourage new healthy behaviors surrounding personal hygiene, food preparation, and water storage. Detailed patient records from the CHWs' first year of service to the communities will serve as benchmarks against which progress, in terms of future experience data (data developed after clean water and proper sanitation services are provided), can be measured.</p>

Remote Village Project Goals

- 1) Provide didactic classroom and clinical training to Community Health Workers (CHWs)
 - a. Train CHWs in prevention and treatment of six basic diseases

- b. Train CHWs in basic public health measures, including hand washing, basic hygiene, safe water storage, reduction of mosquito friendly environments for prevention of dengue fever, etc.
 - c. Empower CHWs to train other community leaders and develop a formalized training of trainers program
 - d. Improve CHWs knowledge of appropriate use of antibiotics and other medications to reduce the probability that community members will develop drug resistant infections
- 2) Improve health outcomes in the remote villages with potable water and sanitation systems
- a. Empower community members to form water boards, with bylaws, tariff collections, and additional processes as necessary.
 - b. Work with Engineers without Borders, Agua Para el Pueblo, and the Peace Corps in the design and construction of the water and sanitation systems
 - c. Develop and strengthen links with local government and non-government organizations to ensure ongoing maintenance of systems and provide public health and technical training for water board members
- 3) Encourage collaboration with government health systems
- a. Encourage patients to use government health systems for follow-up care
 - b. Collaborate with government health systems and provide them with lists of patients seen and what services will be needed for follow-up care
 - c. Collaborate with the government health systems to efficiently set up health operations in villages
- 4) Establish a program with Brigade volunteers to train Honduran medical caregivers
- a. Send volunteers to train Honduran surgical staff and nurses
 - b. Provide health education during daily clinics on mission trips
 - c. Train and empower local health educators to education their communities about easily preventable diseases

Remote Village Project Objectives

- 1) Analyze programmatic data outcomes
 - a. Example: In the Water & Sanitation Projects, reduce the incidence of water borne illnesses by x%
 - b. Example: Increase the number of Remote Village Project locations and CHWs in 2008 by “x” amount
 - c. Example: Increase the amount of patients seen by CHWs
 - d. Train CHWs to develop and maintain more comprehensive records
- 2) Bring potable water into remote villages
 - a. Continue progress in San Antonio de la Libertad and Valle Bonito

- b. Expand potable water capabilities into other Remote Village Project communities in need of clean water
 - c. Facilitate the development of a Honduran water team that can continue the potable water project in each village
 - d. Create new partnerships with Honduran engineers (specifically, environmental engineers) and construction companies that can develop potable water solutions for other villages
 - e. Empower community Water Board leaders to educate their communities about potable water methods
- 3) Encourage basic hygiene and sanitation practices
- a. Educate community leaders on how to gain a better understanding of the current level of hygiene and sanitation practices. Current example: Engineers Without Borders survey about hand washing and habits related to water and hygiene
 - b. Construct a strategy to get “x” amount of people to improve their hygiene sanitation
 - c. Track certain disease occurrences from year to year and their sanitation practices to gauge the success of the strategy

2.4 CAPABILITIES

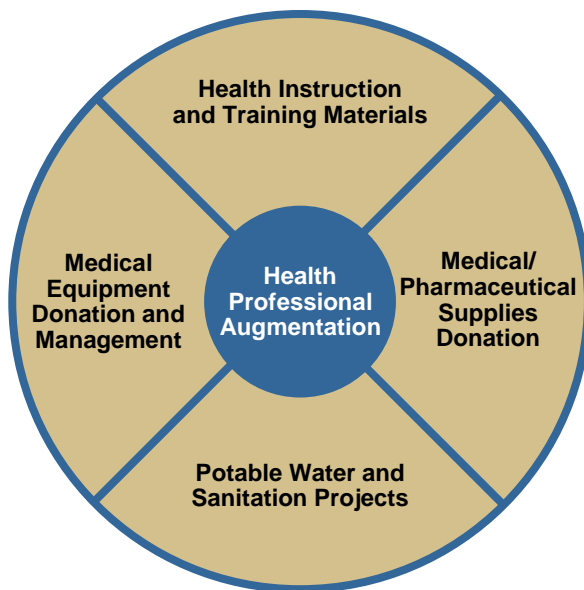
For the purposes of developing and implementing its projects, the Brigade focuses on a capability driven delivery approach for its services. Capabilities are to be quantified, measured, and amended based on need or environment. They are also to be developed across projects, with output measured against strategic and or project goals and objectives. Figure 1 demonstrates the Brigade’s capabilities.

The Brigade’s capability categories fulfill the critical needs of the underserved in Honduras. These particular categories were developed in order to provide basic improved health care to Honduran rural communities, while also intending to build empowerment and sustainability of health practices. It is important to note that Brigade capabilities are not meant to be static; they may change over time based on revision to mission, vision, goals, and objectives of the organization.

Measuring Criteria: Results and Outputs

The Brigade designs and measures the effectiveness of its projects based on capabilities and strives to consistently increase performance through refining and revising project activities in order to increase operational effectiveness. The measuring criteria provided below is based on

Figure 1. Brigade Capabilities



capability and associated outputs. These performance metrics can be easily mapped back to goals and objectives of the Brigade and its projects.

■ **Capability – Health Professional Augmentation**

Expand depth of health services, maximize case load, and use partners strategically

Results:

- Provide direct care to Honduran population

- Outputs:
- Treated 7,611 total patients on 2007 Mission Trip
 - Performed 89 surgeries
 - Prescribed and fit over 2,278 pairs of eyeglasses
 - Assisted 357 patients with physical therapy needed
 - Provided services to 225 audiology patients
 - Provided services to 257 physical therapy patients
 - Dispensed 54 hearing aids
 -

- Build volunteer base with varied amount of experience

- Outputs:
- Included 77 volunteers with experience in the primary care and physicians, surgeons, nurse practitioners, physician assistants, nurses, physical therapists, ophthalmologist/opticians, audiologist, and non medical volunteers
 -

Possible Ideas to Meet Capability:

- Conduct two different Mission Trips groups per year
- Conduct an advance mission trip to pre-screen potential patients, and possibly stagger surgeries
- Perform primary care follow-up visits by leveraging Remote Village Project, Community Health Workers, Lions Club, and other partnering organizations

■ **Capability – Health Instruction and Training Materials**

Build sustainable health practices through education and training utilizing new treatment algorithms and teaching tools

Results

- Produce and distribute training materials (video, PowerPoint, handouts, and posters) for health-related education

- Outputs:
- Produce training materials
 - Educate 6 local community health workers
 - Distributed training materials to individuals, non profit organizations, government organizations, etc.

- Identify and design tools and processes for pre-screening surgeries

- Outputs:
- Designed tools for aiding in health services
 - Designed tools will aide in screening, diagnosing and treating patients
- Provide training to well-respected rural community leaders and health professionals
- Outputs:
- Provided classroom instruction from Brigade volunteers for providing health services in Honduras
 - Provide instruction to Honduran doctors
 - Brigade bio-medical engineer to train people on equipment malfunctions and possibilities for repair
 -
 - Conduct meetings with Honduran government officials to educate them
 - Avert cases of diseases through education of Community Health Workers and establishment of clinics through the Remote Village Project

Possible Ideas to Meet Capability:

- Work with US Military and Honduran government to treat high blood pressure, hypertension, and diabetes
- Design a process and tool whereby local health providers can better screen patients for surgeries to help increase the number of surgeries performed during mission trips
- Design health material related to hand-washing, diaper-changing, tooth-brushing, and tuberculosis
- Replicate Remote Village Project model to a additional locations
- Design a Remote Village Project template for other local non-profit organizations to replicate
- Develop a new project whereby US based physicians (possibly leveraging resources from Georgetown) travel to Honduras and train health stakeholders (non profit organizations, hospitals, government, etc.) on techniques for building sustainable health systems, i.e. infrastructure for clinics and techniques for examining patients

■ **Capability – Medical Equipment Donation / Management**

Promote the distribution of unused medical equipment for the purpose of increasing quality health care

Results:

- Provide life-saving support to underserved communities through distribution of high quality, excess medical equipment

Outputs:

- Donate over \$600,00 of medical equipment

Possible Ideas to Meet Capability:

- Design new system of sharing equipment / materials with Brigade partners in Honduras, e.g., auto-refractors partnership with U.S. Military; and coordinate with Lions Club of Virginia to obtain eyeglasses

■ **Capability – Medical / Pharmaceutical Supplies**

Supplying clinics with essential medicines

Results:

- Provide health workers with medicine to improve the health of the underserved communities

- Outputs:
- Donate medical supplies
 - Other

Possible Ideas to Meet Capability:

- During quarterly Community Health Worker visits, ascertain the types of basic medical resources that are needed
- Other

■ **Capability – Potable Water Solution**

Alleviate water-borne illness in rural communities

Results:

- Provide clean water to rural communities

- Outputs:
- Designing water and sanitation systems in RVP communities
 - Test water sources to ascertain potential disease to population

Possible Ideas to Meet Capability:

- Provide educational materials on clean water habits to village populations
- Empower village water boards to test water sources, etc.

3. Market Research and Analysis

In the past 25 years, humanitarian organizations have made notable strides in providing for the basic health, nutrition, and sanitation needs of those living in developing nations. In addition, developments over the last 15 years have fueled standards-setting, research efforts, and literature publications within the international humanitarian assistance community. Increasingly, medical brigades are being viewed as short-term solutions to address healthcare needs in the most remote areas of these countries. Many thousands of volunteers travel to Central America, Asia, Africa, Eastern Europe and other areas of the world each year to bring free medical care; some travel solely to offer healthcare services while others bring along religious messages as well.

Although periodic visits can bring localized improvements, collecting longitudinal data for surveillance endeavors and the identification of at-risk communities may allow mission leaders to target interventions at the geographic regions most amenable to larger, integrated public health and rural infrastructure developments. Any such systematically-implemented capacity building, however, requires a long-term, collaborative approach to gradually integrate training efforts with knowledge creation and dissemination. Indeed, today's non-governmental organizations recognize the need to work closely with various military forces for their valuable knowledge bases, logistic capabilities, and human and physical resources. It is important, though, to pay attention to any existing differences in mission and culture between the groups.

3.1 DOCUMENTED NEED FOR SERVICES

The second poorest nation in the Western Hemisphere, Honduras has received hundreds of millions of dollars in financial relief since the turn of the century from international donors and institutions such as the World Bank and International Monetary Fund (IMF). Nevertheless, underemployment and unemployment rates are high, much of the population lives in poverty, and the income inequality gap remains wide. Literacy rates hover around 80 percent overall, influencing medical missions that emphasize community health education and local healthcare worker training. The Honduran Government provides for about half of the nation's inconsistent health care delivery; the private sector and Social Security Institute combine to cover another 20 to 25 percent, leaving the remaining persons without adequate access to health care services. Not surprisingly, marginalized urban and rural areas have the most difficulty accessing care.

The World Health Organization (WHO) estimates that in 2004 Honduras spent less than \$160 per capita, or just over 6 percent of its gross domestic product (GDP), on healthcare. For the same year, the United Nations Development Programme (UNDP) calculated the country's average yearly income to be under \$1,000 nationwide, with about two-thirds of the population living in poverty and nearly one-third unemployed. According to Unicef, approximately one-fifth of Hondurans live on \$1 a day or less, and UNDP has recognized that redirected public funding should target greater distribution efficiency in the areas of education, health and welfare.

According to the Central Intelligence Agency (CIA), Honduras' approximately 7.5 million people are comprised largely of youths, with a median age under 20 years old and almost 2 out of 5 persons under the age of 15; only 3.5 percent of residents are age 65 or older. In addition, the population of Honduras is growing at about 2.1 percent per year, adding over 155,000 annually to its rural and urban ranks—the latter expanding most noticeably. Despite a historical decrease

in poverty rates over the last 15 to 20 years, population increases have meant that the absolute number of poor citizens nevertheless rose. In addition, rural residents tend to live in inferior conditions, with a household poverty rate over 10 percent higher than that of their urban counterparts.

As noted, key problems facing Honduras involve its underlying income inequality and resultant poverty and underemployment, and thus much of modern development assistance revolves around broadening the country's export enterprises and raising levels educational and maternal and child health measures. There also is an identified need for increased access to medical care and health facilities; in fact, at the start of the century, WHO reported that there were fewer than 0.60 medical doctors per 1,000 people. Contributing to the problem of a scarce medical workforce, poor countries like Honduras and others in the Caribbean and Africa increasingly see medical personnel attracted abroad as a result of attractive career opportunities, political insecurity, and familial aspirations. In fact, up to one-fourth or more of physicians in wealthy, English-speaking countries hail from international medical schools. The implication for nations experiencing such emigration is that they must take proactive steps to train, retain, and sustain their healthcare workforces, one particular area where medical missions have stepped in to provide what assistance they can afford.

Select WHO Core Health Indicators, Honduras and USA, 2000
 (Density per 1,000 population)

Indicator	Honduras	USA
Physicians	0.57	2.56
Nurses	1.29	9.37
Dentists	0.21	1.63
Pharmacists	0.14	0.88

Source: www.who.int

With over half of the population living in rural areas, people often must walk or ride in the bed of a pick-up truck or other form of transportation—some even arrive by mule or donkey—for several hours to reach the closest medical clinic and obtain care. Even the most basic illnesses can become complicated in these remote areas due to the lack of available medical personnel and basic medical supplies. Surgery usually is available only in the larger cities, often a two to three hour trip each way. Patients awaiting general surgery frequently are subject to long waiting lists of two to three months, and often they lack the financial resources to pay for these procedures. The hospitals themselves sometimes do not have the appropriate capital resources—human and/or equipment—necessary to perform these surgeries when the time comes. Sanitation services and potable water coverage also are spotty and of poor quality, especially in remote locations, hampering preventative efforts aimed at addressing basic health and infectious disease concerns.

3.2 CONTEMPORARY OUTREACH

In Honduras, hundreds of Brigades operate each year, bringing free medical services to the poorest of the poor and helping to temporarily ease their protracted healthcare burdens. Most missions to Honduras focus on minimizing preventable morbidity and mortality and providing acute, high-impact medical relief through one or more week-long visits per year whereby they supply free dental, ophthalmologic, surgical, and family medical care. In addition, some organizations seek to effect longer-term change through establishing and equipping community-based clinics, training and educating local inhabitants in basic health care techniques, and embedding sustainable models of improved infrastructure and self-health strategies.

The services of the Virginia Hospital Center Medical Brigade grant the abjectly poor the opportunity to obtain quality medical care from trained, certified and licensed personnel. More than 70 healthcare professionals participate in the Brigade's trips each year to help ease—albeit temporarily—their tremendous healthcare burden and truly save lives by preventing and curing the most basic infections. The Brigade also helps to improve the quality of life tremendously by providing free eyeglasses and hearing aids to children and adults. The gift of sight and hearing enables these individuals to function as full members of the community, and for many this equals increased income and economic well-being for them and their families.

Honduras' remote areas face even larger healthcare obstacles. In Valle Bonito, one of two remote villages where the Brigade is working, the community is fortunate enough to have a government-sponsored clinic nearby. However, the clinic operates during a limited number of hours per week due to a lack of healthcare personnel and a shortage of standard medical supplies. San Antonio de la Libertad, on the other hand, does not have a medical clinic in the community, and the nearest clinic is a 2 to 3 hour walk depending on the weather and the condition of the road. Without the assistance of the Community Health Workers in these areas, patients would be forced to make the long trips and wait several hours for treatment. The community health workers are able to treat basic diseases, reducing the travel burden and great frustration with the local medical clinics, which often lack essential medications and supplies.

The Brookings Institute has published research-based “lessons learned” for international volunteer groups, many of which the Brigade has already adopted. First, business objectives should be identified early and agreed upon, followed by formal engagement with local communities of interest. Next, it is recommended to ensure alignment with the core competencies not only of volunteer personnel but also of any larger organization(s) under which operations take place. Actively seeking out appropriate partners—e.g., government agencies or individuals; non-governmental charities; and philanthropic medical, engineering, and other professional organizations—is crucial to obtaining and effectively mobilizing necessary resources, and assigning a team responsible for program management will add stability and organized decision-making. Finally, clearly communicating objectives and milestones helps to manage stakeholder expectations and outcomes assessment.

In addition to partnerships with organizations such as the Lions Clubs, medical brigades in Honduras may cooperate or partner with the country's Ministry of Health.

4. Next Steps

The Strategic Program Plan that Booz Allen has developed is a template from which the VHC Medical Brigade can expand. The content cited in this document is the result of a series of meetings with the VHC Medical Brigade, first hand experience during the November 2007 Mission Trip, and through independent research. Throughout this Phase 1 process, Booz Allen has worked to ascertain the Goals and Objectives which, in tandem with Market Research, are key to identifying how the Brigade can grow and expand its services and offerings. This document lays the foundation of what the Brigade is, from its Mission and Vision, to its past, present, and future capabilities. The Strategic Program Plan will be instrumental in ensuring that the goals and objectives of the Brigade can be successfully implemented and achieved. Booz Allen has created a Supplemental Workbook that focuses on the Brigade's organization, internal structure, and stakeholder capability, and is a logical starting point for Phase 2 of this engagement, which will begin in the Summer of 2008.