Lifesupporters Institute of Health Sciences

Scaling up Emergency Medical Training in India

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Business Plan
Lifesupporters Institute of Health Sciences (LIHS)
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ABBREVIATIONS

ACLS: Advanced Cardiac Life Support
AED: Automated External Defibrillator
AHA: American Heart Association
AYUSH: Ayurveda, Yoga, Unani, Siddha, Homeopathy
BLS: Basic Life Support
CPR: Cardiopulmonary resuscitation
EM: Emergency Medicine
EMT: Emergency Medical Training
EMS: Emergency Medical Services
FABLS: First Aid Basic Life Support
HS: Heartsaver
ITLS: International Trauma Life Support
LIHS: Lifesupporters Institute of Health Sciences
NGO: Non-Governmental Organization
NYPH: New York Presbyterian Hospital
PALS: Pediatric Advanced Life Support
PGDEMS: Post-Graduate Diploma in Emergency Medical Services

EXECUTIVE SUMMARY

Introduction

Lifesupporters Institute of Health Sciences (LIHS), a registered non-profit founded in 2005, provides emergency medical training services in Mumbai, India. LIHS serves as the emergency medical training arm of the ambulance company Dial 1298, offering courses to healthcare personnel and general citizens. The two organizations are closely aligned in their goal to improve emergency medical services across India. With recent successes in winning several government contracts, Dial 1298 is expected to scale up rapidly from its current number of 81 ambulances to around 900 vehicles, thus creating a huge demand for trained ambulance staff. LIHS is expected to train almost all of these required personnel.

Emergency Medicine in India

India is plagued by natural as well as man-made disasters. Close to 57 percent of the country's landmass is prone to earthquakes, 68 percent is prone to droughts, and the average number of road traffic accidents is around 20 times the world average. In addition, terrorist attacks, such as the incident of November 26, 2008, cause considerable losses. As one of the world's most disaster prone countries, a lack of emergency medical services results in serious loss of life, a significant portion of which is preventable. Around 30 percent of emergency patients die before they reach a hospital.

There is a wide gap between demand and supply of trained emergency medical professionals and until 2009, EMT was not legally recognized as a medical specialty. As a result, there are limited federal laws on emergency medicine and there is wide variation in state laws that have since come into place. Given the lack of a legal superstructure, training standards for paramedics and performance standards for hospital emergency departments are unclear and deficient. Most hospital emergency departments (also called casualty wards) function as triage units with no medical interventions. Personnel with little medical training often staff existing ambulance services. Policymakers are beginning to recognize the need for emergency medical training. However a coherent policy response is years in the making. This coupled with low public awareness of first aid and emergency response creates a clear need for quality emergency medical training services.

LIHS overview

LIHS aims to deliver protocol-based training in emergency medical and trauma care to healthcare providers and to empower healthcare providers & communities to save lives. To achieve this mission, the organization offers training to two broad market segments: medical professionals who aspire to practice emergency medicine, and lay people (termed "Samaritans"), who are unfamiliar with the basics of first aid. As of early 2010, the organization offers a total of eight types of courses, four for medical professionals and four for Samaritans. Courses for medical professionals are offered in conjunction with the American Heart Association and two of these – Post-Graduate Diploma in Emergency Medical Services (PGDEMS) and Advanced Cardiac Life Support (ACLS) account for more than two-thirds of LIHS' total revenues. In 2009, LIHS had gross revenue of INR 8.15 million. To date, LIHS has trained over 10,000 medical professionals and Samaritans in basic and advanced life support techniques. In additional to fee-based courses, LIHS also provides pro-bono training in first aid to non-profit organizations and underprivileged citizens.

Project Objectives

Our objective is to provide LIHS with a strategy for scaling up of its business operations and total outreach. To do this, the research team has analyzed existing and potential market segments, the size and nature of demand, the potential for expansion of course offering and geographic expansion. The team has also has identified areas for operational improvements and has developed a marketing and promotion strategy to help achieve projected growth.

Methodology

Our research methodology includes a literature review of the state of medical services in India, preliminary market analysis, and international standards for emergency medical training programs. Field visits allowed us to conduct primary research through interviews with LIHS founders and personnel, competing organizations, training and certification partners and area hospitals and surveys of past and current students. Additionally, we analyzed LIHS' financial performance to assess current and future profitability and to

make appropriate growth projections. Our final deliverable is this business plan for expansion of LIHS' training services.

Market Overview

Market

Courses for medical professionals make up the bulk of LIHS' revenue. Training these professionals who have daily contact with patients would directly impact the quality of emergency medicine in India. This market includes allopathic doctors and nurses who want to enhance their professional skills and meet international requirements, and AYUSH doctors, medical professionals trained in traditional medicine focused on holistic healing, who desire skills in western medicine to improve their chances for employment in hospitals. In some regions, LIHS also serves a limited number of jobseekers who desire work in a medical setting, as paramedics or ambulance drivers, but have no formal medical training.

The market for Samaritans is virtually unlimited, although capturing this segment will require some strategic thinking to identify organizations that would value first aid training for their members or employees. With around 50,000 factories in the states of Maharashtra and Bihar subject to legal requirements on safety officers in their premises, LIHS could become the go-to organization to provide such training. Foreign companies looking to standardize corporate best practices could use LIHS' services to provide training for its employees. Training for public service employees like teachers and police personnel could be another source of growth. For this though, LIHS has to apply for and obtain government contracts.

Given that India has a low physician to population ratio, we can anticipate an increase in the demand for emergency services. Our interviews indicate that as hospitals are restructuring their emergency rooms there will be a great need for professionals trained in emergency medicine. Changes in the regulatory landscape will likely create additional market segments.

Competition

There are 19 EM training institutions in the country, many of which are concentrated in the south. Of these, 14 are local AHA training centers. This indicates that there are low barriers to entry to become an AHA-certified institution. Entry requirements for students are low and the presence of so many players means that prices are converging.

Analysis of the competitive landscape leads us to conclude that existing training institutions do not meet nationwide demand for training in emergency medicine. A rough calculation of the market penetration of competitors shows that only 29% of market demand is being met, as a share of the flow of medical professionals, and less than 1% of market demand is being met, as a share of the stock of medical professionals. Clearly, the competitive landscape is far from saturated and LIHS has the potential to gain significant market share.

AHA-certified emergency medical courses the most widely taught across India. Although these courses' standardized curricula allows for fewer opportunities for differentiation, LIHS can leverage its high perceived quality of instruction and sound reputation to serve as a driving competitive advantage. There are significantly fewer training centers offering the longer duration PGDEMS and curricula is not standardized, allowing more room for differentiation. Partnering with highly-respected and well-known hospitals for the practical training component of the course is a significant distinguishing factor that is highly valued by students. Lastly, our research indentified few competitors offering courses for Samaritans. LIHS is well-positioned to capture a large share of the Samaritan market, especially if targeted marketing efforts are made.

Marketing Plan

Product: Drivers of student enrollment

Surveys administered by the research team to past LIHS students indicate that reasons for pursuing various LIHS courses are diverse. Students chose the PGDEMS course due to quality of instruction and hands-on

experience. The vast majority of students are AYUSH doctors who clearly indicate that they took the course to improve their chances of obtaining Resident Medical Officer (RMO) positions in hospitals and do not seek to work in ambulances. Thus, PGDEMS graduates are unlikely to fill the dearth in the country's supply ambulance personnel. Another key takeaway from our surveys is that the PGDEMS course may not be appropriate for all states due to cultural and legal differences across states.

We also found that nurses do not take the PGDEMS course. The lack of a longer training course designed to equip nurses with EM-specific training for jobs in ambulances and hospitals is a gap in LIHS' course offerings. Although uniform standards for training are lacking, we predict that the course would be akin to an EMT course under US standards. LIHS has planned a pilot program for such a course in Gujarat. We recommend offering such a program in Maharashtra as well.

There is steady demand for the AHA-certified ACLS/BLS course. Interviews reveal that this course provides additional education credits for allopathic medical students and practitioners and is viewed favorably by potential employers. Around two-thirds of the graduates take the course to meet international education requirements. Given the high value attached to international certification in India there will likely be growing demand for AHA-certified courses. Additionally, since the validity of the AHA certificate is two years we also anticipate significant potential for repeat customers.

Foreign companies, domestic industries and public service institutions would be the main paying customers for the First Aid Basic Life Support and First Responder courses for Samaritans. These courses are designed to equip non-medical professionals with the knowledge of how to respond in an emergency. The main driver of demand is the desire to meet international workplace safety standards or local legal requirements for workplace safety. Further, LIHS could seek to introduce a new disaster management course to meet demand from the municipal corporations seeking to improve public safety.

Scaling-up and expanding its product range would allow LIHS to use additional earnings to subsidize pro-bono training for underprivileged communities.

Price: Balancing outreach to medical and Samaritan segments

Given the fact that LIHS is a social enterprise our assessment of its pricing model needed to consider objectives beyond profit maximization alone. Outreach to non-paying customers is central LIHS' social mission. This outreach can be enhanced by cross-subsidizing courses for non-paying Samaritans with revenue from other courses, by lowering or raising prices of courses, or by a combination of all these measures. However, competition in the market for AHA courses (one of the largest revenue generators) limits LIHS' pricing power.

LIHS already charges at the higher end for both PGDEMS and ACLS/BLS. With higher pricing LIHS risks losing customers to competitors. As a result we recommend that LIHS continue pricing its courses at a modest margin. Pricing above cost with a reasonable margin will allow LIHS to continue providing pro-bono training. Furthermore, while LIHS is currently able to obtain higher margins on FABLS courses due to limited competition, this is unlikely to last as new competitors enter the market.

Place: Leverage Dial 1298 expansion

LIHS can leverage mutual knowledge an resources shared with its sister organization Dial 1298 by following Dial 1298's expansion trajectory. Currently LIHS has a presence in Mumbai only with plans to offer an EMT (Basic) course in the state of Gujarat. While plans for Gujarat are in motion thanks to the positive legislative changes in that state, we recommend that LIHS follow Dial 1298's expansion into three additional states: Rajasthan, Bihar, and Kerala. In doing so, LIHS can meet the demand of training ambulance personnel for Dial 1298 and take advantage of cost savings associated with sharing office infrastructure with 1298 (as they currently do in Mumbai). It can also leverage Dial 1298's close partnerships with regional hospitals and medical institutions.

As it expands geographically LIHS could consider several factors in determining which course offerings it should provide, including State-level regulatory environments, social and cultural norms including

acceptance of cross practice by AYUSH doctors, sophistication and structure of hospital emergency rooms, and the presence of other EM training institutions.

Promotion: Build awareness and brand

Paper and web-based surveys administered to LIHS students allowed us to better understand the needs and perceptions of students and contributed to the framing of the proposed marketing and promotion strategies. Currently, LIHS does not make concerted marketing efforts or have a defined promotion strategy. For example, 59 percent of surveyed students heard about courses by word-of-mouth. Overall, we found that satisfaction is high, with 51 percent of students very satisfied and 37 percent satisfied with the course, so we do not believe that significant structural changes need to be made to the course curricula. Based on feedback from students we find that communication and outreach efforts could be improved significantly. For example, students note that they would be much more likely to seek AHA recertification with LIHS if reminded through email and text. Additionally, LIHS could benefit by developing a marketing plan to formalize relationships with its institutional partners both public and private.

We recommend that LIHS develop customized promotional strategies targeted towards different audiences. For the general public, a key strategy would be building awareness of first aid and emergency response by partnering with the public sector on disaster management drills and public service announcements through various media. In addition, LIHS should publish white papers and editorials on the importance of emergency preparedness and also engage in a financial partnership with Dial 1298 to create community awareness on the importance of emergency response and ambulances. Building brand recognition by publicizing student testimonials on course quality and instruction is another key strategy. By improving its web presence, LIHS could reach out to more students and increase enrollment.

LIHS should build a marketing plan centered on two of its most popular courses – PGDEMS and ACLS to boost enrollment. Two ideas discussed in this report include establishing a strong campus presence at AYUSH medical schools through an ambassador program and implementing a notification system to encourage students to apply for ACLS recertification.

To increase business for Samaritan courses, entering into multi-year contracts with corporate clients for regular employee training could provide a constant revenue stream. By building partnerships with hospitals and medical schools LIHS could expand its PGDEMS program and create employment opportunities for its graduates. All of these efforts are crucial to reaching LIHS' growth targets.

Financial Plan

Based on a detailed financial analysis we propose two alternatives for LIHS' expansion.

The "base case" is based on estimated market demand in Mumbai, partnering with the Red Cross in Gujarat to offer an EMT course, and regional expansion to Kerala, Bihar, and Rajasthan to support Dial 1298's growth. In the base case the three-year compound annual growth rate (CAGR) of projected revenue is 50 percent and the projected cash flow by 2013 is INR 4.6 million. The cost of implementing this program is funded by LIHS' cash flow.

The "aggressive case" is base case and along with establishment of a permanent presence with expanded course offerings in Gujarat, Kerala, Bihar and Rajasthan. However, PGDEMS expansion would be limited to suitable markets like Bihar and Gujarat where there are large numbers of AYUSH doctors and where cross-practicing is permitted.

In the aggressive case the three-year CAGR of projected revenue is 93 percent and the projected cash flow is INR 8.2 million by 2013. Since the capital costs are higher in this scenario, implementation costs may require external funding.

Outcomes and Impact

Our financial model demonstrates that significant surplus will allow LIHS to fund its pro-bono outreach. In the early years LIHS will face a tradeoff between pro-bono outreach and growth. In the base case scenario we estimate that LIHS will have trained over 4,500 medical professionals, close to 11,500 Samaritans and

over 6,000 students trained through pro-bono community workshops by 2013. Outreach is expected to be much higher in the aggressive scenario with over 7,000 medical professional and over 17,000 Samaritans trained and almost 18,000 people trained through pro-bono community workshops.

LIHS can use its free cash flows to fund a variety of pro-bono initiatives, including free first-aid workshops for local communities, scholarships for medical students, donations to local health projects and funding for emergency response drills.

Key Recommendations

LIHS founders and stakeholders must first determine LIHS' priorities and plans for growth. Once a detailed expansion plan is defined and successfully implemented, surpluses can be used to fund social outreach work. The next steps involve strengthening operational capacity by hiring a full time business manager and marketing professional and refining the course offerings and price points. We recommend a longer duration EMT course for nurses and expanding the EMT Basic course in Gujarat to other regions. Raising LIHS' profile is a key element of the expansion plan and involves formal engagements with other institutions and publicizing its work. Finally, in order to expand outreach across other states LIHS should follow Dial 1298's geographic expansion. Since there will likely be variations in demand across market segments and regions, further research and pilot programs to evaluate the size and nature of demand.

Business Function	Key Recommendations
High-level business considerations	• Determine LIHS appetite for scale of business within Mumbai and elsewhere in India in order to determine scope of expansion • Fully leverage existing partnerships (e.g. NYPH) through regular communications
Market Opportunities	• Monitor rapidly evolving legal and regulatory standards for emerging market opportunities. • Few competitors for Samaritan clients offers opportunity for differentiation with active marketing effort.
Marketing – Products	• Expand product offerings to include EMT basic course in Maharashtra and elsewhere after successful pilot. • Consider Disaster Management Course marketed to public agencies.
Marketing – Place	• Leverage benefits existing partnerships with Dial 1298 and Red Cross (including shared costs, built in demand and co-branding) to facilitate lower cost geographic expansion. • Additional research needed in new markets to determine optimal course offerings if Aggressive expansion is pursued.
Marketing – Price	• Balance outreach to medical and non –medical segments by subsidizing pro-bono courses to Samaritan segment with profits from medical professional and corporate courses. • Conduct further research on price sensitivity of specific client segments to understand cross-subsidy potential.
Marketing – Promotion	• Significantly bolster promotional efforts to expand word-of-mouth referrals. • Actively communicate with past students in order to increase recertification business. • Implement promotional strategies through partnerships with intermediaries such as hospitals and medical schools.
Organization	• Institutionalize key roles by adding a full time manager and marketing professional in Mumbai. • Utilize central resources in Mumbai to support expansion; full time office manager needed in new states to support Aggressive expansion.
Operations	• Expand database management capacity to enable promotional, expansion and performance monitoring strategies. • Determine important Key Performance Indicators to monitor and manage growth.

1. BUSINESS OVERVIEW

1.1. The problem

In India today there exists a wide gap between demand and supply of trained emergency medical professionals. A number of factors contribute to this shortage. The first is the lack of a coherent, country-wide legislation to define and govern emergency medical practice, enforce training standards for paramedics, and require hospital emergency units to employ specially trained personnel. Some efforts to streamline and promote emergency medicine have been made at the state level (for instance by the state of Gujarat); however, most of India's states have not yet implemented official protocols on emergency medical services (EMS). Thus, emergency medicine as an official, stand-alone medical discipline remains severely underdeveloped. Another factor is the shortage of medical institutions providing training in EM as part of the core curriculum. While some medical universities now offer post graduate degrees in EM, advanced accreditation programs are generally restricted to medical professionals and students of Allopathic medicine. Finally, the number of specialized emergency medical training institutes (such as LIHS) is insufficient to meet potential demand of interested medical and non-medical individuals'; in many states, such training institutes are entirely absent. As a result of these deficiencies, many ambulances are not staffed by experiences emergency medical technicians (EMTs)[1], hospital are failing to employ trained EMTs in their emergency wards, and understanding of appropriate emergency life-savings techniques is low among the civilian population.

Despite these difficulties, awareness of the importance of emergency medicine is on the rise. In 2009 the Medical Council of India finally recognized emergency medicine as an official healthcare specialty, and a few of India's leading hospitals are implementing more rigorous training standards for in-house staff working in emergency care departments. Across the country, individual states are passing legislation on EMS standards and creating oversight bodies to regulate EMS practices.

1.2. The solution

Increasing awareness of emergency medicine and the likelihood of future favorable legislative changes at the state level are likely to result in ever-growing demand for trained EM professionals within both public and private sectors. In order to meet existing and new demand, LIHS will scale-up its services in Mumbai and expand operations into at least five other states within the coming three years. While courses have already been offered in other states such as Gujarat and Bihar, today, LIHS is ready to establish a permanent presence outside of Maharashtra. In order to maximize outreach the expansion framework is based on a comprehensive segmentation of the potential market, which incorporates an assessment of clients' diverse needs and price sensitivities. The expansion framework also takes into consideration state-specific legislative constraints and competitive landscapes.

1.3. LIHS history and overview

LIHS is a not-for-profit training institute founded in 2005 in order to address the shortage of emergency medical training in India. The organization seeks to build a cadre of trained EMS professionals who work in a variety of medical and non-medical sectors, and to educate Samaritans (civilian population) on how to administer first aid and basic life support in emergency situations. LIHS is officially certified by the American Heart Association (AHA), and has been recognized as the highest quality training center in India by AHA appraisers. LIHS offers a wider range of certificate courses for healthcare professionals such as Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS), International Trauma Life Support (ITLS), and a one year Post Graduate Degree in Emergency Medicine (PDGEMS), in partnership with Hinduja and New York Presbyterian hospitals. Since its founding, LIHS has trained over 300 registered medical practitioners in PDGEMS, over 1,000 doctors and nurses in BLS, ACLS, and ITLS, and over 10,000 Samaritans in First Aid and Basic Life Support

[1] A 2005 study found that only 4 percent of personnel staffing ambulances have certified formal training.
Law Commission of India Report # 201. August, 2006 http://lawcommissionofindia.nic.in/reports/rep201.pdf

LIHS also works closely with its sister organization Dial 1298, a private ambulance service headquartered in Mumbai. At the moment, all Dial 1298 ambulance staff is trained by LIHS. The mutually-beneficial partnership provides LIHS with an additional source of revenue and allows Dial 1298 to staff its ambulances with highly-trained personnel. In order to leverage common knowledge and resources, initial launching of operations in new states will closely follow the expansion trajectory of Dial 1298.

1.4. Vision and mission

The vision of LIHS is to become "India's premier emergency care training center with a passion for excellence". The key objective of LIHS is to create awareness about emergency medicine and to impart knowledge of emergency medical practices to all strata of society.

The mission of LIHS is three-fold:

- To empower health care providers & communities to save lives;
- To deliver protocol-based training in emergency medical and trauma care to healthcare providers;
- To facilitate effective networking for disaster preparedness.

1.5. Value proposition

LHIS' core competency is the provision of high quality training services across a diverse range of emergency medical practices. The organization's curriculum is up to par with international standards and its courses are administered by a team of highly trained medical professionals.

Table 1: Stakeholder Analysis

Stakeholder	Value Proposition
Allopathic doctors	LIHS courses offer doctors trained in Allopathic medicine an opportunity to augment their skill-sets and to obtain the internationally recognized AHA certification. As emergency medicine is generally not integrated into medical universities' curriculums, many practicing medical doctors (MDs) have inadequate knowledge of emergency care practices. Moreover, AHA certification allows interested MDs to compete for jobs overseas. For recent medical school graduates who hold MBBS diplomas, certifications in emergency medicine opens opportunities for employment in hospital emergency units or as medical consultants within private sector entities.
AYUSH doctors	LHS courses also expand employment opportunities for India's large contingent of AYUSH doctors who are generally limited in their ability to work in Allopathic hospitals. LIHS certification, specifically in PDGEMS, offers these doctors the possibility of finding positions in reputable Allopathic hospitals, which generally offer higher paying jobs than those typically available for AYUSH doctors.
Nurses	For nurses, LIHS courses offer students an opportunity to augment their skill-set and to improve their marketability. AHA certification also allows nurses graduating from BLS/ACLS and PDGEMS courses to meet international requirements associated with medical work overseas.
Corporations	Many corporate entities operating in high risk environments, such as oil rigs and manufacturers, are required to employ staff trained in

	basic life support techniques. Other corporate entities, in particular foreign multinationals, are often obliged to train staff in first aid and basic life support to comply with international health and safety protocols. Corporations headquartered in Mumbai benefit from proximity to LIHS and the possibility to have employees trained en masse in their locations by visiting LIHS trainers.
Other Samaritans	Other Samaritans, such as NGOs, schools, public sector agencies, and the general public, benefit from LIHS' high quality delivery of first aid and basic life support training sessions, which are conveniently held on clients' premises, and a number of which are conducted on a pro-bono basis.

2. MARKET AND COMPETITION ANALYSIS

2.1. Market

India is the world's 2nd most populous nation with over 1.1 billion inhabitants. It is also, unfortunately, one of the world's most disaster prone territories: 57 percent of the land is vulnerable to earthquakes, 68 percent to droughts, 8 percent to cyclones, and 12 percent to floods.[2] Regrettably, this vulnerability extends further to man-made disaster like 26/11 and other terrorist attacks. Beyond traumatic disasters, Indians face more mundane, but no less deadly risks of daily life, exacerbated by underdeveloped infrastructure. India, for example, has one of the world's highest incidents of road traffic accidents. At a rate as high as 16 per thousand vehicle it is over 20 times the world average. Adding to this, India also has a high burden of infection, communicable diseases and non-communicable diseases such as cardiac disease and diabetes.[3]

India has yet to create a coherent emergency medical system in response to the high risks faced by its large and growing population. Services are provided by a fragmented group of government, police, and private providers. The Medical Council of India recognized emergency medicine as a specialty only in July 2009.[4] Indian medical schools have begun to create emergency medical programs, but it will take some time to integrate emergency medicine as a new specialty. Furthermore, there are no nationwide regulations dictating the training of paramedics. Some individual states have moved ahead to create their own training regulations. Gujarat, for example, created the Gujarat Emergency Medical Services Authority (GEMSA), which has authority to set implementation guidelines for emergency services, fix minimum technical qualifications for emergency personnel including several other functions[5]. Most states, however, have yet to follow Gujarat's lead. In fact, while the government has reserved 108 as the nationwide number for emergencies, it has yet to implement it as functioning countrywide ambulance number[6]. Existing ambulance services are frequently little more than transportation due to staffing by personnel with little or no medical training. As a result, 30 percent of emergency patients in India die before they reach a hospital.[7]

This rather dire statistic is just one symptom of a much larger health care system that is still at its early stages of development. India currently has approximately 600,000 doctors and 1.6 million nurses. WHO standards for developing countries call for 2 million doctors and 4.4 million nurses, resulting in a shortfall

[2] (1298 Executive Business Summary).
[3] (DAS ET. AL page 789).
[4] Source: http://www.semi.org.in
[5] While legislation created GEMSA in 2007, as of 2009 it was not fully operational. Source: http://www.thaindian.com/newsportal/health/holistic-emergency-medical-services-in-gujarat_10041588.html
[6] The government has reserved 108 for emergencies, though implementation has been sluggish with some states still using 102. 108 was originally started by EMRI, a non-profit started by the founder of Saytam. There has been some recent controversies over the government's bidding process with EMRI. In 2008, however, it stated it would any disillusion with EMRI would not result in a discontinuing support of 108. According to an interview with Sweta, CEO of Dial 1298, 108 was still not functional in Mumbai even though it is the published number for emergencies.
[7] (DAS ET. AL page 789)

of 1.4 million and 2.8 million doctors and nurses, respectively.[8] There is also a shortage of paramedical and administrative staff. The current health care education system cannot meet this growing demand. The IFC estimates that, in order to meet the global average of 1.23 physicians and 2.56 nurses per thousand population in coming 15 years, India needs to open 600 medical colleges (100 seats per college) and 1500 nursing colleges (60 seats per college) right away.

To fill this large gap, private health care services, currently a USD 40 billion industry in India, are expanding at an incredible rate to supplement government services. The size of this market is expected to grow to USD 80 billion by 2014 and to USD 160 billion by 2019. This projection is based on a number of factors, including: a growing, aging population, rising middle class, urbanizing population, and changing disease burden. This rising demand will naturally include a rising demand for health care professionals with emergency medical training.

In many senses the development of India's health care system and more specifically its emergency medical system is very similar to the US. Fifty years ago, over half the ambulances in the US were staffed by poorly trained morticians.[9] Training institutions were among the first to recognize the need for more professionally trained emergency medical staff. By 1970, the first emergency medicine resident was training at a hospital in Cincinnati, Ohio. Nine years later, the American Board of Medical Specialties recognized emergence medicine as an official specialty. At the same time, hospitals were recognizing the importance of emergency training for its ambulances. St. Vincent's hospital in New York was one of the first to staff its ambulances with doctors in the late 1960's. What really moved emergency medicine forward, however, was a report entitled *Accidental Death and Disability: The Neglected Disease of Modern Society*, which served as an impetus for landmark legislation that gave the newly created department of transportation responsibility for creating the emergency medical system.

Over the next 30 years, the industry and the regulations that guided it consolidated. Today, while each state has slightly different requirements there are three general levels of emergency medical training for ambulance operators: EMT-Basic, EMT-Intermediate, and EMT-Paramedic. In addition, all physicians and nurses must obtain AHA certification in both Basic Life Support (BLS) and Advance Cardiac Life Support (ACLS). In 2008, there were over 200,000 professional paramedics in the US with a state-by-state median of 75 paramedical professionals per 100,000 people.[10] In addition, according to the American Ambulance Association there were over 840,000 trained emergency medical service personnel in the US and over 15 ambulances per 100,000 people.[11] This compares to 1 ambulance per 100,000 people in India.[12] Beyond medical professionals and trained first responders like firemen, policemen, and lifeguards there are other people like teachers and employees that are trained in the basics like CPR and how to respond to a chocking victim.

To meet these needs, large private companies have been established. The largest of which is EMSC, employing over 18,000 people and generating net revenues of $1.8 billion. Its ambulance service, American Medical Response, operates 4,100 ambulances across the US doing 3.4 million annual transports. Its training institution, The National College of Technical Instruction, has programs that address every aspect of the emergency medical system, and it trains over 5,000 students annually.[13]

India's EM market and regulatory environment will likely develop differently than that of the US. However, this does not diminish the per-capita market need for people trained in emergency medicine. In fact, factors in dense urban markets like congestion may require a system where more care is given en-route to the hospital. This will require professionals to obtain even more training. This transition presents a large opportunity for emergency medical training services in India across a variety of market segments.

[8] IFC, The Business of Health in Emerging India: The Private Health Sector in Tier II, Tier III Cities and Rural Areas
[9] The History of Emergency Medical Services:
http://www.emsedsem.org/ctemsi/HISTORY%20OF%20EMERGENCY%20MEDICAL%20SERVICES.pdf
[10] Calculation based on US Bureau of Labor Statistics and US census figures
[11] AAA, Need to determine what is 'emergency medicine service personnel'
[12] Isalker, Umesh. Victims Chances of Survival Rest on First 60 Minutes. Times of India. 2010
[13] http://ncti-online.com/northeastregion/about_ncti.shtml

Market Segmentation
LIHS offers courses appropriate for two broad market segments: 1) current and aspiring medical professionals and 2) non-medical professionals who are citizens (or "Samaritans") who need or want to acquire training in basic first aid for personal or professional reasons. Medical professionals include allopathic doctors, holistic doctors (including five branches collectively referred to by the acronym "AYUSH" doctors), and nurses. LIHS also serves a limited number of aspiring medical jobseekers with no formal medical training. Although these segments include individuals with diverse backgrounds and career objectives, certain common objectives lead these individuals to seek LIHS training.

Medical Professionals

Overview
The size of the potential medical professional client segments for LIHS is large and growing. In addition, the growth rate of these populations is expected to accelerate in the coming years as the Government and private healthcare companies invest in bringing the healthcare workforce in line with WHO norms and international averages. The distribution of the various population segments varies considerably across India, indicating that the potential demand for LIHS course offerings will as well. The size of the market for LIHS courses can be evaluated based the drivers for demand reported by past and present students. Due to the large percentage of LIHS revenue that stems from two of its primary course offerings- PGDEMS and ACLS/BLS and the limitations on survey data availability, the following analysis of market demand draws upon survey data from students of these courses, as well as from supplementary desk research. Select market size data is presented below; additional data can be found in Appendix A4.

Drivers of Demand
Members of each of these market segments exhibit demand for specific LIHS courses to meet several broad objectives.

I. Allopathic Doctors and Nurses interested in meeting international certification requirements, as well as Allopathic Doctors and Nurses and a limited number of AYUSH doctors seeking enhanced skills in enhancing emergency medical skill to improve domestic job performance or prospects.

A substantial number of students in each of the LIHS' courses cite "improving skills" reason as a motivating factor for taking a course.

Overview, Size and Trend in the Segment
Allopathic doctors comprise 62 percent of LIHS' clients in its ACLS/BLS courses. Allopathic doctors also comprise the vast majority of students in other short-duration courses offered by LIHS, such as PALS and ITLS. Allopathic doctors in India attend a medical college approved by the Medical Council of India (MCI) for five years after secondary school plus one year of internship experience in order to receive a MBBS degree and the title of "Doctor". After receiving their MBBS, students may elect to complete an additional three-year post-graduate education to attain the MS or MD qualification[14].

From 2000 to 2008, the number of allopathic doctors in India was increasing at an average rate of 3.39 percent.[15] As of 2008, there were 725,190 allopathic doctors in India whose density in the population varies substantially across the states. In order to meet the global average of 1.23 doctors per 1000, India would need an additional 540,000 doctors; certain facets of the Government's 2002 National Health Policy seek to address this shortfall and private actors increasingly fill the gaps in this market.[16] [17]

Nurses comprise approximately 33 percent of LIHS clients in its ACLS/BLS courses. There are two main tracks leading to nursing qualifications in India, the non-university or "diploma" track and the University or

[14] http://www.medicalisland.net/medical-education-in-india-and-the-us-a-comparison/
[15] Population data from World Bank (http://datafinder.worldbank.org/) and medical professional data from the Medical Council of India (MCI).
[16] IFC, The Business of Health in Emerging India: The Private Health Sector in Tier II, Tier III Cities and Rural Areas (re-calculated using 2008 data)
[17] Government of India Ministry of Health and Family Welfare, 2002 National Health Policy http://mohfw.nic.in/np2002.htm.

"degree" track. Diploma holders qualify under the Auxiliary Nurse and Midwifery program (ANM), General Nurse and Midwifery programs (GNM) and Licensed Vocational Nurse (LVN) qualifications, while university bachelor degree holders become Registered Nurses (RN). There are also Masters and PhD programs in existence, but they are relatively few in number.

There are more than 2,300 nursing training institutions in India[18] that admit more than 20,000 students per year. This represents a marked increase in the number of graduates in recent years; in 2004 there were only 1,000 training institutes graduating 10,000 nurses per year. The distribution of these institutions across India varies significantly with Karnataka, Andhra Pradesh, and Kerala housing more than half of all such institutions. Predictably, the distribution of the nursing population is concentrated in states with more training institutions, though is significantly more diversified. In total there were 1.6 million nurses in India as of the end of 2007, including ANM, RN and LHV nurses, equating to 1.55 per 1000 population.[19] This is number is also well short of global averages based on population density – in order to meet the average of 2.56 nurses per 1000, India would need an additional 1 million nurses.[20]

Analysis of Demand

58 percent of allopathic doctors and 50 percent of nurses attended the ACLS/BLS course in order to their bolster in emergency medicine. This likely stems from the lack of basic emergency medical training in the existing curriculum for all segments. If medical school curriculum is changed to include EM, this might diminish demand from new graduates; however, the existing stock of professionals would likely be incentivized to improve their skill set in remain competitive with new graduates. Furthermore, changing requirements related to continuing education for doctors will be a strong driver of demand from affected segments.

In seeking to augment their skill set to include emergency medical skills, students anticipate improving current job performance as well as their job prospects within India. Hospitals in India increasingly require ACLS/BLS certification for their nursing staff. However, nursing school curriculum in India does not typically include this certification. Furthermore, since completion certificates for AHA courses only last two years, LIHS could find a substantial market among past graduates seeking recertification. Our surveys show that 74 percent of MBBS students and 50 percent of MD students who completed ACLS would seek recertification from LIHS.

In addition to those seeking to improve domestic job prospects, allopathic doctors and nurses enroll in certain courses in order to meet international certification requirements, which call for medical professionals to be AHA certified in ACLS and BLS (as well as other certifications, depending on the specifics of the job. About 65 percent of surveyed ACLS/BLS students report meeting international standards to be the motive for taking the course. Broken down by market segments, the vast majority (77 percent) of surveyed nurses, 58 percent of MBBS students, and 50 percent of MD students surveyed attended the ACLS/BLS course in order to meet international requirements associated with obtaining medical jobs overseas. This driver of demand would not apply to AYUSH doctors, who aren't eligible to practice holistic medicine internationally. In the coming years, potential for emigration is likely to remain a strong driver of demand for the ACLS/BLS course, as approximately 10% of Indian physicians migrate to higher paying jobs work abroad[21].

Size of ACLS/BLS Market

As a result of the steady emigration of AHA certified medical professionals, lack of adequate EM training in medical schools, the demand from employers for EM certified staff and the two-year expiration on certification, this segment is likely to exhibit a steady stream of demand for such certificate courses. Using new graduates from each degree category as proxy for demand, the potential market for ACLS/BLS

[18] Indiastat "Distribution of Nursing Educational institutions Recognized by Indian Nursing Council as on 31st March 2008"
[19] http://www.indiannursingcouncil.org/Statistics.asp, http://nursingplanet.com/nr/blog6.php?s=LHV&sentence=AND&submit=Search
[20] IFC, The Business of Health in Emerging India: The Private Health Sector in Tier II, Tier III Cities and Rural Areas (Re-calculated using 2008 medical professional data.)
[21] Technopak Healthcare "10 Industry Trends" February 2007 Volume 1 (http://www.scribd.com/doc/6920263/TechnoPak-Healthcare)

courses is below in Table 1. This figure likely understates the market size, as it ignores the stock of existing professionals who might seek certification or recertification as well as the AYUSH graduates (which represented 12% of ACLS/BLS students surveyed) who also see value in the certification but who were excluded due to the uncertainty of their demand outside of Maharashtra.

Table 2: Estimated Market for ACLS/BLS

	Allopathic Graduates (MBBS + MD)	Nurses Graduates/year	Total ACLS/BLS Market
Graduates per year	38,713	20,000	77,317

II. AYUSH Doctors interested in working in hospital Intensive Care Units and emergency departments.

Survey results indicate that AYUSH doctors comprise 100 percent of clients in LIHS' one year Post Graduate Diploma in Emergency Medical Services (PGDEMS) courses in Mumbai.

Overview, Size and Trend in the Segments

AYUSH practitioners are comprised of individuals possessing recognized medical qualifications in the fields of Ayurveda, Homoeopathy, Unani, Siddha and Naturopathy. These holistic medical fields are governed by the Department of AYUSH which oversees the development and propagation of holistic health care delivery in India. AYUSH practitioners receive undergraduate degrees (Bachelors of Homeopathic Medicine and Surgery (BHMS), Bachelors of Ayurvedic Medicine and Surgery (BAMS) and Bachelors of Unani Medicine and Surgery (BUMS) pursuant to standards developed by their respective regulatory bodies. Generally, the requirements include completion of five years of study after secondary school. An additional three year post graduate track is also available. Research indicates that demand from this segment might vary considerably by region due to local factors influencing holistic medical practice. See the discussion on "Cross-Practice" below.

As of January 2007, there were 479 colleges conducting undergraduate AYUSH education with an admission capacity of 27,135 students nationwide. Of these seats, approximately 41.4 percent admission capacity was Ayurveda and 49.5 percent for Homoeopathy. Both the number of colleges offering undergraduate instruction in AYUSH and the admission capacity of existing programs has exhibited growth over the past several decades, with an average annual growth rates from 1992 to 2007 of 4.5 percent and 7.5 percent, respectively[22].

As of 2008, there were 751,926 registered AYUSH doctors in India. The distribution of AYUSH doctors varies significantly by state, with the highest concentration being found in Bihar, Maharashtra, and Uttar Pradesh which together account for more than half of the nationwide total. Other states have no registered AYUSH practitioners. Table 3 contains a summary of AYUSH practitioners and density for Priority States. Between 2000 and 2008, the number of AYUSH doctors increased at a rate of 1.24 percent [23].

Analysis of Demand

Emergency medical departments of hospitals in India are each structured differently. Historically, given the general lack of focus on emergency medicine, emergency departments were structured more as triage units serving to quickly transfer patients to the appropriate hospital department. Based on the research team's interviews with select hospitals, it appears there is a trend towards restructuring this model to create separate emergency departments staffed by qualified emergency medical staff. Certain hospitals have created a new tier of emergency ward staff to fill the gap between MBBS/MDs and nurses. For example, Amrita Institute of Medical Sciences in Kerala has created a new tier of hospital staff by placing employees through an in-house two-year EMT training course. The program, currently in its second year, trains graduates to fill the skill gap between MBBS/MD staff and nurses in the emergency ward. Thus far,

[22] AYUSH in India, Section 4 Medical Education

[23] Source : Census population for the years 1981, 1991 and 2001; Estimated population for the years 1980, 1982 to 1990 and 1992 to 2000 as per Health Information of India-2005 and projected population for the years 2002 to 2007 by Registrar General India. – foot note from "AYUSH in India 2007 report"

Amrita has only trained its own staff rather than training medical and nursing graduates for work elsewhere[24]. Should other hospitals follow this trend, demand for appropriately qualified candidates will increase.

The trend of structural change within hospital emergency departments will create new job opportunities for qualified candidates and thus represents an opportunity for LIHS. In Mumbai alone there are nearly 450 hospitals in which qualified graduates could find employment. While the PGDEMS course addresses potential demand from medical school graduates (in Maharashtra), there may be potential to create a specially tailored long duration course for nurses seeking to qualify for positions in hospital emergency units in other states.

Existing clients of LIHS that are in a position to capitalize on this trend are AYUSH practitioners graduating from the PGDEMS program. Upon completion of undergraduate programs in AYUSH medicine, graduates typically find work in private practice or AYUSH medical facilities. However, LIHS graduates that are AYUSH students report their desired jobs upon completion of the program to be Resident Medical Officer (RMO) and Casualty Medical Officer (CMO) in the ICU and emergency departments of local non-holistic hospitals. All of the surveyed PGDEMS students report that they hope to earn a higher salary upon graduation from the course, with the majority expecting to earn between 10,000 and 20,000 INR, a fact, which highlights the perceived value of the course by this segment. Based on interviews conducted with LIHS management and the internship coordinator at Hinduja hospital in Mumbai, PDGEMS graduates are valued by hospitals for their skills and knowledge acquired in the PGDEMS course and internship. Hospitals value the new qualifications of emergency ward staff and the lower cost of such graduates relative to MBBS who command salaries of 30,000 Rs per month.

Cross Practice Constraint. The legality and social acceptance of so-called "cross-practice" of holistic medical practitioners in allopathic medical institutions, determined at the state level, will be an important determinant of demand from the AYUSH doctor segment outside of Mumbai. According to a 2007 report "AYUSH in India", various efforts to co-locate AYUSH facilities with existing allopathic ones have been promoted with varying degrees of success with the goal of bringing AYUSH medicine into the mainstream Indian healthcare delivery. Such a trend would likely expand demand from AYUSH practitioners wishing to acquire "Western" emergency medical skills such as those taught in a PGDEMS or other longer-duration courses[25]. However, the limitations on cross practice specifically pertains largely to the ability of AYUSH doctors to prescribe medicine rather than actually to work in Western hospitals, so it is not clear that EM-trained AYUSH doctors are precluded from obtaining certain jobs for which LIHS courses might prepare them.

Size of PGDEMS Market

Based on the perceived benefit of the PGDEMS course in Mumbai, but the uncertainty of its value in states with less permissive cross-practice environments, the potential market for PGDEMS course in Mumbai is presented below, along with two additional states whose demographic and regulatory frameworks might also make attractive markets for a PGDEMS course.

Table 3: Estimated Market for AYUSH Doctors

State	AYUSH Doctors (AYUSH/1000)	AYUSH Grads/Year	Comment
Maharashtra	122,451 (1.26/1000 pop)	7,410	Successful PGDEMS program exists; expand marketing efforts to increase outreach
Bihar	166,152 (2.00/1000 pop)	1,448	Highest state percentage of AYUSH doctors
Gujarat	31,343 (.62/1000)	2,106	Relatively high number of AYUSH grads; State legislation permits cross practice

[24] Interview with Amrita Hospital, Kerala, India, March 21, 2010.
[25] AYUSH in India 2007

Given the operational and marketing challenges associated with scaling up the offering of this course, both in Mumbai and in new markets, the financial scenarios presented include conservative recommendations for increasing the number of courses offered rather than a recommendation to capture a sizable share of this potential market.

III. Male Nurses and emerging market segments interested in working in ambulances.

In general, candidates for ambulance jobs, and thus the clients for LIHS ambulance doctor, driver and EMT training courses will vary state by state. Candidates will generally include AYUSH doctors, male nurses and aspiring medical professionals with no current training in emergency medicine.

Overview, Size and Trend in these Segments

In Maharashtra, the AYUSH doctors that graduate from LIHS' PGDEMS program have on occasion been hired by Dial 1298 to serve as ambulance doctors. However, this source of personnel is limited by the fact that PGDEMS graduates favor employment in hospitals over ambulances due to both the greater prestige and higher pay of hospital jobs relative to ambulance jobs. This observation reveals a gap in the LIHS course offerings for a course appropriately designed for students, such as male nurses, who may wish to obtain ambulance jobs rather than hospital jobs. Elsewhere than Maharashtra, where AYUSH doctors face barriers to obtaining hospital jobs, there may be demand from that segment for EMT training depending on local regulatory and social factors.

Male nurses exhibit demand characteristics which are different from those of female nurses due to cultural norms that dictate gender norms for certain job categories. Based on interviews conducted in Kerala, the male nurses with supplementary emergency medical training are expected to staff the Dial 1298 ambulances. Due to cultural factors, EMT work is generally regarded as not suitable for female nurses (though this may change over time and within India). As of 2003, the proportion of male nursing graduates was 35 percent of the total. Extrapolating from this statistic, there are approximately 545,000 male nurses in the country[26].

In addition there is a vast segment of the potential market for LIHS courses, that encompasses individuals wishing to enter the healthcare delivery sector in some capacity that do not currently have medical training. While LIHS does not currently offer courses for individuals with no formal medical training, such as secondary school graduates aspiring to start careers in medicine, this market segment represents a potentially large opportunity for LIHS given the size of the segment and the value of emergency medical training in terms of job and salary opportunities.

Approximately 40 percent of Indian young adults attend secondary school[27], amounting to more than 96 million students[28]. Job prospects for high school graduates in the formal employment sector are poor. While efforts have been made to formalize the vocational training market the opportunity is not available to a large population of high school graduates. Given the magnitude of this market segment, it seems likely that the major determinant of demand will remain awareness and legal and regulatory policy. For example, in Gujarat, more permissive EMT legislation has recently been passed that creates a field of emergency medicine available to secondary school graduate who would attend a longer duration LIHS course to learn become an EMT. Where regulation allows for this segment to enter the medical field, demand will be constrained by the availability of appropriate entry-level jobs.

Analysis of Demand

LIHS will experience significant growth in demand for its services from its sister organization, Dial 1298 in the coming years. Dial 1298 anticipates deploying 900 ambulances across India by 2012, creating jobs for

[26] Indiastat "Number of Graduates Pass out Students in India 2003". According to another source, male nurses constitute only 10 per cent of the total intake into nursing training programs which would reduce the number of male nurses to 160,000.
[27] World Bank website. (http://www.worldbank.org.in) Education in India.
[28] World Bank EdStats

more than 2,700 EMTs and drivers[29] to be trained by LIHS. This segment represents "built-in" demand for LIHS training courses and will be a significant driver of growth for LIHS going forward.

Ambulance jobs exist elsewhere than Dial 1298 and thus the market for its training programs can be expected to be larger than 1298-driven demand. Demand from male nurses for EMT jobs is expected to exist because this segment has traditionally faced challenges obtaining traditional nursing positions in hospitals, which are generally regarded as "female" jobs. Dial 1298 reports a typical salary for its male nurse ambulance staff is between 5,200 and 7,700 INR per month, which is in line with the salary of 6,500 Rupees per month for traditional nursing jobs[30]. Furthermore, demand from nurses for a longer duration emergency medical courses that has been identified in other parts of the country (as evidenced by competitors' course enrollment) and is not yet been addressed by existing LIHS offerings (See "Product" discussion).

Should legislation such as that passed in Gujarat be expanded to other states, significant interest in EMT profession can be expected to exist within the segment. Secondary school graduates earn an expected salary of an average secondary school graduate in India is 182 INR per day, while jobs in the services sector (which include health, education and social work) pay significantly more on average – 240 Rupees per day[31]. State-specific legislation will be the primary determinant of LIHS' ability to offer courses to this segment, and will determine specificities of course design.

Size of EMT Market

Currently there is approximately 1 ambulance per 100,000 people in India, or just over 10,000 ambulances country-wide32. As the development of the emergency medical field, policy framework and infrastructure continues, the number of ambulances –and the demand for qualified staff for ambulances will follow suit. Using the American EMT field as a proxy, the future demand for EMTs in India can be estimated.

In 2008, there were over 200,000 professional paramedics in the US with a median of 75 paramedical professionals per 100,000 people and over 15 ambulances per 100,000 people. Applying these figures to the size of the Indian population, this translates to an end state of more than 150,000 ambulances and more than 750,000 trained paramedical professionals if the industry eventually converges with that of the US as many hope it will. The rapid scale of Dial 1298 and its source of growth – government tenders-- seemingly provide evidence that the country's investment in emergency preparedness has accelerated the trajectory of growth of the field.

In the near term, assuming the 10,000 ambulances in India are added each year, there will be demand for 30,000 trained ambulance professionals to staff these new ambulances. Coupled with the turnover and need for improved training for current ambulance staff, a new LIHS EMT training program will likely find a sizeable market.

Samaritans Market

LIHS has tremendous potential to utilize its Samaritan courses targeted at non-medical personnel. This segment of the market has not been paid much attention to by other EMT institutes. LIHS generally has conducted between 30 and 40 corporate workshops per year, training approximately 50 students per course. Institutional clients for these courses have predominantly included large corporations, such as Hindustan Lever, Philips, St. Xavier's School etcetera. These courses currently represent less than 30% of revenue. There is, however, significant scope to continue to aggressively target these segments, since they represent clients who, thus far, have not been adequately served by the market.

[29] Figures provided by Ziqitza. Assumes each ambulance will be staffed by 1 doctors and 1 driver for 3 shifts per day.
[30] http://www.webindia123.com/career/options/nurse/intro.htm. Statistic for nurses employed in government hospitals. Salary depends on level of seniority, type of hospital and other factors.
[31] Salary information from Indiastat Industry Division-wise Average Wage/Salary Received Per Day by Regular Wage/Salaried Employees of Age 15-59 Years by Sex and Broad Educational Level in Rural/Urban Areas of India (2006). Data provided are for male secondary school and upper secondary school graduates; industry classifications for Indian Statistical Office found at following url: http://www.mospi.nic.in/nic_98_9apr08.htm,
[32] Isalker, Umesh. Victims Chances of Survival Rest on First 60 Minutes. Times of India. 2010

These courses meet various objectives from a range of individuals and institutions. Based on numerous interviews and research we have defined 4 broad market segments that would be potential clients for LIHS course offerings.

I. Domestic factories and corporations looking to comply with Indian regulations or improve safety

Overview, Size and Trend in the Segments

In India, laws requiring employers to ensure occupational health and safety have been in existence for over 50 years and there are several specific pieces of legislation that cover workplace safety in mines, dockyards, and factories. For example, the government of India's Factories Act of 1948 dictates that 'safety officers' be appointed at any unit employing more than a thousand workers[33]. In addition to federal law, several states including Maharashtra and Kerala have laws requiring the presence of a safety officer in manufacturing facilities. Under Maharashtra's Factory Rules certain facilities (depending on their size) are also required to have occupational health centers and safety committees.

India had about 785,000 registered privately held limited liability companies, and 1,600 government-owned companies, with 85,000 and 112 in each category respectively being registered in 2008. This represents a 10% growth in private companies in 2008. With continued economic growth, India's domestic corporate sector will also continue to grow.

Analysis of Demand

Although there are significant federal and state regulations guiding workplace safety, demand for third party emergency medical training services has, to date, been limited. Unfortunately, enforcement of these laws has been lax. Adding to the problem, managers also find some of the current training regulations cumbersome.[34] This combined with lax enforcement provided disincentives for domestic corporations to improve workplace safety and train their employees in basic first aid and how to respond to a medical emergency. This is evident by the fact that in 2008, India had over 254,000 factories in operation employing over 10 million people. Yet, even with regulations, less than 5% of Indian factories had a safety committee or trained medical personnel.[35] This lack of safety and medical training resulted in over 34,000 injuries and almost 1,500 deaths.

This trend, however, looks to be changing as India continues its tremendous economic growth. In early 2009, the federal government approved the National Policy on Safety, Health and Environment at Workplace. The policy is a guideline aimed at enhancing employee safety. It lays out development of national standards on workplace safety, a system of incentives to enhance safety and provision for a statutory framework as key strategies. Employers are encouraged to provide occupational health safety services for their employees by arranging for professionals to fulfill this obligation. Given these trend and increasing focus on enhancing industrial and workplace safety, there is a large and increasing need for emergency medical training services provided by LIHS.

Exhibit 1: Working Factories

Size of Market

The size of this market is potentially huge with 785,000 private companies currently operating in India. The need for emergency medical and first aid training for individuals at each of these organizations, however, is probably limited. Factories that fall under current workplace regulations are more conservative proxy for this market. The average factory, however, only employs a small number of individuals and thus would also probably have limited need for training. Using the conservative estimate based on the number

[33] India's Directorate General of Factory Advice Service and Labour Institutes (DGFASLI),
[34] Interviews with LIHS founders conducted in Jan, 2010
[35] http://www.dgfasli.nic.in/info1.htm

of factories that currently have a safety committee, 5 percent, would be interested in obtaining first aid training once every other year there is a potential market in India of 6,350 courses per year and 2,150 courses in LIHS' target regions. With the large size of this market financial projections have focused on the ability to execute and reasonable growth.

II. Multinational Corporations looking for international safety certification

Overview, Size and Trend in the Segments

Multinational Corporations based in the United States and other western countries are subject to strict regulations for workplace safety. In the United States, for example, companies are regulated by the Occupational Safety and Health Administration (OSHA) and Health and Safety Executive and are required to provide first-aid facilities in the workplace (bandages and AEDs) and trained first aid personnel[36,37]. These individuals must receive an internationally recognized certification.

Although these rules do not apply to offices and manufacturing units overseas, given the trend toward harmonizing operations and best practices across countries, there is potential for LIHS to offer emergency medical training services for this market. As of March 2008, there were 2,593 foreign companies operating in India.[38] A significant number of these are concentrated in the state of Maharashtra and other large urban centers like Bangalore. As with domestic corporations, the population of active foreign companies is expected to continue to grow.

Analysis of Demand

India continues to attract new multinational corporations. At the same time, its own domestic companies like Tata and others are expanding beyond the borders of India. As the multinational corporate sector expands, it is expected to strive to attain international standards of workplace safety. This means Indian based multinational will have incentives to important training standards from their operations abroad, and foreign companies to export their training practices. These companies need a training partner, which is dedicated to quality and has the international qualifications of LIHS.

Size of Market

Although multinational corporations employ a large number of people, they only have limited need for personnel. We estimated that each multinational would need an average of one training course per year, and that only 20 percent of multinationals would be interested in procuring a third party to perform basic first aid training for its employees. Using these conservative estimates, there is a market for 518 courses per year in all of India and 119 courses in LIHS' target regions. As with the previous segment, our financial projections have focused on the ability to execute and reasonable grow.

Table 4: Foreign Companies

Region	# of Foreign Companies
Maharashtra	553
Gujarat	27
Kerala	11
Rajasthan	2
Bihar	1
India	2,593

III. Domestic Public and Private Schools interested in providing a safe learning environment

Overview, Size and Trend in the Segments

Every parent wants to be able to send their children to a school with a safe environment for learning. Many private international schools currently provide basic first aid and emergency response training certified by an international body like the American Health Association. And while there are only a few international schools throughout India, we believe that this trend will continue to spread to other private and public schools as parents and regulatory bodies begin to demand more assurances of student safety.

[36] http://www.osha.gov/dsg/hazcom/hazcomcommentnotice.html
[37] http://www.osha.gov/Publications/OSHA3317first-aid.pdf
[38] Indiastat.com: Statewise number of foreign companies operating in India

India, in 2005, had almost one million primary schools with 3.8 million teachers and student enrolment of about 182 million[39]. Reaching out to both public and private schools and training teachers and students in basic emergency medical procedures could significantly expand LIHS' outreach.

Analysis of Demand

In private schools, demand will likely come from parents who are motivated to choose schools whose teachers offer more value not only in terms of the pedagogical proficiency but also their ability to assure parents on the safety and well being of their children. However, since a large proportion of these institutions are government owned and funded, the main driver for future demand will come from further legislation and increased awareness in the importance of having teachers, administrators, and students that are prepared to respond to basic emergencies that they may unfortunately face. We are not aware of any such regulations or history of any medical training organization procuring government contracts to provide first aid training to public school. This means that in the near term, demand will likely be from higher end private schools.

Size of Market

With 56,166 unaided and 24,120 aided private primary and junior basic schools in 2006-2007, focusing on private schools still represents a large potential market for first aid training in India.[40] Assuming only 5% of unaided private primary schools would be interested in contracting first aid services once a year for its staff and students, the potential market in India is over 2,800 courses per year. In LIHS' target markets it is almost 400 courses. With the large size of this market financial projections have focused on the ability to execute and reasonable growth.

IV. First responders to disasters

Overview, Size and Trend in the Segments

Recent security threats and natural disasters only highlight the need for all first responders including public servants like police or firemen, and employees of at risk industries like hospitality and tourism to be able to respond to emergencies through basic first aid and awareness. There are several factors that make this demand in India particularly acute. First, India is subject to annual floods, avalanches, heat waves, landslides and other natural occurrences, which sometimes culminate in disaster scenarios entailing injury or the loss of life. India lost over 22,000 individuals to natural disasters in 2005. In addition, the threat of man-made disaster scenarios such as terrorist attacks has risen considerably in the past months. Following the 26th November 2008 terrorist attacks, the provision of federally- or state-mandated disaster management activities in the urban areas to deal with the aftermath of such events has become a priority.

India as a whole is estimated to have about 1.5 million police officers as a whole, with Maharashtra and Kerala employing 150,000[41] and 42,000[42] police officers respectively. In addition to the police force, India is estimated to have about 200,000 fire fighters[43]. Though statistics for firefighters are hard to come by, The Mumbai Fire Brigade is 2,600 strong. In addition to Mumbai it is estimated that Kerala has about 3,000 firefighters[44] and Bihar 465[45].

The hospitality and tourism industry, like other industries in India, is growing fast. In Mumbai alone there are around 5,000 hotels in the five-star category.

[39] Source: UNESCO Global Monitoring Report 2007
[40] Source: Indiastat - State/Management-wise Number of Primary/Junior Basic Schools in India 06-07
[41] Source: South Asia Terrorism Portal: http://www.satp.org/satporgtp/countries/india/maoist/Assessment/2010/Maharashtra.htm
[42] Kerala Police website: http://www.keralapolice.org/newsite/aboutus.html
[43] Source: Maharashtra Fire Services website: http://www.maharashtrafireservices.org/pdf/mumbai_fire_brigade_uniform.pdf
[44] Kerala Government Department of Fire and Rescue Services: http://www.kerala.gov.in/dept_fireforce/programs.htm
[45] Government of Bihar Disaster Management Department: http://disastermgmt.bih.nic.in/District percent20Helpline/Fire-Service-Stations.pdf

LIHS' work on conducting large scale disaster response simulations in Mumbai and close relationship with Dial 1298[46] position it well to provide course offerings that address the needs of these constituencies.

Analysis of Demand

Public servants such as the police forces and fire brigades, who by the very definition of their functions have a far greater probability of being called upon to administer emergency medical services, could potentially save lives and should require basic first aid training. Existing police force and fire brigades in most states, however, have not been exposed to any level of emergency medical training. In Kerala, this is changing as emergency medical training institutions like Amrita are beginning to conduct training sessions for policemen.[47] We believe this trend will spread to other states as funding increases and the public begins to demand a higher level of service, especially in the face of disasters.

For at risk industries, like hospitality and tourism, the need for personnel trained in basic first aid and disaster response has unfortunately been highlighted by the siege at the Trident hotel in November of 2008. While this was a rare event, the need for hotel staff to respond to more mundane medical emergencies and accidents also exists. This extends to other commercial establishments that cater to tourists like convention centers and even tour operators who interact with international tourists who demand operators that can respond appropriately to a possible emergency. This demand, however, will be limited to at risk regions like Mumbai.

Size of Market

The size of the civil servant market is enormous with over 1.5 million policemen and fireman in India and over 300,000 in our target market. While we believe that every policemen and firemen should be trained in basic first aid and responding to an emergency, actually procuring government contracts for this training may prove to be exceedingly difficult. Thus, we have not included any financial projections for these types of courses.

Similarly, we believe all hotels catering to tourist in at risks regions such as Mumbai should have their staff trained in basic first aid and emergency response. Assuming that in the near term a 2 percent of high-end hotels in Mumbai are likely to procure these types of services on an annual basis, the market size is 100 courses per year.

2.2. Competition

There are 19 institutions in India offering emergency medical training, with a high concentration in the south of India. The main conclusion from analyzing the competitive landscape is that competing institutions do not meet nationwide demand for training in emergency medicine and that there is huge potential for LIHS to capture a greater share of the market than it currently does. Limited information is available on the number of medical professionals trained by competitors, but a back-of-the-envelope calculation reveals that only 29% of market demand is being met, as a share of the flow of medical professionals, and less than 1% of market demand is currently being met, as a share of the stock of medical professionals. This figure was derived by estimating that the 19 training institutions (and additional branches) train an average of 1,000 students per year, for a total of 25,000 students per year. See table 5 below for details.

Table 5: Number of Medical Professional and Market Share

	Allopathic Doctors (MD, MBBS)	**AYUSH doctors**	**Nurses** (ANM, RN, LHV)	**Total medical professionals**	**# Students trained / year**	**Market share**
Flow	725,190	751,926	1,572,363	3,049,479	25,000	0.8%
Stock	38,713	27,135	20,000	85,848	25,000	29.1%

[46] Dial 1298's dedicated pro-bono ambulance response and fast response to previous disasters in Mumbai has earned it a reputation for competent and gracious disaster response

[47] Interview with Emergency Department Doctors at Amrita Hospital in Kerala on March 22, 2010

Analysis of LIHS' competition yielded four primary competitor types for the courses that LIHS offers: dedicated EM training institutions (such as LIHS), medical schools with EM program offerings, hospitals with EM training arms, and humanitarian organizations.

Exhibit 2 – Emergency Medical Training in India

Of the 19 training institutions, 14 are AHA international training centers. What is apparent from a glance at the competitive landscape is that the AHA-certified courses have become relatively commoditized. On the supply side, AHA appears to offer licenses to medical institutions to operate as international training centers liberally, implying low barriers to entry. On the demand side, with a short duration, an attractive international certification, and low entrance requirements, prices of these courses are evidently converging. The scope for high margins in these offerings seems limited in the future. And though there are fewer opportunities for differentiation due to the standardized curriculum, LIHS can still differentiate itself by the quality of instruction.

With the longer duration PGDEMS course, there are fewer competitors offering this course and significant room for differentiation due to the non-standardized curriculum. For example, LIHS' curriculum is comprised of 6 months of classroom training followed by 3 months of hospital training and 3 months of ambulance training, while Symbiosis' curriculum is comprised of 8 months of classroom training followed by 4 months of hospital rotations. In surveys conducted with current PGDEMS students, 69 percent of students identified the prestige of the partner hospital, 39 percent identified the quality of instruction, and 33 percent identified the potential for job placement as the primary reasons for selecting LIHS over competitors. As LIHS expands its PGDEMS course within Mumbai and in other regions, partnering with highly-respected and well-known hospitals for the practical training component of the course is critical.

Our research identified few competitors offering courses for Samaritans. Given the low competition and large market size of institutions demanding courses in first aid and emergency response, LIHS has the potential to capture a large share of this market if it conducts targeted marketing efforts towards the Samaritan segment.

LIHS faces differing levels of competition in the regions where it is currently based and where it plans to expand to, ranging from zero to three competitors. See table below for details.

Table 6 – Competition by Location

Location	Competition
Maharashtra	In Mumbai where LIHS currently operates, LIHS is the only emergency medical training institution. However, within Maharashtra and outside of Mumbai, LIHS faces three competitors in Pune: Oasis, Symbiosis, and Ruby Hall. Both Oasis and Symbiosis offer the full breadth of courses that LIHS offers, while Ruby Hall only offers the PGDEMS course. Prices for the AHA courses are comparable while LIHS has the highest price for the PGDEMS course. However, despite a higher price, LIHS provides more value to its PGDEMS students through significantly smaller class sizes, more training hours, and a longer duration. Symbiosis is the strongest competitor due in part

	to high brand recognition: 39 percent of PGDEMS students surveyed considered attending Symbiosis.
Kerala	In Kerala where LIHS is in the process of setting up operations, it faces three competitors: Amrita Institute of Medical Sciences, Malabar Institute of Medical Sciences, and IIEMS. Of the three competitors, IIEMS is by far the strongest competitor. IIEMS offers the same range of courses as LIHS and has 1 main training center and 15 regional training centers across India through its franchise model. IIEMS is present across all of India with the exception of the Northeast. It trains approximately 2,800 BLS and 2,400 ACLS students per year at its main training center and trains approximately 150 BLS and ACLS students per year at its regional training centers. Due to strong brand recognition, 28 percent of BLS students surveyed considered attending IIEMS.[48]
Rajasthan	There are currently no emergency medical training institutions in Rajasthan, giving LIHS the first movers' advantage.
Gujarat	In Gujarat, LIHS faces three competitors: Academy of Traumatology, Apollo Hospitals, and Lifeline Foundation. Of the three competitors, Apollo Hospitals is most similar to LIHS in terms of course offerings. Apollo in Ahmedabad is part of the Apollo Hospitals Group. Apollo is an AHA international training center offering courses in BLS, ACLS, and PALS. Apollo also offers a fellowship in emergency medicine as well as an EMT-Intermediate course held in collaboration with Stanford University. Stanford emergency medicine residents are given opportunities to undertake paramedic training and clinical observation at Apollo Hospitals in Hyderabad and Chennai. Academy of Traumatology in Ahmedabad is an AHA international training center offering courses in BLS, ACLS, and PALS.
Bihar	There are currently no emergency medical training institutions in Bihar, giving LIHS the first movers' advantage.
Other Locations	Although LIHS has no current plans to expand operations into Hyderabad, it faces competition from EMRI. EMRI is a dedicated training institution that offers the full breadth of courses as LIHS, in addition to several more post-graduate EM courses. It has high brand recognition due to partnerships with international institutions such as Stanford University. 14 percent of BLS students in Mumbai surveyed considered attending EMRI. Similarly, although LIHS has no current plans to expand operations into Karnataka, Rajiv Gandhi University of Health Sciences Karnataka has the potential to become a strong competitor to LIHS in the future. This is because the Ministry of Home Affairs' National Disaster Management department, in consultation with the Medical Council of India, has identified the university as the lead national resource institution for training of medical personnel in hospital preparedness for emergencies and mass casualty incident management.[49]

3. MARKETING PLAN

3.1. Product

Currently, LIHS offers a total of 10 courses targeted toward the market segments we identified earlier. Several of these are offered under the aegis of AHA certification while others were developed to address first aid training needs in corporate and educational settings. The tables below provide a description of current and planned courses.

[48] Interview with IIEMS in Kottayam on March 23, 2010
[49] http://ndmindia.nic.in/Mitigation/mitigationhome.html

Table 7: Current Courses

Course	Description	Market Segment	Degree/Cert
Post Graduate Diploma in Emergency Medical Service (PGDEMS)	A one-year weekend course providing emergency medical training for AYUSH physicians and trained nurses. Students attend classroom training for 6 months and perform practical training for 6 months. The program is AHA-certified and is affiliated with Hinduja Hospital and New York-Presbyterian Hospital.	• AYUSH Doctors and nurses seeking new skills/certifications for expanded domestic job opportunities (hospital Intensive Care Units and emergency departments)	• AHA Certificate with NYPH stamp
Basic Life Support (BLS)	1 day workshop for medical professionals on various responses to life-threatening situations.	• Allopathic doctors and nurses seeking new skills and/or certifications for expanded domestic and international job opportunities.	• AHA Certificate (globally accepted)
Advanced Cardiac Life Support (ACLS + BLS)	Three-day AHA-certified course includes training to manage pre-cardiac-arrest, arrest and post-arrest resuscitation.	• Allopathic doctors and nurses seeking new skills and/or certifications for expanded domestic and international job opportunities.	• ACLS certification with AHA stamp
Pediatric Advance Life Support (PALS)	Two-day AHA-certified course that trains health care providers as pediatric/infant first responders.	• Allopathic doctors and nurses seeking new skills and/or certifications for expanded domestic and international job opportunities.	• PALS certification (not a real certification)
International Trauma Life Support (ITLS - offered in conjunction with Symbiosis Institute in Pune)	A two-day workshop affiliated with the Alabama Chapter of the College of Surgeons & Physicians that trains physicians in pre-hospital trauma care.	• Allopathic doctors and nurses seeking new skills and/or certifications for expanded domestic and international job opportunities.	• ITLS certification with Alabama Chapter of College & Physicians
First Aid, Basic Life Support and Disaster Management (Demo)	Three-hour demonstration that introduces participants to basics of first aid and instructions on dealing with medical and traumatic emergencies.	• Corporations • Domestic public and private schools interested in providing a safe learning environment. • First responders to disasters	• LIHS FABLS certification
LIHS First Aid, Basic Life Support Training (LIHS FABLS)	A one-day workshop with hands on training to deal with medical emergencies that is offered under LIHS certification.	• Domestic factories and corporations looking to comply with Indian regulations or improve safety • Domestic public and private schools interested in providing a safe learning environment • First responders to disasters	• LIHS Certified
AHA First Aid Basic Life Support Training (AHA FABLS)	A one-day workshop with hands on training to deal with medical emergencies that is offered under AHA certification.	• Multinational Corporations looking for international safety certification • International and private schools interested in providing a safe learning environment • First responders to disasters	• AHA certified
HeartSaver First Aid (AHA HS AED)	AHA-certified one-day workshop that focuses on cardiac first aid.	• Domestic factories and corporations looking to comply with Indian regulations or improve safety • International and private schools interested in providing a safe learning environment • First responders to disasters • Health institutes	• AHA Certified
First Responders Program	• 4 hour training for Samaritans on basic response to emergency situations.	• Pro-bono • Corporate sponsored • First responders to disasters	

Table 8: Planned Courses

Course Name	Duration	Market Segment	Degree/Certificate
Emergency Medical Training – Basic	• 3 months	• Male Nurses and emerging market segments interested in working in ambulances	Certification to be supported by the Red Cross – Only Available in Gujarat

Expanding course offerings

Training program for Dial 1298 employees – LIHS expects to formalize an agreement to conduct a three-day training workshop for Dial 1298-employed physicians. The plan is to charge a per-student training fee. Other than this, LIHS does not offer any other course designed to prepare individuals for jobs as emergency medical technicians. Ambulance drivers employed by 1298 also undergo a two-day course on First Aid, Basic Life Support, and Lifts & Carries. As in the case of EMTs, the course is exclusive to 1298 and is not offered to external clientele.

EMT course for nurses – Data from our surveys shows that nurses do not enroll for the PGDEMS course. The lack of a longer training course for nurses to equip them with EM specific training for jobs in ambulances is a key gap in LIHS' offerings. Although uniform standards for training are lacking, we envisage that a new course would be akin to an EMT course under US standards. LIHS had planned a pilot program for such a course in Gujarat. We recommend that it consider offering such a program in Maharashtra as well.

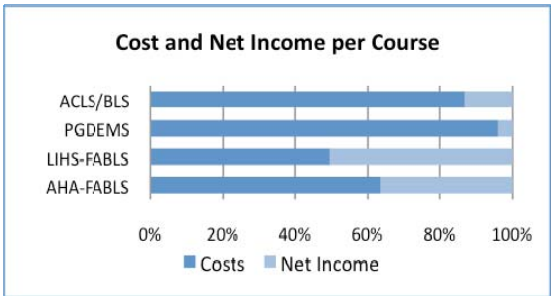
Disaster Management – Further, LIHS could seek to introduce a new disaster management course to meet demand from the municipal corporations seeking to improve public safety.

Policymakers are beginning to realize the dearth of emergency services and various arms of the federal and state governments have established dedicated divisions to deal with disaster scenarios. The National Disaster Management division of the Ministry of Home Affairs has developed a comprehensive five-year Disaster Risk Management Program that focuses on community and local government involvement, while the Ministry of Agriculture's Natural Disaster Management division deals with disaster scenarios which impact the lives and livelihood of India's farmers. As disaster relief and disaster rehabilitation continue to evolve, these government bodies are increasingly recognizing the need for trained civilians at the community level – often the first on the scene - available to administer life saving first aid in disaster scenarios. We recommend that LIHS plan for a disaster management course. However, its success is dependent on the ability to win government contracts.

3.2. Price

LIHS' pricing strategy takes into account three factors for each course offering: 1) the variable and attributable fixed cost of each course, 2) the price of comparable competitors, and 3) the willingness/ability for students to pay. LIHS must balance all three factors to competitively and responsibly price each of its course offerings in a way that maximizes outreach to paying medical and Samaritan segments, allows for pro-bono outreach to individuals who cannot afford its services, and maintains its financial sustainability. It can be a difficult balance, but LIHS' pricing strategy is best illustrated by examining its three main revenue-generating course in light of each factor. These include ACLS/BLS, PGDEMS, and FABLS.

Exhibit 3: Cost and Net Income



Costs and Net Income Margins

All of the major course offerings are currently priced above attributable variable and fixed costs, but margins vary between courses for a variety of

reasons. For example, it can be argued that medical professionals have the greatest impact in emergencies because they are the most likely to encounter them and the best positioned to deal with them. With that in mind, LIHS does want to price the majority of the medical segment out of its quality courses. On the other hand, pricing too low will limit its ability to support pro-bono social outreach to community members and others who cannot afford the cost of its services. With price sensitivity information limited, we believe that charging reasonable and competitive margin for its medical courses (ACLS/BLS and PGDEMS) is the most appropriate strategy. For its Samaritan segment course, FABLS, it can charge larger margins to increase its ability to fund pro-bono work without sacrificing its goal of training medical professionals. For a detailed analysis of costs and net income margins please see section 7 and appendix A2.

Competition

AHA certified courses and long course such as PGDEMS are offered by a number of competitors and pricing for these courses is currently in line with other service providers. There is some ability to differentiate LIHS course offerings like PGDEMS through its reputation for high quality, small class sizes, and desirable partnership with Hinduja Hospital, but AHA certified courses are very difficult to price above competitors. This is due to the commodity like nature of the certificate and the relatively low barriers to entry for other internationally certified providers.

Table 9: Pricing of Competition

Course	LIHS	Median	High	Low
ACLS/BLS	6,500	6,250	8,000	5,000
PGDEMS	26,100	23,250	26,100	17,500
FABLS	Competition does not currently have similar offerings			

FABLS courses targeted at Samaritans, on the other hand, have very little competition. This allows LIHS to price in a comfortable margin, which it can then use for its pro-bono outreach. Although this situation is unlikely to continue forever, and as new competition enters the market, LIHS may be forced to lower its prices to margin more in line with its current ACLS/BLS margins.

Price sensitivity

Pricing and margins of the major course offerings are also in line with preliminary judgments on willingness and ability to pay. PGDEMS students are comprised of AYUSH doctors who are taking the course to increase their skills and improve local job opportunities at hospitals. These students typically go on to work as RMOs in ICU or Emergency departments and make approximately INR 1,500 per month. LIHS' lower margin on PGDEMS reflects this limited ability to pay as well as the competition in the market. LIHS' other large revenue generating medical course, ACLS/BLS, has a higher margin that reflects the fact that a majority of students are allopathic doctors or nurses who are looking to go abroad for higher paying positions.[50] Finally, the Samaritan course, FABLS, has the highest margin reflecting the fact that a majority of its clients are corporations not individuals. It may be possible to further price segment these markets on willingness/ability to pay, but more research is needed on price sensitivity.

With these factors in mind, we believe LIHS' current pricing strategy on its main courses appropriately balances its various goals and constraints. More information on price sensitivity and possible price segmentation within FABLS should be evaluated as it becomes available. Unfortunately as competition increases LIHS may be less able to cross subsidize all of the pro-bono work that it would like to do. To mitigate this risk, there are a variety of options that are briefly explored below.

Additional Sources for Pro-Bono Funding

- *Pursuit of Higher Volumes* – Increased scale has the benefit of not only reaching more paying medical students and Samaritan clients, but also more free cash flow for pro-bono outreach. Even

[50] Of the 50 BLS/ACLS survey respondents, 64% listed meeting international standards as their primary reason for taking the course. 52% of the students were allopathic doctors and 26% were nurses

with reduced margins, LIHS can reach more students by achieving the appropriate scale of its operations.

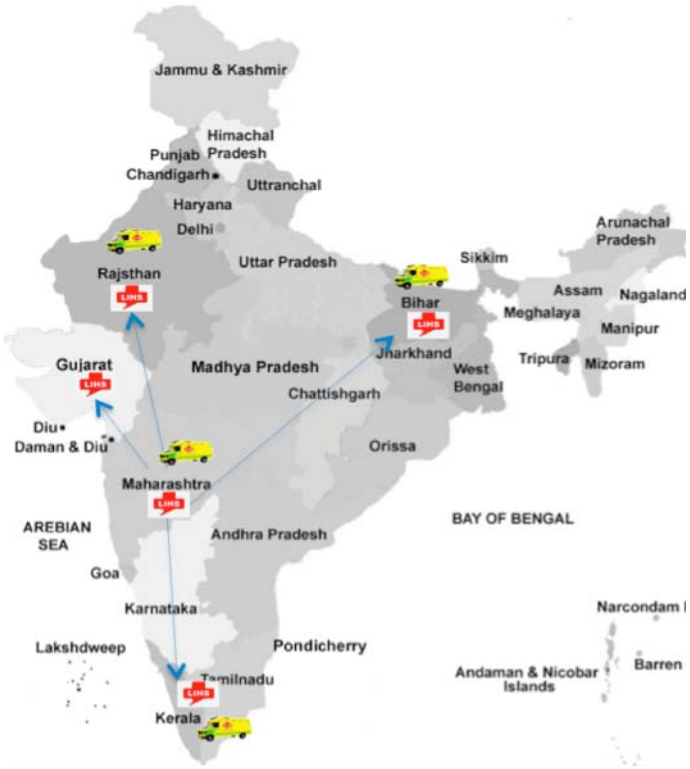
- *A Deepening Partnership with Dial 1298* – LIHS is working with Dial 1298 on a pilot program to provide awareness and basic emergency medical training to poor communities in Mumbai. Dial 1298 is funding the program to provide the service free of charge to community members. This program will not only expand training to underserved communities, but also increase awareness of Dial 1298's ambulance services.

  In addition to working with Dial 1298 on this innovative pilot program, LIHS is changing its pricing for Dial 1298 internal training. While it has always covered the cost of the services, Dial 1298 pricing will be more in line with market rates, which will improve LIHS' ability to fund more pro-bono work.

- *Pursuing International Grant Funding* – Large international organization such as the World Health Organization (WHO) and the Gates Foundation have immense pools of money available for improving medical services in the developing world. While this is not a dependable or consistent source of funding, grants can be used to increase capacity and fund specific types of programming. Grant application processes can be very involved, and hence, come with large opportunity costs. With these factors in mind, LIHS will pursue grants only when the long run expected return outweighs the short run application costs.

3.3. Place

LIHS' geographic expansion strategy should consider a number of factors. First, LIHS should leverage existing partnerships where possible. In new states where Dial 1298 has won government tenders, expansion into these new markets will enable LIHS to scale in a cost-effective, lower risk way due to the fixed and operating cost sharing arrangements between the two, the built in demand for trained EMT professionals created by Dial 1298's expansion, and the opportunities for LIHS to position itself to capitalize on the brand recognition achieved by 1298 (see "Promotions"). In Gujarat, while there is not yet a 1298 presence, a partnership with the Red Cross will facilitate the lower cost LIHS' expansion into this new region, given its agreement to divide classroom expenses and back-office charges with LIHS[51].



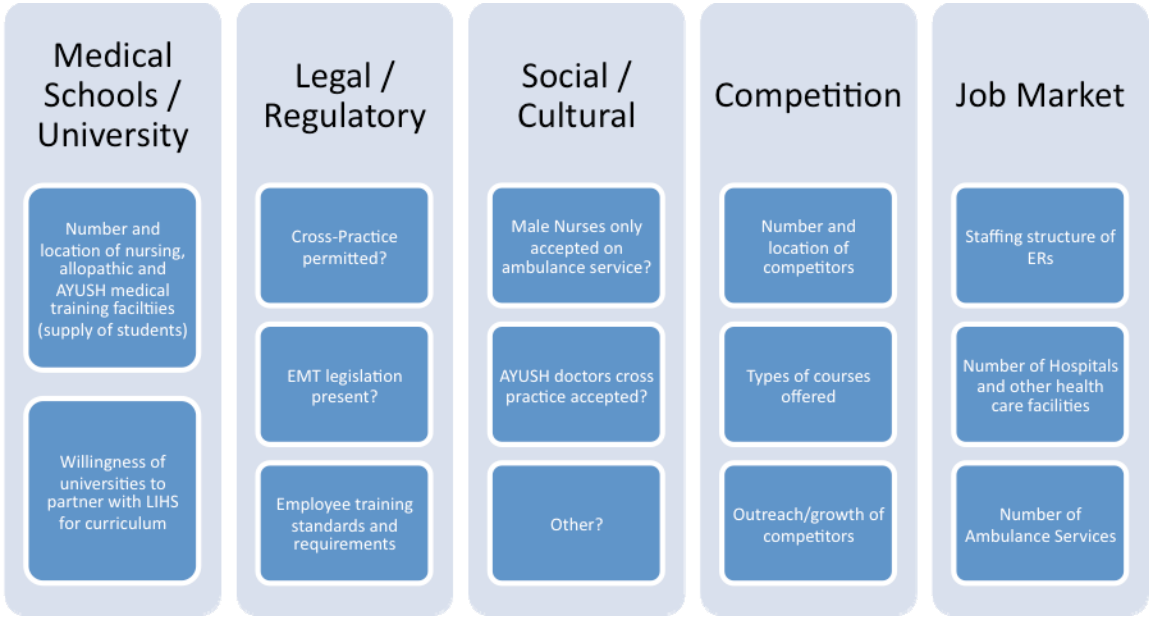
Both the Base and Aggressive cases presented in Section 7 of this business plan incorporate the recommendation that LIHS utilize these strategic partnerships to expand into new markets with one or more of its course offerings. The Base Case strategy incorporates limited expansion into the states of Bihar, Rajasthan, Kerala) based on Dial 1298's anticipated and ongoing expansion plans (including new government tenders), select new courses in Gujarat in keeping with existing plans, and expansion of course number and type Maharashtra to

[51] Interview with Dr. Navalkar January 2010.

address perceived demand. In addition to the Base Case, the projected Aggressive Case incorporates and permanent presence and full suite of course offerings in each of these regions. In both cases, cost savings attributable to the strategy of leveraging these partnerships have been built into the financial and cost projections.

The question of what courses (and how many of them) to offer in each new market must be answered after evaluating a number of factors. The research team did not conduct a full survey of intra-India demand; accordingly, specific recommendations on type and number of courses to offer in each new market cannot be accurately proposed. While this Aggressive Case includes a viable suite of course offerings based on a preliminary evaluation of certain features of market demand, in order to determine the specific product, pricing and frequency of each course to offer in these and other new markets, LIHS should evaluate following five key demand determinants for each new market. The results of this analysis would provide a roadmap for determining the appropriate type and number of each course to offer in a new market.

Exhibit 4 – Demand Drivers



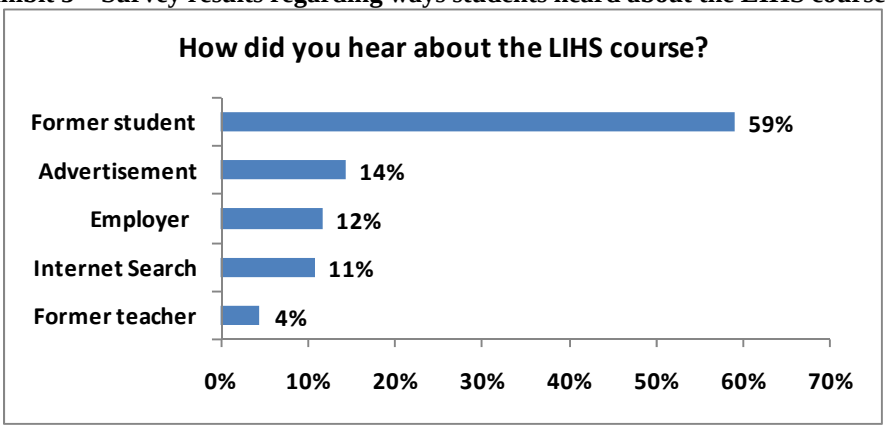
One the appropriate course offerings have been determined, the Promotional strategy for each new market must also incorporate regionally appropriate activities that will require further research to develop.

3.4. Promotion

In existing locations, LIHS' promotion strategies should focus on building confidence in LIHS and building awareness of first aid and emergency response in the general public. In new locations, LIHS' promotion strategies should focus on build brand LIHS' brand recognition and building awareness of first aid and emergency response in the general public.

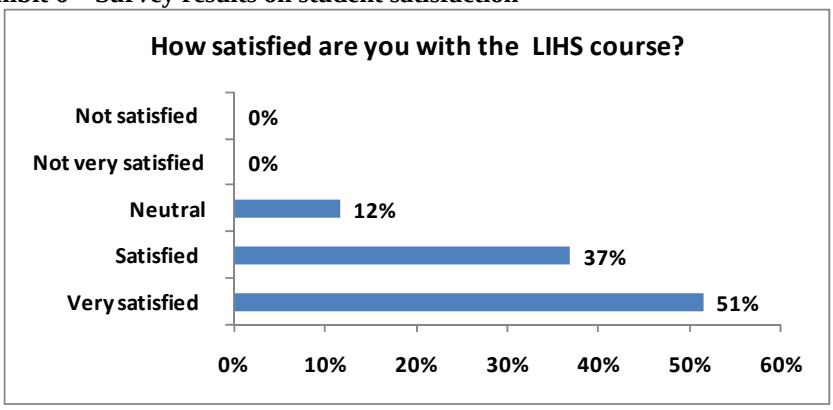
A number of paper- and web-based surveys of LIHS students were conducted to better understand the needs and perceptions of past and current students. LIHS currently does not have any concerted marketing efforts or a defined promotion strategy. For instance, exhibit 5 below shows that while 59% of students heard about the course through word-of-mouth, significantly smaller percentages heard about LIHS through other media.

Exhibit 5 – Survey results regarding ways students heard about the LIHS course



With regards to student satisfaction, the survey results in exhibit 6 below clearly demonstrate that overall satisfaction is high, with 51 percent of students very satisfied and 37 percent of students satisfied with the course. Therefore, significant structural changes do not need to be made to the course curricula.

Exhibit 6 – Survey results on student satisfaction



However, student feedback in exhibit 7 below indicates that communication and outreach efforts have significant room for improvement. For example, 72 percent of students would seek recertification with LIHS and students also noted that they would be more likely to seek recertification with LIHS if reminded through email and text. As another example, LIHS' current web-based presence is minimal, as illustrated by the quote "*I looked for three months before I found the website*." Finally, LIHS could stand to significantly benefit by developing a marketing plan to formalize their relationships with medical institutions as well as other public and private sector entities.

Exhibit 7 – Select student feedback

Student 1: *"Contact students periodically for workshops, available placements."*

Student 2: *"Responses to queries have been late; information on the website isn't accurate."*

Student 3: *"I looked for 3 months before I found the website."*

Student 4: *"Medical students should take this course in their final year; LIHS should actively advertise in and around medical schools in Mumbai to raise greater awareness."*

Targeted marketing and promotion strategies have been developed for four main audiences – all segments of society, medical professionals, Samaritans, and partners – based on survey findings and conversations with students, hospitals, and LIHS staff. See table 10 below for details.

Table 10 – Marketing and promotion strategies

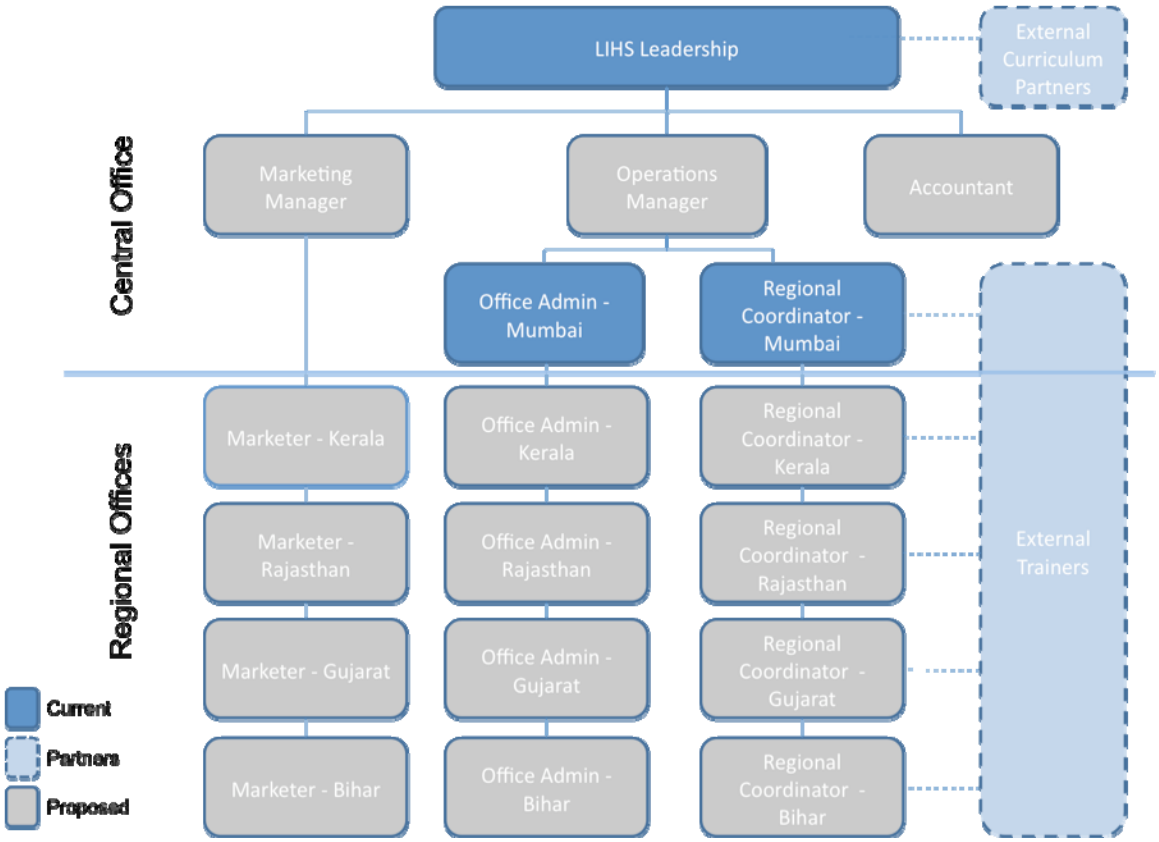
Audience	Goal	Strategy
All	**Build awareness of first aid and emergency response**	Hold disaster management drills in partnership with public sector agencies, publish white papers and editorials, and engage in cross-promotion strategies with Dial 1298.
	Build LIHS brand recognition	Publicize student testimonials on quality and satisfaction and publicize statistics on outreach and impact.
	Increase # of students enrolling from information on website	Improve search engine optimization, streamline the website to make it easy for students to determine which courses are appropriate for them, enable online enrolment, and include video testimonials from past students on quality and satisfaction.
Medical Professionals	**Increase # of students enrolled in the PGDEMS course**	Create an LIHS ambassador program to increase word-of-mouth by recruiting high-performing past students to serve as campus representatives. Build a community around LIHS ambassadors to serve as professional and personal networking opportunities. Publicize LIHS' competitive edge, including significantly smaller class sizes and longer practical training.
	Increase # of students seeking AHA recertification	Alert past students when their AHA certifications are close to expiring and offer discounts to repeat students. This will require upgrading the current MIS in order to keep updated records for all students.
Samaritans	**Increase repeat business from corporate clients**	Create multi-year contracts for clients that regularly sponsor employee training.
Partners	**Build partnerships with hospitals**	Expand the PGDEMS internship program with additional highly-respected hospitals, work with human resources at hospitals to supply LIHS graduates for full time positions, and work with emergency departments of hospitals to supply new students to LIHS for training.
	Build partnerships with AYUSH medical schools	Identify AYUSH medical schools that are open to cross-practicing and establish a strong campus presence through information session and ambassador program to build word-of-mouth.

4. ORGANIZATION

LIHS' current organization is very lean. Through leveraging partnerships both with external training curriculum partners and part-time trainers, LIHS has been able to keep fixed costs to a minimum while reaching thousands of students. To expand both in Mumbai and regionally, additional fulltime staff will need to be hired to institutionalize current LIHS processes and expand marketing efforts. Even with the proposed increase in staff, it will maintain a lean operational profile that will allow it maintain long-term net income margins after expansion and maximum pro-bono outreach.

The proposed organization structure below includes both a proposed expansion in Mumbai, and regional expansion. Regional staff will be added as LIHS expands its course offering in each region. The associated costs of additional full-time employees have been incorporated into our financial projections (see section 7 for more details).

Exhibit 8: Illustrative Organizational Chart



Central Office Staff - Mumbai

LIHS Leadership – LIHS Leadership and founding members are responsible for the strategic vision and overall execution of course offerings. They also help develop curriculum for new and existing course offerings and managing external partnerships.

Marketing Lead – The marketing lead is responsible for developing and monitoring LIHS' overall marketing plan for each segment. They are also responsible for executing promotional plans in Mumbai.

Operations Manager – The central operations manager is in charge of day to day operations of the LIHS. They are the responsible for LIHS' performance in Mumbai and regionally as it expands.

Accountant – The account is responsible for maintain all financial records, advising on pricing activities, and managing day to day expenses.

Regional Office Staff

Regional Coordinators – Regional coordinators are responsible for administering their region's specific course offerings. This includes participating in the promotion of course offerings as determined by the regional marketing plan, organizing each course, and teaching when an external trainer is not necessary or cannot be found.

Regional Marketer **–** The regional marketer's role is to determine a marketing plan along with the central marketing manager that is specific to his or her own region. In additional to developing the regional marketing plan he or she is responsible for leading promotional activities with support of the regional coordinators.

Administrators **–** The administrator's main responsibility is maintaining financial and marketing data. This includes creating quarterly financial reports

External Partners

External Trainers – External Trainers are part-time professionals that offer to lead courses on an as-needed basis.

External Curriculum Partners **–** External curriculum partners, like the AHA or NYP help to develop high quality training programs and course content. See appendix A6 for a detailed discussion of existing and opportunities for new partnerships.

5. OPERATIONS

LIHS' mission is to empower health care providers and communities to save lives during medical emergencies and disasters. To achieve its mission, LIHS has developed several protocol based training programs with its local and international partners, and now actively promotes, organizes, and administers numerous courses throughout the year reaching hundreds of medical and non-medical professionals. To expand both in Mumbai and regionally across India, it must work to further institutionalize its processes developing reliable systems for routine tasks and information management.

Program Development Activities
Since LIHS' inception it has developed several programs with the help of international partners such as the AHA and NYP focused on meeting the needs of medical professionals and good Samaritans throughout the emergency medical system in Mumbai. This includes programs for hospital medical staff, first responders, and community members.

While the necessary skills required to address an emergency medical situation are similar from region to region, the availability of the professionals who possess those skill sets and the regulations that guide them can vary significantly. Thus, understanding what the local market and the applicable regulations are critical for the development of appropriate courses that will meet the needs of our target students.

This market variety and diverging regulatory frameworks present a unique challenge for course development as LIHS expands. Program development should therefore be based on the expansion decision model elaborated in section 3.3 that allows LIHS to create a complete modular set of course offerings that it can use across a number of states. This will allow LIHS to plug in different standard modules to meet the

needs of each market, and expand with minimum specific course development. For example, in Gujarat, secondary school graduates are allowed to become EMTs working in Ambulances. In other states in India, nurses are usually staffed as EMTs. To meet the needs of each of these markets a modular EMT course should be designed that allows nurses to skip some basic modules that would have been covered while obtaining their nursing degree.

Promotion and Marketing Activities

As a nascent industry in India, emergency medical training is heavily dependent on promotional activities that can raise awareness of it importance. Currently these activities are limited to free workshops for AYUSH medical students, advertisements in medical journals, and a web presence. If LIHS is to meet its expansion targets, it will need to significantly increase its marketing and promotional activities as described in section 3.

Maintaining a detailed customer database is crucial to supporting the success of these activities. Through maintaining a detailed profile of each student including their contact information, their educational background, how they heard about the course, etc. LIHS can continue to refine its market segmentation and stay in contact with former students to market additional courses that may meet their needs and remind them of any pending recertification requirements. This customer database should be supplemented with student surveys and a promotions database so that the success of various promotion programs can be measured and refined.

Course Organization and Administration Activities

To maximize outreach with limited resources LIHS has leveraged the expertise of external part-time instructors in addition to the full-time staff of LIHS who split their time between course instruction and other activities. This model has allowed LIHS flexibility to offer courses according to student demand without incurring fixed costs from idle full-time employees.

Classroom space has also been optimized to limit fixed costs. On-site training facilities are booked and rented only when needed. In addition, training is often facilitated off-site utilizing the client's facilities at little or no cost. Partnerships have also been established with hospitals to provide subsidized training for a few of their employees in return for utilizing their training facilities. These arrangements allow LIHS to increase its impact with minimal costs.

Another potential source of cost savings could come from utilizing excess capacity in PGDEMS course to teach shorter term courses like BLS. For example, the weekend that PGDEMS student are fulfilling their BLS requirements, other students could join the class to leverage open seats. The feasibility of this depends highly on course scheduling and excess capacity of long duration courses.

Performance Benchmarks

A number of Key Performance Indicators (KPIs) have been identified, detailed below, that could be used to continuously monitor and evaluate the marketing efforts, operations, and impact of LIHS. These KPIs have been selected based on LIHS' business model and could be used to ensure that LIHS is achieving its mission of training medical and non-medical professional in emergency medicine. To track these metrics, a combination of databases, surveys, and financial analysis will need to be maintained.

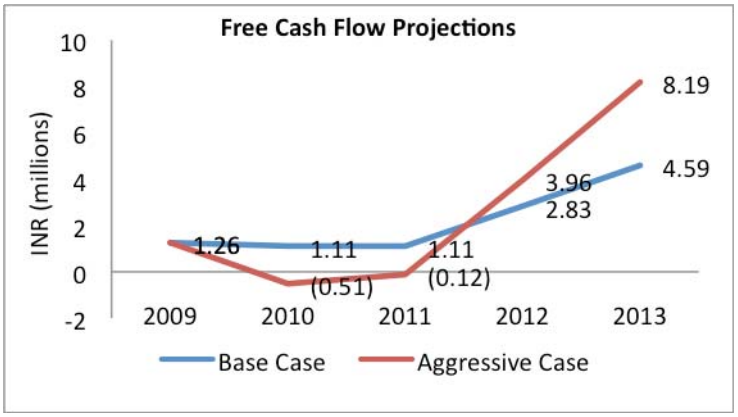
Table 11: Key Performance Indicators

Focus Area	Question	Indicator	Support Systems Required
Marketing Effort	How effective has a promotional strategy been?	Student return rate in relation to rupees spent	Promotion Database, Student Database
	How many students return for recertification?	Recertification Rate	Student Database
	How many students return for	Number of students who	Student Database

	more than one course?	have taken more than one course over total unique students	
Operations	How financially sustainable is this course offering?	Operating and net income margins by course and region	Financial Reports, Student Database
	How well is the course meeting the student's expectations?	Student Satisfaction Rates	Student Surveys
	How well am I using available part-time instructors?	Utilization rate of instructors	Course Schedule History
	How well am I utilizing available classroom space	Utilization rate of classroom	Course Schedule History
Impact	How many students has LIHS reached?	Number of people trained by segment	Student Database
	How many donations have been given out?	Rupees spent on donations	Financial Reports
	How many pro-bono students have been reached	Number of First Responder students plus any additional sponsored students	Student Database
	How useful is this course to students?	Post Graduation satisfaction	Post Graduate Student Surveys

6. OUTPUTS AND IMPACT

Exhibit 9: Free Cash Flow (INR Million)



Emergency medicine is a nascent and developing medical specialty in India and LIHS was created to help lead the development of the field by creating high standards for quality emergency medical training in India. The short term impact of LIHS' work is the development of a cadre of medical professionals well-trained in emergency medical courses, including PGDEMS, BLS, ACLS, PALS, and ITLS, as well as the development of a cadre of First Responders in the Samaritan community. The long term impact of their work is the reduction in avoidable deaths and illnesses due to improved access to emergency medical care in India.

Training low-income community members in emergency response is an integral part of LIHS' mission. Pro bono outreach may include conducting First Responders workshops for local communities, providing scholarships for course fees, giving donations to local health-related projects, holding city-wide emergency drills, and sponsoring medical residency programs. In the past it has partnered with Tata-AIG to fund its pro bono outreach. In our expansion plan, significant surplus from internal business operations will allow LIHS to fund pro bono outreach without requiring external funding. However, there is a trade-off in the early years of expansion between pro bono outreach and growth, as illustrated in table 12 below.

In the base case, LIHS maintains positive free cash flow throughout the expansion period with pro bono outreach growing in each subsequent year as surplus grows. In the aggressive case, there is negative free cash flow in 2010 and 2011 but significant surplus in 2012 and 2013. LIHS will have to look for alternative sources of funding for its pro bono outreach in the early years of expansion, but in later years will have significant surplus to scale up its pro bono outreach. In the first year of expansion, we assume that all surplus is spent on pro bono outreach through the First Responders course. In subsequent expansion years, we assume a maximum of 3-4 courses held per week in each region, with a class size of 30 students per course, and a cost of INR 1,500 per course. By 2013, in the base case LIHS is projected to train over 4,000 medical professionals, close to 11,500 Samaritans, and over 6,000 individuals through its pro bono workshops. In the aggressive case, LIHS is projected to train over 7,000 medical professionals, over 17,000 Samaritans, and close to 19,000 individuals through its pro bono workshops. See table 12 below for details.

Table 12 – Projected total outreach: base case and aggressive case

	Base Case				*Aggressive Case*			
	2010	**2011**	**2012**	**2013**	**2010**	**2011**	**2012**	**2013**
Medical professionals	638	2,400	3,306	4,142	638	3,738	5,332	7,100
Samaritans	5,840	6,700	10,200	11,460	5,840	10,060	15,310	17,190
Community (pro bono workshops)	4,680	4,680	4,680	6,240	0	0	18,720	18,720
Total Outreach	**11,158**	**13,780**	**18,186**	**21,842**	**6,478**	**13,798**	**39,362**	**43,010**

The long term impact of LIHS' work is the reduction in avoidable deaths and illness due to improved access to quality emergency medicine. Over time, LIHS' outreach will contribute to the improvement of a number of health indicators, which are listed in Table 13 below.

Table 13: Long-Term Impact

Health Statistics[52]	2010*
Life expectancy at birth - female	64
Life expectancy at birth - male	62
Probability of dying under five (per 1,000 live births)	76
Probability of dying between 15 and 60 years – female (per 1,000 live births)	203
Probability of dying between 15 and 60 years – male (per 1,000 live births)	276

*Most recent available data as of 2008
Source: WHO World Health Statistics 2008

7. FINANCIAL PLAN

7.1. Financial performance to date

LIHS currently applies a cost-based pricing model to most courses to establish the fee structure for its courses and maintains student enrollment levels at above the break-even point, especially for the long-duration PDGEMS course. This strategy has allowed the organization to ensure that all fee-based courses generate a surplus, and has allowed LIHS to maintain a small positive net result each year since inception. Total revenue has growth rapidly, driven primarily by the PGDEMS and the ASCL/BLS courses. Between 2007 and 2009 revenues from course fees doubled from 4 million INR to over 8 million INR. Fixed operating expenses have remained stable despite growth in the number of course offered. This will change as LIHS launches a more aggressive expansion strategy and makes required investments into required

[52] http://www.who.int/countries/ind/en/

physical and human capital. However, projected growth in revenues will significantly outpace growth in fixed operating expenses, given the low capital intensity of the institution's business model.

7.2. Strategies for expansion

The research team has designed two potential expansion strategies for LIHS: The base case is driven by the scaling up of operations in Mumbai, partnering with the Red Cross in Gujarat to offer and EMT course, and providing 1298 with doctor and driver training services in three other states. The aggressive case includes everything in the base case and involves establishing permanent operations in four new states. Three year projections have been made starting in 2011. Under both scenarios revenue and variable costs are driven by the number and combination of courses offered in each year; fixed costs are driven by the number of permanent offices established in a given year and growth in the LIHS management team in Mumbai and in new expansion states. The research team's estimations of relevant revenues and expenses are based on consultations with the LIHS management, detailed assessment of the institution's current financial and operational structure, as well as the market analyses detailed above. The rationale behind expansion projections as well as estimates of key sources of revenues and expenses can be found below. More detailed explanations of all other calculations can be found in appendix A2.

I. Base Case

The base case involves a significant increase in the number of courses already offered in Mumbai and the addition of two new revenue streams: EMT courses in Gujarat, and training of Dial 1298 ambulance staff in Kerala, Rajasthan, and Bihar where the company has secured government contracts for operation of state hospital ambulances. Primary and secondary research had led the research team to identify a large untapped demand for LIHS' courses in Mumbai, in both the medical as well as the Samaritan segments. Projections also incorporate growing future demand for training of Dial 1298 staff, and are based on consultations with the company's team.

II. Aggressive Case

Under the aggressive case, LIHS will scale-up existing operations in Mumbai , provide training to Dial 1298 staff (as per the base case) and, in addition, launch permanent operations in Kerala, Rajasthan, Bihar, and Gujarat starting in 2011. Starting permanent operations will involve establishing offices in all four states, hiring full-time regional staff, and immediate launching of select courses, with consideration for the size of state-specific demand and legislation.

Table 14: Course expansion projections: All Regions

	Base Case				Aggressive Case			
Course	**2010**	**2011**	**2012**	**2013**	**2010**	**2011**	**2012**	**2013**
PGDEMS	2	3	4	4	2	5	8	8
EMT-Basic	0	2	3	3	0	2	6	10
Dial 1298	0	84	110	130	0	84	110	130
ACLS/BLS	15	21	31	46	15	60	89	133
PALS	1	1	2	2	1	1	6	6
ITLS	2	2	2	3	2	2	6	7
FABLS-Demo	100	100	150	150	100	150	225	225
LIHS-FABLS	35	70	105	158	35	105	158	237
AHA-FABLS	7	15	30	40	7	23	45	60
HS-AED	4	4	4	4	4	8	8	8
Total	**166**	**302**	**441**	**540**	**166**	**440**	**661**	**824**

III. Course Expansion Projections: Rationale

PGDEMS – Given past difficulties in filling up additional PDGEMS courses (beyond the current two courses offered per year), growth projections for this course are conservative. However, marketing efforts should allow LIHS to expand the annual number of PDGEMS course in Mumbai from 2 to 4 by 2013. In

addition to Mumbai, the states of Gujarat and Bihar have the highest concentration of AYUSH doctors - the primary market for PGDEMS courses. Thus, in the aggressive case PDGEMS will also be offered in both of these states starting in 2011. We do not recommend launching the course in Kerala, as local state regulation does not currently permit cross-practice by AYUSH doctors.

EMT-Basic – We expect early demand for this course to come from Gujarat in light of the more permissive regulation recently passed in the state. Also, given the changing regulatory landscape in India, recent recognition of EM by the Medical Council of India, and untapped market segments which can benefit from this course (identified in the Market Segments section), national demand for EMT should grow significantly in the near-term. Given these factors, we estimate that under the base case LIHS will be able to launch EMT courses in Mumbai by 2012; under the aggressive scenario EMT courses will be launched and in all five states.

Dial 1298 training – Total estimated demand for these courses is based on projected ambulance growth rates reported by Dial 1298. We have calculated the total number of personnel to be trained in the coming three years assuming 3 shifts per ambulance, each consisting of one driver and one doctor, and incorporating a 17 percent attrition rate. The total number of course is calculated assuming that each course will contain 18 people. These projections are the same for both growth strategies.

ACLS/BLS – Our research indicates that the principal target market for this course consists of MDs, MBBS doctors, and nurses. To approximate demand, we use the number of students graduating each year for each of the three professions as a proxy for the size of potential market. This is a conservative estimate, as it does not include the existing stock of doctors and nurses. We estimate that LIHS can capture a 20 percent share of the new graduates market by 2013; these calculations serve as the basis for growth in the base case. The aggressive case assumes gradual launching of the course across the other four states for which target market share is calculated based on the same methodology.

PALS **–** Given the low historical demand for PALS, we do not anticipate significant growth in this course. In the base case, we anticipate that LIHS can increase the number of courses in Mumbai to two 2012. In the aggressive case, given a heightened marketing effort, we see potential 4 courses by 2012. We have assumed that one course can also be offered in the other four states by 2012.

ITLS – Similarly, ITLS has not been a popular course to date, with only two courses conducted in the last fiscal year. Given its low profit margins and limited demand, we do not recommend making a concerted effort to popularizing it in the coming years. We anticipate that LIHS can maintain and slightly expand the current number of courses offered in Mumbai, and begin to offer the course in Gujarat by 2012. In the aggressive case, we assume limited market penetration in the other states given the large presence of allopathic doctors. In the future, we recommend that LIHS seek official ITLS certification from the ITLS International as competitors Symbiosis, IIEMS, and EMRI have done. This will allow LIHS to issue student certificates independently of Symbiosis, and thus increase operating margins for the course.

FABLS **–** The number of projected course offerings for FABLS Demo and LIHS FABLS courses is limited by capacity rather than demand. As outlined in the Market section, the size of the potential target market for this course is virtually unlimited and consists of diverse segments such as teachers, police personnel, firefighters, disaster management personnel and safety officers at factories. With dedicated marketing personnel, we estimate that LIHS can increase these course offerings by 50 percent each year in the base case and an additional 50 percent over the base case in the aggressive case.

AHA FABLS – Growth of the AHA FABLS course will follow a similar trajectory, albeit from a much smaller base. We predict that targeted marketing efforts to reach multinational corporations and other international institutions which must comply with international safety regulations should allow LIHS to substantially grow this course in Mumbai and under the aggressive scenario across the other four states. For instance, there are currently 800 multinational corporations operating in Mumbai. Reaching just 5 percent per year of these companies would allow LIHS to conduct up to 40 workshops per year.

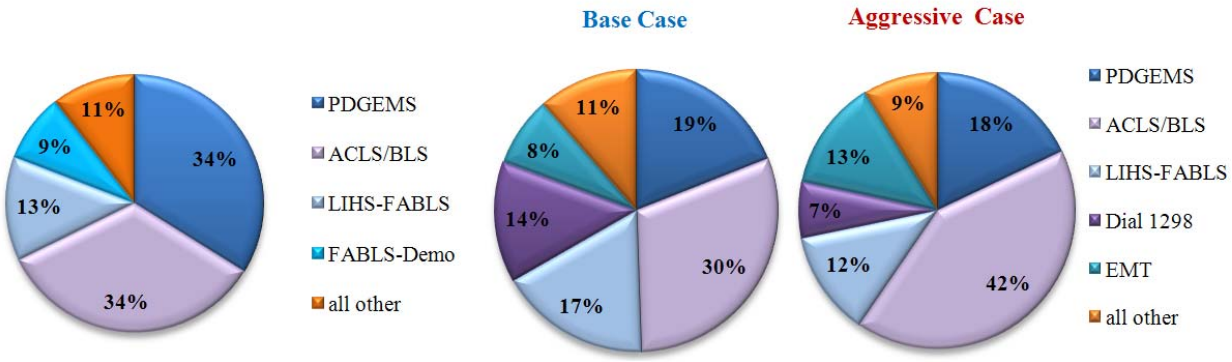
HS AED – This has not been a popular course in the past. Given our limited information on the market for this course, we have assumed status quo in the base case, slight growth in Mumbai in the aggressive case, and launching of one course across other states by 2013.

IV. Per Course Revenues and Expenses

Revenues per student (i.e. course fees) and the numbers of students per course have been kept constant at their current levels for all courses, with the exception of the three new courses to be offered in the next year: Dial 1298 driver and doctor training, and EMT basic. We have maintained the required 6 to 1 instructor to student ratio for all courses with the exception of FABLS-Demo. Variable expenses such as trainer cost of salaries study materials have also been kept at their current levels. The only significant new expense added to hands-on course is depreciation expense, which has been calculated based on total depreciation of medical equipment for a given year and distributed across hand-on courses in proportion to estimated total annual mannequin usage. Gross profit margins for each course vary significantly, with the least human capital and/or least equipment- intensive courses being the most profitable.

The highest revenue generating courses remain PDGEMS and ACLS/BLS under both expansion scenarios; however, given the launching and significant scaling-up of ACLS/BLS across all regions in the aggressive case, this course will become the primary driver of LIHS' revenue.

Exhibit 10: Current and Projected revenue share by course



V. Required Capital Investment

Future capital expenditures associated with expansion are assumed in year $Y_{(t-1)}$ (the prior year) as we anticipate that revenues from the prior year will be used to finance expansion in the subsequent year. The largest capital investment associated with expansion is attributed to the purchase of mannequins and other medical equipment. Mannequin requirements have been calculated based on the number of projected total annual lecture days of hands-on courses, with PDGEMS, and ACLS being the most equipment-intensive courses. In the base case, we assume that one mannequin will be required in each of the three states where Dial 1298 training is being offered. We estimate that LIHS will require a total of 9 and 21 additional mannequins over the next three years, in the base and aggressive case respectively. Investment in office equipment applies to the aggressive case only; in the base case it is assumed that LIHS will operate out of 1298 facilities in all locations except Mumbai.[53]

[53] Mannequins are valued at 125,000 INR; other fixed assets capital outlay per each new office is based on the current value of fixed assets owned by LIHS, excluding the ambulance.

Table 15: Total Capital Investment Projections

	Base Case				Aggressive Case			
	2010	**2011**	**2012**	**2013**	**2010**	**2011**	**2012**	**2013**
Office Equipment	0	0	0	n/a	1,001,600	0	0	n/a
# of new mannequins	5	2	2	n/a	10	6	5	n/a
Medical Equipment	625,000	250,000	250,000	n/a	1,250,000	750,000	625,000	n/a
Total	**625,000**	**250,000**	**250,000**		**2,251,600**	**750,000**	**625,000**	

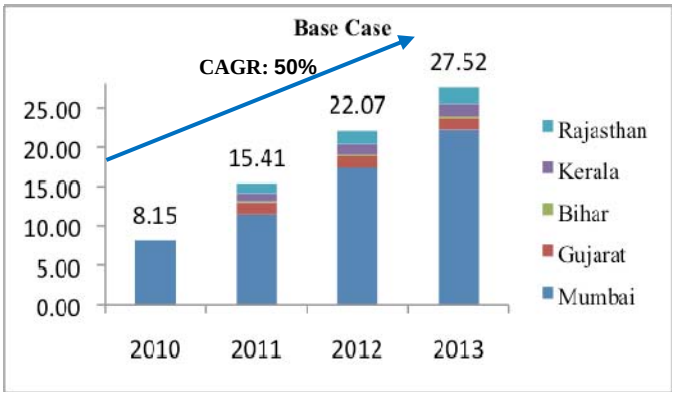
VI. Operating Expenses

Rapid projected growth will require LIHS to significantly expand the current team of permanent employees, especially at headquarters in Mumbai, and to increase the current advertising budget. Thus, the largest incremental operational costs attributed to expansion are staff salaries, and advertising expenses (per region, in the aggressive model). In Mumbai, we recommend hiring a full time Business Manager, and a Marketing Manager who will oversee operations across all states. In the aggressive expansion case, we recommend hiring a permanent Branch Manager to oversee regional operations. Advertising expenses are calculated at 2 percent of total revenue per region. Growth operating expenses will be greatly outpaced by growth in course revenues as fixed costs are spread across a larger number of courses. Hence, the investments outlined above will not bear great on the overall bottom line beyond 2011 – the first year of operational restructuring under both scenarios.

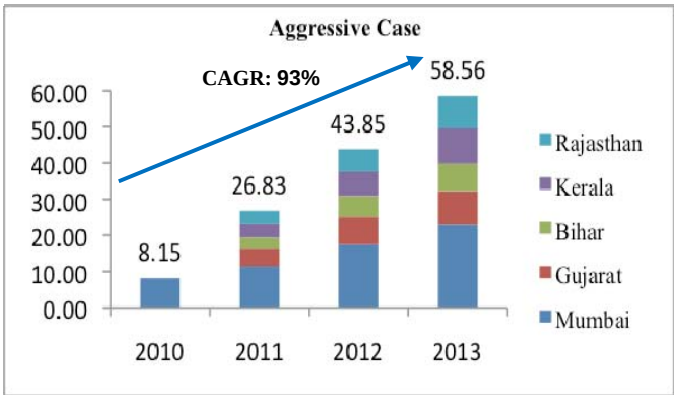
VII. Financial Projections

Beyond 2011, when large expenditures are expected to finance expansion, by 2013 the net income margin grows to a healthy 13 percent in the base case and 15 percent in the aggressive case. Free cash flows (liquidity available after subtraction of required capital expenditures from net surplus) grow to INR 4.6 million in the base case and 8.2 million in the aggressive case. LIHS can choose to use these cash flows to fund charitable work or to invest into even more rapid expansion. As noted above, large required capital expenditures required in the aggressive strategy will result in negative free cash flows in 2010, and 2011. However, pursuing the aggressive strategy will allow LIHS to grow close to 100 percent faster and to generate over INR 3 million more in net income under the aggressive growth strategy over the base case.

Exhibit 11: Revenues by region (INR Million)



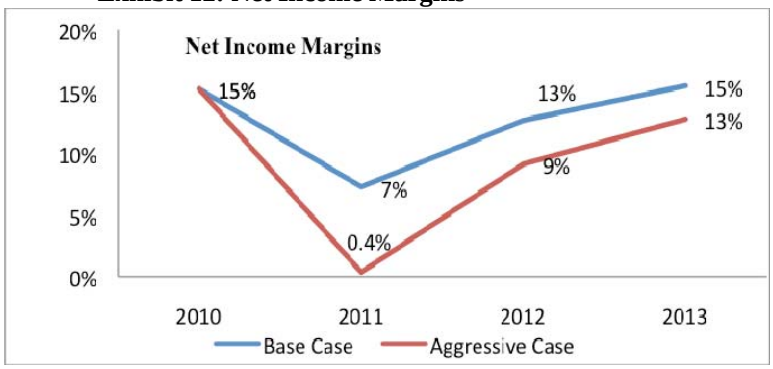
Growing at a strong compound annual rate of 50% over three years will allow LIHS to generate a significant surplus, sufficient to finance the proposed investment under this strategy.



The aggressive strategy will allow LIHS to grow very rapidly at a compound annual growth rate of 93%. However, higher capital investment requirements in 2011 may necessitate external funding.

As exhibit 11 above demonstrates, we expect LIHS to be able to generate a compounded annual growth in revenues of 50 percent in the base, and 93 percent in the aggressive case. The 'guaranteed' revenue stream generated by internal demand for 1298 training accounts for an average of 15 percent of total revenues in the base and an average of 8 percent in the aggressive case.

Exhibit 12: Net Income Margins



We expect net income margins to fall in 2011, especially in the aggressive case, owing to the increases in fixed costs in the new regions when offices will be set up and staff hired. However, as LIHS expands its course offerings and student outreach in subsequent years, these fixed costs will be spread over a larger base, leading to a rise in net income margins.

8. RISK ANALYSIS AND MITIGATION

Table 16: Risks and Mitigation Strategies

Risk	Potential Impact	Likelihood	Mitigation Strategy
Market Risks			
Low Barriers allow for the possibility of new entrants to our target markets.	Low	Medium	We believe our target markets are large enough to support a number of new emergency medical training organizations. However, new entrants will be monitored incorporated into our pricing and expansion strategies
Weak market demand for LIHS course offerings	High	Low	All market estimates have been conservatively constructed based on all available information. In addition LIHS is focused on increased promotion and marketing efforts to ensure enrollment of its course offerings.
A portion of LIHS' target Samaritan market would involve procuring government contracts	Low	High	All market projections for these Samaritan market segments have been heavily discounted and in some cases not included in financial projects. The success of LIHS is not dependent on government contracts

Dial 1298 loses government contracts to expand geographically	Medium	Low	A majority of revenues are generated from other clients
Execution Risks			
Strength of partnership with LIHS fades	Medium	Low	The partnership between LIHS and Dial 1298 is long-standing and built not only on personal relationship but also on mutual interests. Both parties see each other as critical to their mutual success With that said, while LIHS depends on some cost sharing with Dial 1298, it generates sufficient revenue to operate on its own.
New personnel are not up to the task of generating new business	High	Medium	The expansion of LIHS is reliant on the strength of its current and new staff. A rigorous standard will be applied to any new hires.
LIHS is unable to develop partnerships with additional highly-regarded hospitals as part of the practical training component of the PGDEMS course	High	Medium	Securing partnerships with top-tier hospitals is crucial since it is a major driver of student selection of LIHS' PGDEMS program over other institutions LIHS should leverage the partnerships that Dial 1298 has built with area hospitals in its target markets for expansion

9. APPENDICES

A1: Methodology

Core elements of our research approach include:

- Literature review
- Institutional and stakeholder analysis
- Collection of qualitative and quantitative data from primary sources
- Analysis and information review

I. Literature Review/Desk Research
The literature review provided a knowledge base, and shaped our strategy for field-based data collection and interview priorities. Areas of research included:

A. State of the health sector in India

- Key indicators of health, levels of access to medical care
- Dominant health and training associations operating in India (both private and public)

Sources: International health statistics databases: WHO, IMF, UNDP Human Development Reports; DFID and USAID; Ministry of Health (India), Library of Congress; medical associations in India: American Academy of Emergency Medicine in India (AAEMI), Public Health Foundation of India (PHFI), National Emergency Number Association (NENA).

B. International best practices for training programs and evolution of the sector in the U.S.
Sources: Academic and industry journals, World Health Organization, Ministries of Health, interviews, and review of case studies

C. Review of relevant case studies

- Healthcare social enterprise programs in India and other emerging markets

Sources: Columbia Business School Dial 1298 case study; Monitor Group report on the social enterprise sector in India; LifeSpring Group case studies on Indian health sector.

D. Preliminary market analysis

- Research on existing medical training services in India.
- Identified and analyzed key competitors in the private medical-training sector; focused on other accredited international training organizations in India which offer AHA courses.
- Assessed existing partnerships between comparable medical training institutes and public and private degree-granting and accreditation institutions, partnerships with international organizations, hospitals and associations on paramedical courses (including non-EMT courses i.e. nurses, therapists, technicians, ancillary personnel)
- Research on new high-potential regions for expansion (macroeconomic indicators, health indicators, competitor presence, potential demand, presence of medical institutions and associations).
- Assessed current client base and identified potential new target markets.

II. Institutional and stakeholder analysis
The institutional analysis served to better understand LIHS' existing business model and to identify key financial and operational variables that will affect the expansion strategy. This was conducted through a review of all relevant documentation as well as interviews with key staff in Mumbai. The stakeholder analysis allowed us to gauge the relative influence of each actor on the success of future expansion. Finally, an overall SWOT analysis of the institution was done to evaluate its current positioning in the medical training market.

A. Financial assessment

- Reviewed LIHS' financial projections and current financial position, and financial and productivity evolution since inception.

B. Operational assessment

- Reviewed LIHS' current curriculum: course content, accreditations offered, number of courses currently offered, duration of courses, fee structure, and productivity figures.
- Reviewed existing partnerships: details of MOUs between LIHS and AHA, LIHS and NY Presbyterian, partnerships with local hospitals and medical institutes.
- Evaluated human resources capacities and constraints

C. Stakeholder Analysis

- Assessed key individuals and institutions currently associated with the work of LIHS: their relative level of influence over LIHS operations, and the extent of their implication in the proposed expansion strategy. (See Stakeholder Analysis Matrix ANNEX 1.)

D. SWOT analysis

- Sustainability, competitive advantage, and value proposition of the current model.
- Evaluated value-added through current partnerships with external actors.
- Program quality assessment in relation to competitors' product offering.
- Feasibility considerations for geographic, product range, and reach expansion.
- Identification of potential risks to expansion (competition, regulation, financial constraints etc.)

III. Collection of qualitative and quantitative data from primary sources

Tasks for the January field included:

- Mapping out specific operational and financial opportunities for and constraints to expansion: geographic, financial, and competition-related;
- Preliminary interviews with Ziqitza and LIHS founders and staff;
- Assessment of LIHS management's vision for expansion;
- Preliminary interviews with LIHS' local partners, hospitals and universities in Mumbai;
- Mapping out possible frameworks for expansion based on qualitative and quantitative data collected, interviews with management and secondary research.

During the March visit, the team augmented initial field research by conducting follow-up interviews with students, relevant stakeholders and competitors. Tasks included:

- Debriefing client on preliminary findings, obtain feedback, discuss relevance of findings to the business plan for expansion;
- Evaluation of variables that drive financial elements of the business plan: demand, cost and efficiency analysis of current operation;
- Assessing the feasibility of the various expansion possibilities determined by data collected during the January visit;
- Collection of supplemental qualitative and quantitative data (student surveys).

Interview Schedule

	Informant Group	**Interview Purpose/Issues to Cover**
NYC	LIHS USA partners: New York Presbyterian, American Heart Association **NYPH contacts: Dr. Satchit Balsari, Dr. Heidi Cordi**	• Assess NYPH's current partnership with LIHS and possibilities for deeper collaboration in the future; discuss options for formalizing/institutionalizing the current relationship. • Collect data on current best practices in emergency training • Discuss proposal for formal recognition of paramedics in India currently being prepared by Dr. Balsari, Ziqitza founders, and other EMT experts. Proposal will be presented to the Indian Ministry of Health in March 2010.

Mumbai	LIHS/ Ziqitza founders and management staff **LIHS founders:** 1. Dr. Paresh Navalkar 2. Dr. Ajay Desai 3. Dr. Percy Barucha	• Clarify founders' mission for expansion of training services • Obtain all information relevant to the institutional analysis (fin. statements, MOUs, business plan); Seek clarification of all critical data if necessary; • Assess internal financial and operational constraints to expansion; • Discuss priorities in geographic expansion; • Identify courses that could become larger revenue generator in the future.
	LIHS program graduates (individual interviews; surveys)	• Assess students' satisfaction with courses; • Inquire about career opportunities in the paramedical field and the extent to which LIHS courses have assisted students in finding jobs; • Gauge demand for alternative courses and note recommendations students may have with regard to improving the current curriculum.
	Acumen India 1.Vikram Raman: portfolio manager 2.Yehia Houry: Acumen Fellow	• Assess vision for LIHS expansion.
	Key competitors* Malabar Institute of Medical Sciences Amrita Institute of Medical Sciences IIEMS	• Assess competitors' expansion plans, current market positioning, cost structure.
	Hospitals in Mumbai	• Assess possibilities for collaboration. • Evaluate potential for new local partnerships • Gauge demand for emergency training programs • Assess plans for EM and potential for LIHS graduates to find employment.
	LIHS partners in India: 1.P.D. Hinduja National Hospital 2.EMS Mumbai	• Assess current partnerships and investigate potential for deeper collaboration. • Evaluate partners' views on LIHS expansion plans and willingness to contribute to/participate in the expansion process.

*The value of these interviews was dictated by competitors' willingness to disclose confidential information to the SIPA team.

A2: Detailed financials

Please see the following nine pages.

Comment

Table A2.0: Profit And Loss and Free Cash Flow statements (INR Million)

		Total							
		Current	Base			Current	Aggressive		
		2010	2011	2012	2013	2010	2011	2012	2013
Course Revenue	A2.5	8.15	15.41	22.07	27.52	8.15	26.83	43.85	58.56
Course Costs									
Rent	A2.8	(0.28)	(0.89)	(1.20)	(1.46)	(0.28)	(1.37)	(2.01)	(2.54)
Salaries	A2.8	(1.95)	(4.63)	(6.47)	(7.69)	(1.95)	(7.19)	(11.62)	(14.74)
Student costs	A2.8	(2.47)	(4.09)	(5.87)	(7.73)	(2.47)	(8.74)	(14.14)	(19.55)
Depreciation	A2.7	(0.12)	(0.17)	(0.21)	(0.24)	(0.12)	(0.26)	(0.38)	(0.47)
Other Course Costs	A2.8	(0.68)	(0.50)	(0.76)	(0.89)	(0.68)	(0.70)	(1.45)	(2.18)
Total Course Costs		(5.49)	(10.28)	(14.50)	(18.02)	(5.49)	(18.26)	(29.60)	(39.47)
Gross Profit		**2.66**	**5.12**	**7.57**	**9.50**	**2.66**	**8.58**	**14.26**	**19.09**
Other Revenue	A2.12	0.10	0.17	0.20	0.22	0.10	0.23	0.31	0.38
Fixed Costs									
Rent	A2.11, A2.12	(0.09)	(0.12)	(0.12)	(0.12)	(0.09)	(0.60)	(0.60)	(0.60)
Salaries	A2.11, A2.12	(0.56)	(1.82)	(1.82)	(1.82)	(0.56)	(4.10)	(4.10)	(4.10)
Utilities	A2.11, A2.12	(0.10)	(0.23)	(0.23)	(0.23)	(0.10)	(0.58)	(0.58)	(0.58)
Advertising	A2.11, A2.12	(0.03)	(0.32)	(0.47)	(0.59)	(0.03)	(0.61)	(1.02)	(1.37)
Depreciation	A2.10	(0.37)	(0.06)	(0.06)	(0.06)	(0.37)	(0.29)	(0.29)	(0.29)
Other	A2.11, A2.12	(0.24)	(1.02)	(1.46)	(1.83)	(0.24)	(1.95)	(3.16)	(4.22)
Income Available for Distribution		**1.38**	**1.72**	**3.60**	**5.07**	**1.38**	**0.68**	**4.81**	**8.31**
Minority Interest (Partner Share)	50% of PGDEMS contribution in Mumbai only	(0.12)	(0.59)	(0.78)	(0.78)	(0.12)	(0.58)	(0.78)	(0.78)
Net Income		**1.26**	**1.13**	**2.82**	**4.29**	**1.26**	**0.10**	**4.03**	**7.52**
Net Income		**1.26**	**1.13**	**2.82**	**4.29**	**1.26**	**0.10**	**4.03**	**7.52**
Non Cash Items									
New Capital Outlay - Office Equipment	A2.10	0.00	0.00	0.00	0.00	(1.00)	0.00	0.00	0.00
New Capital Outlay - Mannequins	A2.6, A2.7	(0.63)	(0.25)	(0.25)	0.00	(1.25)	(0.75)	(0.63)	0.00
Depreciation - Office Equipment	A2.10	0.37	0.06	0.06	0.06	0.37	0.29	0.29	0.29
Depreciation - Mannequins	A2.7	0.12	0.17	0.21	0.24	0.12	0.24	0.26	0.38
Free Cash Flow for Social Outreach		**1.11**	**1.11**	**2.83**	**4.59**	**(0.51)**	**(0.12)**	**3.96**	**8.19**

Comment

Table A2.1 - Number of Courses

Course	Comment	Total							Mumbai						
		Current	Base			Aggressive			Current	Base			Aggressive		
		2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013
PGDEMS	In addition to Mumbai, the states of Gujarat and Bihar have the highest concentration of AYUSH doctors - the primary market for PGDEMS courses. We assume that we can grow our Mumbai offerings from 2 to 4 by 2012 in the base case, while in the aggressive case also gaining a foothold in both the other states in 2011.	2	3	4	4	5	8	8	2	3	4	4	3	4	4
EMT-Basic	We expect early demand for this course to come from Gujarat in light of regulation in the state. Following this, we see demand for EMT courses in all states where 1298 has a presence, including Mumbai (Maharashtra) in our aggressive case.	0	2	3	3	2	6	10	0	0	1	1	0	1	2
1298 Driver Training	Taking 3 shifts per amublance, each consisting of one driver and one doctor, plus 16.66% attrition, we calculated the number of drivers and doctors required in each state based on 1298 growth rates. Assuming 18 people per course gives us the number of courses. This is the same for the base and aggressive case.	0	42	55	65	42	55	65	0	0	0	0	0	0	0
1298 Doctor Training		0	42	55	65	42	55	65	0	0	0	0	0	0	0
ACLS/BLS	Our research has shown us that the main groups of individuals who opt for the ACLS/BLS courses are MDs, MBBS doctors and nurses. We take the numbers of each type of medical professional graduating each year and assume LIHS can capture 20% of this market by 2013. This gives us a market size by year and state. In our base case we target the market in Maharashtra only, while in the aggressive case extend our scope to the other states.	15	21	31	46	60	89	133	15	21	31	46	21	31	46
PALS	LHIS has conducted a single PALS course in the current year. We anticipate that, with a focus on schools as one of the major non-medical clients, two courses can be conducted in Mumbai in 2012 and 2013 in the base case. In the aggressive case, with heightened marketing efforts and a dedicated individual available to pursue institutional clients, we hope to double this and conduct 4 courses in 2012 and 2013. We do not anticipate great demand for this course beyond Mumbai.	1	1	2	2	1	6	6	1	1	2	2	1	2	2
ITLS	LIHS has coneducted two ITLS courses in the current year. Given the low margins and lackluster demand for this course, we do not recommend a concerted effort on popularizing it in the coming years. However, we anticipate that LIHS can keep up the trend and conduct the same number of courses in the two coming years in mumbai, with an additional course in 2013 and some limited market penetration in the other states given the presence of allopathic doctors. In the base case we envision conducting courses in Gujarat while in the aggressive case we envision penetrating the rest of the states in 2012.	2	2	2	3	2	6	7	2	2	2	3	2	2	3
FABLS-Demo	Course offerings for all FABLS courses are limited by capacity rather than demand. As outlined in our Markets section, our target markets for this course are teachers, police personnel, firefighters, disaster management personnel and safety officers at factories. The sizes of all of these markets are significant. With dedicated marketing personnel, we believe it is shall not be a great stretch to increase course offerings by 50% year on year in the base case, as we have projected. For the aggressive case, we bring down our growth rates but still anticipate higher demand.	100	100	150	150	150	225	225	100	100	150	150	100	150	150
LIHS-FABLS		35	70	105	158	105	158	237	35	70	105	158	70	105	158
AHA-FABLS		7	15	30	40	23	45	60	7	15	30	40	15	30	40
AHA-HS-AED	This is also not a popular course and the target audience is fluid. Without much information on the recipients of this cousre, we anticipate the current trend to continue over the next three years in the base case.	4	4	4	4	8	8	8	4	4	4	4	4	4	4
First-Responders		0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:		**166**	**302**	**441**	**540**	**440**	**661**	**824**	**166**	**216**	**329**	**408**	**216**	**329**	**409**

Course	Gujarat							Bihar						
	Current	Base			Aggressive			Current	Base			Aggressive		
	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013
PGDEMS	0	0	0	0	1	2	2	0	0	0	0	1	2	2
EMT-Basic	0	2	2	2	2	2	2	0	0	0	0	0	1	2
1298 Driver Training	0	0	0	0	0	0	0	0	3	3	4	3	3	4
1298 Doctor Training	0	0	0	0	0	0	0	0	3	3	4	3	3	4
ACLS/BLS	0	0	0	0	10	15	22	0	0	0	0	5	7	11
PALS	0	0	0	0	0	1	1	0	0	0	0	0	1	1
ITLS	0	0	0	0	0	1	1	0	0	0	0	0	1	1
FABLS-Demo	0	0	0	0	13	19	19	0	0	0	0	13	19	19
LIHS-FABLS	0	0	0	0	8	14	20	0	0	0	0	9	13	20
AHA-FABLS	0	0	0	0	2	4	5	0	0	0	0	2	4	5
AHA-HS-AED	0	0	0	0	1	1	1	0	0	0	0	1	1	1
First-Responders	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:	**0**	**2**	**2**	**2**	**37**	**59**	**73**	**0**	**6**	**6**	**8**	**37**	**55**	**70**

Course	Kerala							Rajhastan						
	Current	Base			Aggressive			Current	Base			Aggressive		
	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013
PGDEMS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EMT-Basic	0	0	0	0	0	1	2	0	0	0	0	0	1	2
1298 Driver Training	0	17	23	27	17	23	27	0	22	29	34	22	29	34
1298 Doctor Training	0	17	23	27	17	23	27	0	22	29	34	22	29	34
ACLS/BLS	0	0	0	0	13	20	30	0	0	0	0	11	16	24
PALS	0	0	0	0	0	1	1	0	0	0	0	0	1	1
ITLS	0	0	0	0	0	1	1	0	0	0	0	0	1	1
FABLS-Demo	0	0	0	0	12	19	19	0	0	0	0	12	18	18
LIHS-FABLS	0	0	0	0	9	13	20	0	0	0	0	9	13	19
AHA-FABLS	0	0	0	0	2	4	5	0	0	0	0	2	3	5
AHA-HS-AED	0	0	0	0	1	1	1	0	0	0	0	1	1	1
First-Responders	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:	**0**	**34**	**46**	**54**	**71**	**106**	**133**	**0**	**44**	**58**	**68**	**79**	**112**	**139**

Comment

Revenues per student and the numbers of students per course have been kept constant at their current levels for all courses except 1298 driver and doctor training. For these two courses, we have taken 18 sutdents per course as the optimal number based on our assessment, as well as in order to retain the 6 student to 1 instructor ratio

Table A2.2 - Revenue Per Student

	Total						
	Current	Base			Aggressive		
	2010	2011	2012	2013	2011	2012	2013
PGDEMS	26,100	26,100	26,100	26,100	26,100	26,100	26,100
EMT-Basic	25,000	25,000	25,000	25,000	25,000	25,000	25,000
1298 Driver Training	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1298 Doctor Training	2,250	2,250	2,250	2,250	2,250	2,250	2,250
ACLS/BLS	6,500	6,500	6,500	6,500	6,500	6,500	6,500
PALS	6,000	6,000	6,000	6,000	6,000	6,000	6,000
ITLS	5,000	5,000	5,000	5,000	5,000	5,000	5,000
FABLS-Demo	100	100	100	100	100	100	100
LIHS-FABLS	1,500	1,500	1,500	1,500	1,500	1,500	1,500
AHA-FABLS	2,000	2,000	2,000	2,000	2,000	2,000	2,000
AHA-HS-AED	2,500	2,500	2,500	2,500	2,500	2,500	2,500
First-Responders	0	0	0	0	0	0	0

Table A2.3 - Students Per Course

	Total						
	Current	Base			Aggressive		
	2010	2011	2012	2013	2011	2012	2013
PGDEMS	50	50	50	50	50	50	50
EMT-Basic	30	30	30	30	30	30	30
1298 Driver Training	18	18	18	18	18	18	18
1298 Doctor Training	18	18	18	18	18	18	18
ACLS/BLS	28	28	28	28	28	28	28
PALS	22	22	22	22	22	22	22
ITLS	28	28	28	28	28	28	28
FABLS-Demo	50	50	50	50	50	50	50
LIHS-FABLS	20	20	20	20	20	20	20
AHA-FABLS	20	20	20	20	20	20	20
AHA-HS-AED	10	10	10	10	10	10	10
First-Responders	10	10	10	10	10	10	10

Comment

Table A2.4 - Number of Students

		Total							Mumbai							Gujarat							Bihar							Kerala							Rajhastan						
		Current	Base			Aggressive			Current	Base			Aggressive			Current	Base			Aggressive			Current	Base			Aggressive			Current	Base			Aggressive			Current	Base			Aggressive		
		2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013
PGDEMS		0	150	200	200	250	400	400	0	150	200	200	150	200	200	0	0	0	0	50	100	100	0	0	0	0	50	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EMT-Basic		0	60	90	90	60	180	300	0	0	30	30	0	30	60	0	60	60	60	60	60	60	0	0	0	0	0	30	60	0	0	0	0	0	30	60	0	0	0	0	0	30	60
1298 Driver Training		0	756	990	1,170	756	990	1,170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	54	72	54	54	72	0	306	414	486	306	414	486	0	396	522	612	396	522	612
1298 Doctor Training		0	756	990	1,170	756	990	1,170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	54	72	54	54	72	0	306	414	486	306	414	486	0	396	522	612	396	522	612
ACLS/BLS		0	588	868	1,288	1,680	2,492	3,724	0	588	868	1,288	588	868	1,288	0	0	0	0	280	420	616	0	0	0	0	140	196	308	0	0	0	0	364	560	840	0	0	0	0	308	448	672
PALS	A2.1, A2.3	0	22	44	44	22	132	132	0	22	44	44	22	44	44	0	0	0	0	0	22	22	0	0	0	0	0	22	22	0	0	0	0	0	22	22	0	0	0	0	0	22	22
ITLS		0	56	56	84	56	168	196	0	56	56	84	56	56	84	0	0	0	0	0	28	28	0	0	0	0	0	28	28	0	0	0	0	0	28	28	0	0	0	0	0	28	28
FABLS-Demo		0	5,000	7,500	7,500	7,500	11,250	11,250	0	5,000	7,500	7,500	5,000	7,500	7,500	0	0	0	0	650	950	950	0	0	0	0	650	950	950	0	0	0	0	600	950	950	0	0	0	0	600	900	900
LIHS-FABLS		0	1,400	2,100	3,160	2,100	3,160	4,740	0	1,400	2,100	3,160	1,400	2,100	3,160	0	0	0	0	160	280	400	0	0	0	0	180	260	400	0	0	0	0	180	260	400	0	0	0	0	180	260	380
AHA-FABLS		0	300	600	800	460	900	1,200	0	300	600	800	300	600	800	0	0	0	0	40	80	100	0	0	0	0	40	80	100	0	0	0	0	40	80	100	0	0	0	0	40	60	100
AHA-HS-AED		0	40	40	40	80	80	80	0	40	40	40	40	40	40	0	0	0	0	10	10	10	0	0	0	0	10	10	10	0	0	0	0	10	10	10	0	0	0	0	10	10	10
First-Responders		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total:		**0**	**9,128**	**13,478**	**15,546**	**13,720**	**20,742**	**24,362**	**0**	**7,556**	**11,438**	**13,146**	**7,556**	**11,438**	**13,176**	**0**	**60**	**60**	**60**	**1,250**	**1,950**	**2,286**	**0**	**108**	**108**	**144**	**1,178**	**1,784**	**2,122**	**0**	**612**	**828**	**972**	**1,806**	**2,768**	**3,382**	**0**	**792**	**1,044**	**1,224**	**1,930**	**2,802**	**3,396**

Table A2.5 - Total Revenues: (INR Million)

		Total							Mumbai							Gujarat							Bihar							Kerala							Rajhastan						
		Current	Base			Aggress			Current	Base			Aggress			Current	Base			Aggress			Current	Base			Aggress			Current	Base			Aggress			Current	Base			Aggress		
		2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013
PGDEMS		2.77	3.92	5.22	5.22	6.53	10.44	10.44	2.77	3.92	5.22	5.22	3.92	5.22	5.22					1.31	2.61	2.61					1.31	2.61	2.61															
EMT-Basic			1.50	2.25	2.25	1.50	4.50	7.50			0.75	0.75		0.75	1.50		1.50	1.50	1.50	1.50	1.50	1.50						0.75	1.50						0.75	1.50						0.75	1.50
1298 Driver Training			0.76	0.99	1.17	0.76	0.99	1.17																0.05	0.05	0.07	0.05	0.05	0.07		0.31	0.41	0.49	0.31	0.41	0.49		0.40	0.52	0.61	0.40	0.52	0.61
1298 Doctor Training			1.70	2.23	2.63	1.70	2.23	2.63																0.12	0.12	0.16	0.12	0.12	0.16		0.69	0.93	1.09	0.69	0.93	1.09		0.89	1.17	1.38	0.89	1.17	1.38
ACLS/BLS		2.76	3.82	5.64	8.37	10.92	16.20	24.21	2.76	3.82	5.64	8.37	3.82	5.64	8.37					1.82	2.73	4.00					0.91	1.27	2.00					2.37	3.64	5.46					2.00	2.91	4.37
PALS	A2.2, A2.4	0.17	0.13	0.26	0.26	0.13	0.79	0.79	0.17	0.13	0.26	0.26	0.13	0.26	0.26						0.13	0.13						0.13	0.13						0.13	0.13						0.13	0.13
ITLS		0.29	0.28	0.28	0.42	0.28	0.84	0.98	0.29	0.28	0.28	0.42	0.28	0.28	0.42						0.14	0.14						0.14	0.14						0.14	0.14						0.14	0.14
FABLS-Demo		0.70	0.50	0.75	0.75	0.75	1.13	1.13	0.70	0.50	0.75	0.75	0.50	0.75	0.75					0.07	0.10	0.10					0.07	0.10	0.10					0.06	0.10	0.10					0.06	0.09	0.09
LIHS-FABLS		1.07	2.10	3.15	4.74	3.15	4.74	7.11	1.07	2.10	3.15	4.74	2.10	3.15	4.74					0.24	0.42	0.60					0.27	0.39	0.60					0.27	0.39	0.60					0.27	0.39	0.57
AHA-FABLS		0.30	0.60	1.20	1.60	0.92	1.80	2.40	0.30	0.60	1.20	1.60	0.60	1.20	1.60					0.08	0.16	0.20					0.08	0.16	0.20					0.08	0.16	0.20					0.08	0.12	0.20
AHA-HS-AED		0.11	0.10	0.10	0.10	0.20	0.20	0.20	0.11	0.10	0.10	0.10	0.10	0.10	0.10					0.03	0.03	0.03					0.03	0.03	0.03					0.03	0.03	0.03					0.03	0.03	0.03
First-Responders																																											
Total:		**8.15**	**15.41**	**22.07**	**27.52**	**26.83**	**43.85**	**58.56**	**8.15**	**11.45**	**17.36**	**22.22**	**11.45**	**17.36**	**22.97**		**1.50**	**1.50**	**1.50**	**5.04**	**7.81**	**9.31**		**0.18**	**0.18**	**0.23**	**2.83**	**5.75**	**7.54**		**0.99**	**1.35**	**1.58**	**3.80**	**6.68**	**9.73**		**1.29**	**1.70**	**1.99**	**3.72**	**6.26**	**9.01**

Comment

Table A2.6 - Mannequins Needed

Note: We assume that mannequins are only required for PGDEMS, ACLS, 1298 Driver and 1298 Doctor training courses

		Total							Mumbai							Gujarat							Bihar						
		Current	Base			Aggressive			Current	Base			Aggressive			Current	Base			Aggressive			Current	Base			Aggressive		
		2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013
Total PGDEMS		50	75	100	100	125	200	200		75	100	100	75	100	100		0	0	0	25	50	50		0	0	0	25	50	50
Total ACLS Days		45	63	93	138	180	267	399		63	93	138	63	93	138		0	0	0	30	45	66		0	0	0	15	21	33
Total Days for both courses		95	138	193	238	305	467	599		138	193	238	138	193	238		0	0	0	55	95	116		0	0	0	40	71	83
Number of current mannequins	Based on depreciation rates in the financial statements	4	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0
Mannequins needed per day based on 2009		**23.8**	6	8	10	14	20	25		6	8	10	7	8	10		0	0	0	2	4	5		0	0	0	2	3	3
Total 1298 Driver Training days			84	110	130	84	110	130		0	0	0	0	0	0		0	0	0	0	0	0		6	6	8	6	6	8
Total 1298 Doctor Training days			126	165	195	126	165	195		0	0	0	0	0	0		0	0	0	0	0	0		9	9	12	9	9	12
Total Days for both courses			210	275	325	210	275	325		0	0	0	0	0	0		0	0	0	0	0	0		15	15	20	15	15	20
1298 Courses Mannequins needed	In the base case, we assume that we will need 1 mannequin in each of the three states where 1298 training is being offered. In the aggressive case, we reason that since we are purchasing mannequins for other courses, these can be utilized for 1298 courses as well hence additional mannequins exclusively for 1298 use will not be required.		3	3	3	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		1	1	1	0	0	0
Total Mannequins needed			**9**	**11**	**13**	**14**	**20**	**25**		**6**	**8**	**10**	**7**	**8**	**10**		**0**	**0**	**0**	**2**	**4**	**5**		**1**	**1**	**1**	**2**	**3**	**3**

		Kerala							Rajhastan						
		Current	Base			Aggressive			Current	Base			Aggressive		
		2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013
Total PGDEMS			0	0	0	0	0	0		0	0	0	0	0	0
Total ACLS Days			0	0	0	39	60	90		0	0	0	33	48	72
Total Days for both courses			0	0	0	39	60	90		0	0	0	33	48	72
Number of current mannequins	Based on depreciation rates in the financial statements		0	0	0	0	0	0		0	0	0	0	0	0
Mannequins needed per day based on 2009			0	0	0	2	3	4		0	0	0	1	2	3
Total 1298 Driver Training days			34	46	54	34	46	54		44	58	68	44	58	68
Total 1298 Doctor Training days			51	69	81	51	69	81		66	87	102	66	87	102
Total Days for both courses			85	115	135	85	115	135		110	145	170	110	145	170
1298 Courses Mannequins needed	In the base case, we assume that we will need 1 mannequin in each of the three states where 1298 training is being offered. In the aggressive case, we reason that since we are purchasing mannequins for other courses, these can be utilized for 1298 courses as well hence additional mannequins exclusively for 1298 use will not be required.		1	1	1	0	0	0		1	1	1	0	0	0
Total Mannequins needed			**1**	**1**	**1**	**2**	**3**	**4**		**1**	**1**	**1**	**1**	**2**	**3**

Table A2.7 - Mannequin Depreciation (INR Million)

Note: We assume that mannequins are only required for PGDEMS, ACLS, 1298 Driver and 1298 Doctor training courses

		Total							Mumbai							Gujarat							Bihar						
		Current	Base			Aggressive			Current	Base			Aggressive			Current	Base			Aggressive			Current	Base			Aggressive		
		2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013
Mannequin Depreciation	Taken from the financial statements	15%	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0
Mannequin Cost		0.13	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0
Depreciation per mannequin		0.02	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0
Depreication for:																													
PGDEMS			0.06	0.08	0.08	0.11	0.16	0.15		0.06	0.08	0.08	0.07	0.08	0.08					0.02	0.04	0.04					0.02	0.04	0.03
ACLS/BLS			0.05	0.07	0.11	0.15	0.22	0.32		0.05	0.07	0.11	0.06	0.07	0.11					0.02	0.04	0.05					0.01	0.02	0.02
1298 Driver Training			0.02	0.02	0.02																			0.01	0.01	0.01			
1298 Doctor Training			0.03	0.03	0.03																			0.01	0.01	0.01			
Total Annual Depreciation			**0.17**	**0.21**	**0.24**	**0.26**	**0.38**	**0.47**		**0.11**	**0.15**	**0.19**	**0.13**	**0.15**	**0.19**					**0.04**	**0.08**	**0.09**		**0.02**	**0.02**	**0.02**	**0.04**	**0.06**	**0.06**

		Kerala							Rajhastan						
		Current	Base			Aggressive			Current	Base			Aggressive		
		2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013
Mannequin Depreciation	Taken from the financial statements		0	0	0	0	0	0		0	0	0	0	0	0
Mannequin Cost			0	0	0	0	0	0		0	0	0	0	0	0
Depreciation per mannequin			0	0	0	0	0	0		0	0	0	0	0	0
Depreication for:															
PGDEMS															
ACLS/BLS						0.04	0.06	0.08					0.02	0.04	0.06
1298 Driver Training			0.01	0.01	0.01					0.01	0.01	0.01			
1298 Doctor Training			0.01	0.01	0.01					0.01	0.01	0.01			
Total Annual Depreciation			**0.02**	**0.02**	**0.02**	**0.04**	**0.06**	**0.08**		**0.02**	**0.02**	**0.02**	**0.02**	**0.04**	**0.06**

Table A2.8 - Variable Costs per course (Excluding mannequin depreciation) (INR Million)

	Comment	PGDEMS	EMT-Basic	1298 Driver Training	1298 Doctor Training	ACLS/BLS	PALS	ITLS	FABLS-Demo	LIHS-FABLS	AHA-FABLS	AHA-HS-AED	First-Responders
Rent													
Rent - Lecture space		0.04		0.00	0.01	0.01	0.01	0.01				0.00	
Rent - Practicals venue		0.02											
Rent - Exam venue		0.01											
Salaries	A ratio of 6 students to an instructor has been maintained for all courses except FABLS.												
Salary - Senior Instructor		0.03	0.08	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Salary - Junior Instructor		0.11		0.01	0.01	0.02	0.01	0.01		0.01	0.01		
Salary - Visiting Instructor			0.13										
Salary - Practicals Instructor		0.38											
Salary - Examiners		0.02	0.01										
Student Costs													
Student Costs - Food		0.01		0.00	0.00	0.02	0.01	0.01				0.00	
Student Costs - Manual and certificate			0.08			0.08	0.05	0.04		0.00	0.01	0.01	
Student Costs - Uniforms			0.05										
Student Costs - Study materials		0.01	0.00	0.00	0.00	0.01	0.00	0.01		0.00	0.00		
Student Costs - Certification/Partner Fees		0.25	0.02					0.04					
Other Variable Costs													
OVC - Stationery		0.02	0.02			0.00	0.00	0.00		0.00	0.00		
OVC - Advertising			0.10										
OVC - Depreciation on medical equipment													
OVC - Medical equipment repair and maintenance		0.00				0.00		0.00				0.00	
OVC - Course travel costs									0.00	0.00	0.00		
Total Variable Costs per course		**0.89**	**0.46**	**0.02**	**0.03**	**0.14**	**0.09**	**0.13**	**0.00**	**0.01**	**0.02**	**0.01**	**0.00**

Comment

Table A2.9 - Total Variable Costs including mannequin depreciation (INR Million)

		Total							Mumbai							Gujarat							Bihar							Kerala							Rajhastan						
		Current	Base			Aggressive			Current	Base			Aggressive			Current	Base			Aggressive			Current	Base			Aggressive			Current	Base			Aggressive			Current	Base			Aggressive		
		2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013	2010	2011	2012	2013	2011	2012	2013
PGDEMS		2.29	2.74	3.65	3.65	4.58	7.31	7.30	2.29	2.74	3.65	3.65	2.75	3.65	3.65					0.91	1.83	1.83					0.92	1.83	1.82													
EMT-Basic			0.93	1.39	1.39	0.93	2.78	4.63			0.46	0.46		0.46	0.93		0.93	0.93	0.93	0.93	0.93	0.93						0.46	0.93						0.46	0.93						0.46	0.93
1298 Driver Training			0.72	0.93	1.10	0.69	0.91	1.07																0.06	0.06	0.07	0.05	0.05	0.07		0.29	0.39	0.45	0.28	0.38	0.45		0.37	0.49	0.57	0.36	0.48	0.56
1298 Doctor Training			1.42	1.85	2.17	1.38	1.81	2.14																0.11	0.11	0.14	0.10	0.10	0.13		0.57	0.77	0.90	0.56	0.76	0.89		0.74	0.97	1.13	0.72	0.96	1.12
ACLS/BLS		2.18	3.01	4.44	6.58	8.60	12.75	19.04	2.18	3.01	4.44	6.58	3.02	4.44	6.58					1.43	2.15	3.15					0.72	1.00	1.57					1.87	2.87	4.30					1.57	2.29	3.43
PALS	A2.1, A2.7, A2.8	0.11	0.09	0.17	0.17	0.09	0.52	0.52	0.11	0.09	0.17	0.17	0.09	0.17	0.17						0.09	0.09						0.09	0.09						0.09	0.09						0.09	0.09
ITLS		0.26	0.25	0.25	0.38	0.25	0.76	0.89	0.26	0.25	0.25	0.38	0.25	0.25	0.38						0.13	0.13						0.13	0.13						0.13	0.13						0.13	0.13
FABLS-Demo		0.07	0.07	0.10	0.10	0.10	0.15	0.15	0.07	0.07	0.10	0.10	0.07	0.10	0.10					0.01	0.01	0.01					0.01	0.01	0.01					0.01	0.01	0.01					0.01	0.01	0.01
LIHS-FABLS		0.37	0.72	1.08	1.62	1.08	1.62	2.43	0.37	0.72	1.08	1.62	0.72	1.08	1.62					0.08	0.14	0.21					0.09	0.13	0.21					0.09	0.13	0.21					0.09	0.13	0.19
AHA-FABLS		0.15	0.30	0.60	0.79	0.46	0.89	1.19	0.15	0.30	0.60	0.79	0.30	0.60	0.79					0.04	0.08	0.10					0.04	0.08	0.10					0.04	0.08	0.10					0.04	0.06	0.10
AHA-HS-AED		0.07	0.05	0.05	0.05	0.11	0.11	0.11	0.07	0.05	0.05	0.05	0.05	0.05	0.05					0.01	0.01	0.01					0.01	0.01	0.01					0.01	0.01	0.01					0.01	0.01	0.01
First-Responders																																											
Total:		**5.49**	**10.28**	**14.50**	**18.02**	**18.26**	**29.60**	**39.47**	**5.49**	**7.22**	**10.80**	**13.82**	**7.24**	**10.80**	**14.28**		**0.93**	**0.93**	**0.93**	**3.41**	**5.36**	**6.45**		**0.17**	**0.17**	**0.22**	**1.94**	**3.89**	**5.06**		**0.86**	**1.16**	**1.35**	**2.86**	**4.92**	**7.10**		**1.11**	**1.45**	**1.70**	**2.81**	**4.62**	**6.58**

Table A2.10 - Startup Capex and depreciation in each region (INR Million)

Air Conditioning	Assumed based on financial statement data	0.06
Computer Equipment		0.08
Furniture		0.11
Mobile Handset		0.00
Total		**0.25**
Average Depreciation Rate	Taken from the financial statements	23%
Depreciation		**0.06**

Table A2.11 - Regional Fixed Costs (INR Million)

	Comment	Total							Mumbai							Gujarat							Bihar							Kerala							Rajhastan						
		2010	Current	2011	Base 2012	2013	2011	Aggressive 2012	2013	2010	Current	2011	Base 2012	2013	2011	Aggressive 2012	2013	2010	Current	2011	Base 2012	2013	2011	Aggressive 2012	2013	2010	Current	2011	Base 2012	2013	2011	Aggressive 2012	2013	2010	Current	2011	Base 2012	2013	2011	Aggressive 2012	2013	2010	Current	2011	Base 2012	2013	2011	Aggressive 2012	2013
Salaries																																																
Salary - Admin manager/staff	Base Case: Assuming admin managers earn INR 23K per month. 1 each in M and G. Aggressive Case: 1 admin person earning 23K per month and 1 marketing person earning 25K per month in each region. Except M in which the head marketing person will suffice.	0.28	0.55	0.55	0.55	2.58	2.58	2.58	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.58	0.58	0.58				0.58	0.58	0.58				0.58	0.58	0.58												
Salary - Equipment maintenance specialist	Base Case: Assuming equipment specialists earn INR 7K per month. 1 each in M and G. Aggressive Case: One person in each region.	0.08	0.17	0.17	0.17	0.42	0.42	0.42	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08				0.08	0.08	0.08				0.08	0.08	0.08												
Regional Rent	Base Case: Assuming office space costs 120K annually. Only in M. G training on Red Cross premises or 1298 facilities. Aggressive Case: 120K annually in each region		0.12	0.12	0.12	0.60	0.60	0.60		0.12	0.12	0.12	0.12	0.12	0.12				0.12	0.12	0.12				0.12	0.12	0.12				0.12	0.12	0.12												
Utilities																																															
Utilities - Electricity	Base Case: 50K per region per year, based on the current 30K in Mumbai. Aggressive Case: 50K per region per year		0.10	0.10	0.10	0.25	0.25	0.25		0.05	0.05	0.05	0.05	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.05				0.05	0.05	0.05				0.05	0.05	0.05												
Utilities - Telephone	Base Case: 65K per region per year based on current 65K for Mumbai. Aggressive Case: 65K per region per year		0.13	0.13	0.13	0.33	0.33	0.33		0.07	0.07	0.07	0.07	0.07	0.07		0.07	0.07	0.07	0.07	0.07	0.07				0.07	0.07	0.07				0.07	0.07	0.07												
Utilities - Rent																																															
Advertising	2% of external revenues.		0.26	0.38	0.47	0.49	0.81	1.10		0.23	0.35	0.44	0.23	0.35	0.46		0.03	0.03	0.03	0.10	0.16	0.19				0.05	0.11	0.15				0.06	0.11	0.16												
Contingencey Expenses	0.5% of external revenues.		0.06	0.09	0.12	0.12	0.20	0.27		0.06	0.09	0.11	0.06	0.09	0.11		0.01	0.01	0.01	0.03	0.04	0.05				0.01	0.03	0.04				0.01	0.03	0.04												
General travel costs	Same as Contingency Expenses above	0.06	0.06	0.09	0.12	0.12	0.20	0.27	0.06	0.06	0.09	0.11	0.06	0.09	0.11		0.01	0.01	0.01	0.03	0.04	0.05				0.01	0.03	0.04				0.01	0.03	0.04												
Postage & Courier	Same as Contingency Expenses above		0.06	0.09	0.12	0.12	0.20	0.27		0.06	0.09	0.11	0.06	0.09	0.11		0.01	0.01	0.01	0.03	0.04	0.05				0.01	0.03	0.04				0.01	0.03	0.04												
General repairs and maintenance	5% of rent	0.00	0.01	0.01	0.01	0.03	0.03	0.03	0.00	0.01	0.01	0.01	0.01	0.01	0.01				0.01	0.01	0.01				0.01	0.01	0.01				0.01	0.01	0.01												
Staff welfare	2% of salaries		0.01	0.01	0.01	0.06	0.06	0.06		0.01	0.01	0.01	0.01	0.01	0.01		0.01	0.01	0.01	0.01	0.01	0.01				0.01	0.01	0.01				0.01	0.01	0.01												
Depreciation on office items	Base Case: W10 above for Mumbai only. Aggressive Case: All regions		0.06	0.06	0.06	0.29	0.29	0.29		0.06	0.06	0.06	0.06	0.06	0.06				0.06	0.06	0.06				0.06	0.06	0.06				0.06	0.06	0.06												
Miscallaenous	Same as Contingency Expenses above	0.03	0.06	0.09	0.12	0.12	0.20	0.27	0.03	0.06	0.09	0.11	0.06	0.09	0.11		0.01	0.01	0.01	0.03	0.04	0.05				0.01	0.03	0.04				0.01	0.03	0.04												
Total Regional Fixed Costs		**0.45**	**1.67**	**1.90**	**2.10**	**5.53**	**6.18**	**6.75**	**0.45**	**1.12**	**1.36**	**1.56**	**1.12**	**1.36**	**1.59**		**0.54**	**0.54**	**0.54**	**1.17**	**1.28**	**1.34**				**1.08**	**1.20**	**1.26**				**1.08**	**1.19**	**1.30**												

Comment

Table A2.12 - Central Other Revenue and Fixed Costs

		Current	Total Base			Total Aggress		
		2010	2011	2012	2013	2011	2012	2013
Other Revenue								
Interest income on securities	Close to current levels	0.09	0.10	0.10	0.10	0.10	0.10	0.10
Interest income on bank account	Close to current levels	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Other revenue	0.5% of external revenues	0.00	0.06	0.09	0.12	0.12	0.20	0.27
Total Other Revenue		**0.10**	**0.17**	**0.20**	**0.22**	**0.23**	**0.31**	**0.38**
Central Fixed Costs								
Salaries								
Central Salary - COO / Business Manager	1 person paid 50K per month		0.60	0.60	0.60	0.60	0.60	0.60
Central Salary - Marketing Manager	1 person paid 30K per month		0.36	0.36	0.36	0.36	0.36	0.36
Central Salary - Accountant	1 person paid 12K per month	0.20	0.14	0.14	0.14	0.14	0.14	0.14
Utilities								
Central Utilities - Electricity	Not required as included in Mumbai regional costs	0.03						
Central Utilities - Telephone	Not required as included in Mumbai regional costs	0.07						
Central Utilities - Rent	Not required as included in Mumbai regional costs	0.09						
Central Bank Charges	Close to current	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Central Postage and Courier	0.5% of revenue	0.01	0.06	0.09	0.12	0.12	0.20	0.27
Central Staff Welfare	2% of salaries	0.01	0.02	0.02	0.02	0.02	0.02	0.02
Central IT Services	1% of revenues		0.13	0.19	0.24	0.24	0.41	0.55
Central Advertising	0.5% of revenue to cover smaller advertising items targeted at LIHS rather than at particular courses such as	0.03	0.06	0.09	0.12	0.12	0.20	0.27
Central Trademark fee	1% revenue		0.13	0.19	0.24	0.24	0.41	0.55
Central Legal Fees	1% revenue	0.06	0.13	0.19	0.24	0.24	0.41	0.55
Central Audit Fees	1% revenue	0.01	0.13	0.19	0.24	0.24	0.41	0.55
Central Other Expenses	1% revenue	0.05	0.13	0.19	0.24	0.24	0.41	0.55
Central Depreciation	Not required as included in Mumbai regional costs	0.37						
Total Central Fixed Costs		**0.94**	**1.91**	**2.26**	**2.55**	**2.59**	**3.57**	**4.42**

A3: Detailed Price Analysis

	Price (INR)	Number of Students per class	Courses Offered	Course Days	Total Course Days	Students Reached	Variable Cost Per Course*	Variable Cost per Student	Gross Margin per Student	Attributable Fixed Cost**	Attributable Fixed Cost per Student	Breakeven	NI	NI per Student	Revenue	Margin (NI/Revenue)
PGDEMS	26100	50	2	25	50	100	1,145,196	22,904	12%	216,721	2,167	68	102,886	1,029	2,610,000	4%
EMT-Basic	25000	30	-	30	-	-	463,380	15,446	38%	-	-	-	-	-	-	-
1298 Driver Training	1000	18	-	2	-	-	19,020	1,057	-6%	-	-	-	-	-	-	-
1298 Doctor Training	2250	18	-	3	-	-	36,690	2,038	9%	-	-	-	-	-	-	-
ACLS/BLS	6500	28	15	3	45	420	145,294	5,189	20%	195,049	464	149	355,541	847	2,730,000	13%
PALS	6000	22	1	2	2	22	106,604	4,846	19%	8,669	394	8	16,727	760	132,000	13%
ITLS	5000	28	2	2	4	56	131,586	4,699	6%	17,338	310	58	(509)	(9)	280,000	0%
FABLS-Demo	100	50	100	1	100	5,000	678	14	86%	433,443	87	5,015	(1,273)	(0)	500,000	0%
LIHS-FABLS	1500	20	35	1	35	700	10,502	525	65%	151,705	217	156	530,742	758	1,050,000	51%
AHA-FABLS	2000	20	7	1	7	140	21,133	1,057	47%	30,341	217	32	101,727	727	280,000	36%
AHA-HS-AED	2500	10	4	1	4	40	17,239	1,724	31%	17,338	433	22	13,707	343	100,000	14%
			Total	**166**	**247**	**6,478**	**-**	**-**	**-**	**1,070,603**			**1,119,549**		**7,682,000**	**15%**

Note: All costs and revenues are based on 2009 actuals along with doctor estimates

* Variable costs include attributable depreciation of Mannequins

** Attributable fixed costs are allocated based on the number of total course days as a percentage of total days of courses (247).
Fixed costs exclude depreciation of any irregular fixed assets

A4: Market demand supplementary tables

Table A4.1: Existing allopathic doctors and number of new graduates per year in each of five Indian states, as well as a nationwide total.

Table A4.1					
State	**# Allopathic Doctors**	**MD seats/ year**	**MBBS seats/year**	**Population**	**# per 1000**
Maharashtra	96,560	449	4360	96,878,627	1.00
Kerala	37,440	326	1850	31,841,374	1.18
Bihar	37,753	205	560	82,998,509	0.45
Gujarat	42,985	599	2055	50,671,017	0.85
Rajasthan	26,592	435	1755	56,473,122	0.47
Other States	483,860	7,957	18,162	766,220,801	0.68
Total:	725,190	9,971	28,742	1,028,610,328	0.71

Source: MCI 2008 data, 2001 Indian Census

Table A4.2: Nurses in India

Table A4.2: Nurses in India as of 12/31/2007							
	# ANM	# RN	#LHV	Total	Grads /Year(a)	Population	Nurses /1000
Maharashtra	31101	90386	566	122,053	1680	96,878,627	1.26
Kerala	28378	85624	7897	121,899	1980	31,841,374	3.83
Bihar	7501	8883	511	16,895	720	82,998,509	0.20
Gujarat	36048	86584	0	143,580	480	50,671,017	2.42
Rajastan	22239	37667	850	60,756	1160	56,473,122	1.08
Other States	425691	684112	41674	1,107,180	13980	709,747,679	1.62
Total:	550,958	993,256	51,498	1,572,363	20,000	1,028,610,328	1.55

Source: Indiastat "State-wise number of nurses in India as of 12.31.2007", 2001 Indian Census

(a) Estimate based on 2004 proportion of nurses by state (Indiastat and assuming 20,000 graduates/year due to greater than 100% increase in nursing training institutes.

Table A4.3: Existing AYUSH doctors and numbers of graduates

Table A4.3: AYUSH doctors in India				
	AYUSH Total (a)	AYUSH Grads/year(b)	2001 Population	AYUSH/1000
Maharashtra	122,451	7,410	96,878,627	1.26
Kerala	26,373	986	31,841,374	0.83
Bihar	166,152	1,448	82,998,509	2.00
Gujarat	31,343	2,106	50,671,017	0.62
Rajasthan	30,450	916	56,473,122	0.54
Other States	375,157	15,413	766,220,801	0.53
Total:	751,926	27,135	1,028,610,328	1.26

(a) Source: MCI
(b) Source: Estimated from data contained in AYUSH in India 2007 report

A5: Competition

Table A5.1

Table A5.1: Emergency medical training institutions and courses offered			
Location	**Institution**	**Course**	**Partners**
Hyderabad	**GVK-EMRI**	Paramedic Training	
		First Responder Training	
		General Practitioner's Training	
		Emergency Room Physician Training	
		BLS, ACLS	AHA
		ITLS	ITLS
		Advanced Post-Graduate diploma in emergency care (2 yrs)	Stanford University, Osmania University (Hyderabad)
	Apollo Hospitals	Fellowship in emergency medicine	Royal College of General Practitioners (UK)
		EMT - Intermediate	Stanford University
		BLS, ACLS	AHA
Pune	**Oasis**	BLS, ACLS	AHA, IIEMS (India)
		PGDEMS (9 mths classroom, 3 mths hospital training)	
		EMS Basic	
	Symbiosis	BLS, ACLS	AHA
		ITLS	ITLS, American College of Emergency Physicians
		PGDEMS (9 mths classroom, 3 mths hospital training)	LA Paramedic Training Institute and Department of Transportation (USA)
	Ruby Hall	PGDEMS (9 mths classroom, 3 mths hospital training)	West Midland Ambulance Service (UK)
Ahmedabad	**Academy of Traumatology**	National Trauma Management Course	
		National Disaster Preparedness Course for Hospitals	
		BLS, ACLS	AHA
		EMT	
	Apollo Hospitals	Fellowship in emergency medicine	College of Emergency Medicine (UK)
		Certificate programme in emergency medicine (1-yr)	
		Cardiac emergency course	
		First aid training	
Kolkata	**Rabindranath Tagore International Institute of Cardiac Sciences**	Post-Graduate fellowship in emergency medicine	George Washington University, IIEMS
		Post-Graduate diploma in emergency room nursing	Netaji Subhas Open University
	Apollo Hospitals	Fellowship in emergency medicine	College of Emergency Medicine (UK)
		BLS, ACLS, PALS	AHA

Table A5.1: Emergency medical training institutions and courses offered			
Location	**Institution**	**Course**	**Partners**
Bangalore	**Apollo Hospitals**	Fellowship in emergency medicine	College of Emergency Medicine (UK)
		BLS, ACLS, PALS	AHA
		Life Savers	
Delhi	**Apollo Hospitals**	Fellow of emergency medicine	Royal College of General Practitioners (UK)
	Max Healthcare Institute	BLS, ACLS	AHA
		Airway Management	
		PALS	AHA
Salem	**Vinayaka Missions University**	BLS/ACLS	AHA
		ATLS	
		AELS	
		Common emergencies workshop	
		Critical care and toxicology	
		Emergency radiology	
		Wilderness medicine	
Kottayam	**International Institute of Emergency Medical Sciences**	BLS, ACLS	AHA
		ITLS	ITLS
		ECG & Pharmacology	
		ATLS	American College of Surgeons
		Basic and advanced pre-hospital medical care	ITLS
		International Post Graduate Fellowship in Emergency Medicine (2-yrs)	George Washington University, North Shore-Long Island Jewish Health Systems (USA)
		Certified emergency medical technician - basic (12 mths)	Bucks County Community College (USA)
Kochi	**Malabar Institute of Medical Sciences**	BLS, ACLS, PALS	AHA
		ITLS	ITLS
		Diploma in emergency medical service (6 mths classroom, 6 mths hospital training)	
	Amrita Institute of Medical Sciences	BLS, ACLS	AHA
		Pre-hospital trauma care	
Vellore	**Chistian Medical College**	Early management of trauma course	
Chennai	**Sri Ramachandra University**	BLS, ACLS	AHA
	TACT Academy	BLS, ACLS, PALS	AHA
		Neonatal advanced life support	
		Basic Assessment & Support in Intensive Care	
		Pediatric Emergency Medicine Course	
Various	**Red Cross**	Disaster Management	
		First Aid	

Exhibit A5.1: Competitive Landscape

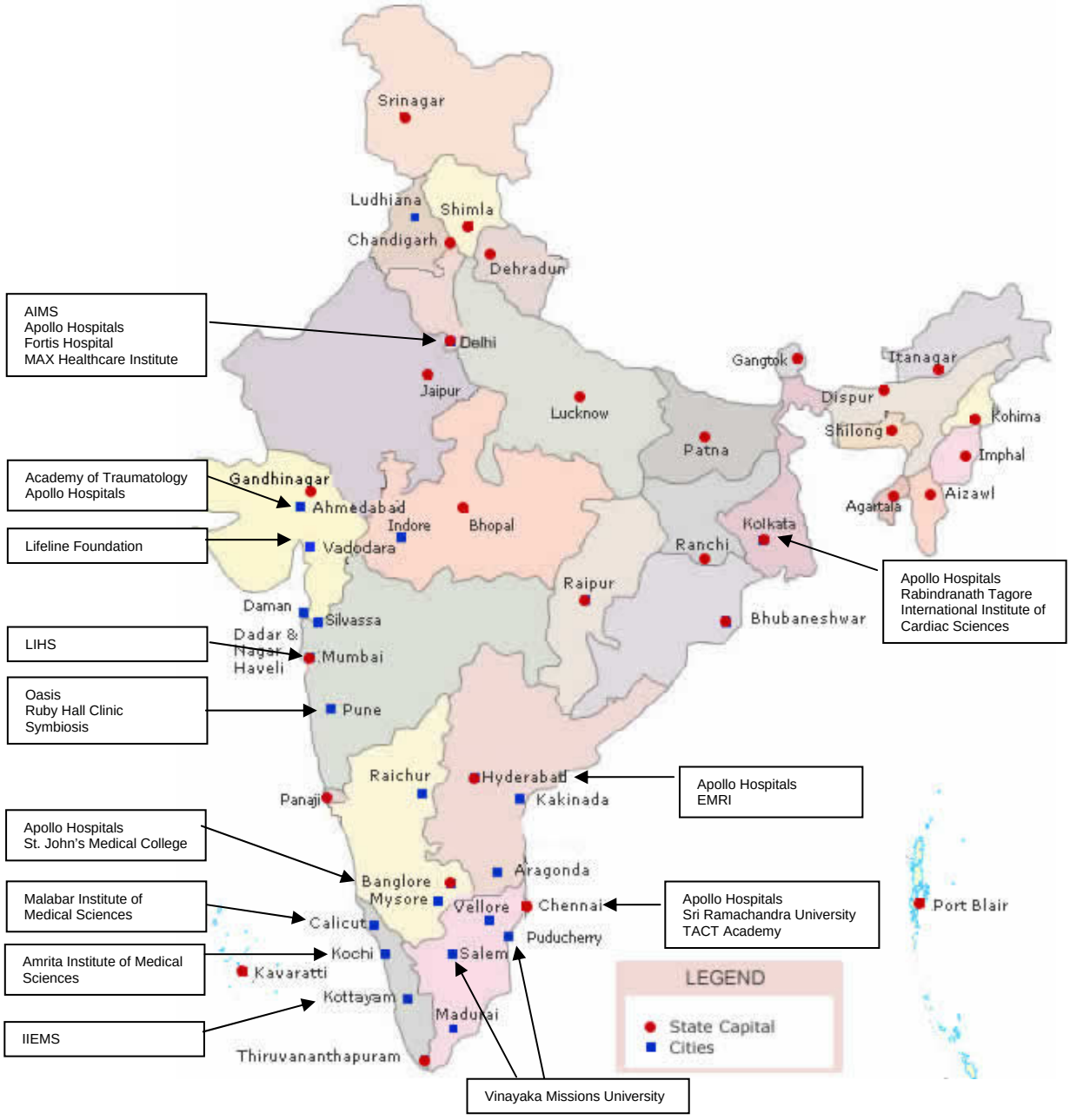


Table A5.2: AHA training centers in India

Training Institution	**Location(s)**
LIHS	Mumbai
Apollo Hospitals	Hyderabad, Chennai, Bangalore, New Delhi
Symbiosis Institute of Health Sciences	Pune
St. Johns Medical College Hospital	Bangalore
Fortis Hospital	Uttar Pradesh
IIEMS	Kottayam and multiple regional training centers
EMRI	Andhra Pradesh
TACT Academy	Tamil Nadu
Max Healthcare Institute	New Delhi
Rabindranath Tagore International Institute of Cardiac Sciences	Kolkata
Academy of Traumatology	Ahmedabad
Sri Ramachandra Medical College & Research Institute	Chennai
Global Health Private Ltd.	New Delhi
Himalayan Institute Hospital Trust	Uttarakhand

A6: Partnerships

Existing Partnerships

AHA: LIHS has signed a legal agreement with AHA to become one of eight AHA-certified international training centers in India. LIHS provides AHA-certified courses in BLS, ACLS, and PALS. Beyond payment for AHA training materials the partnership agreement does not involve any membership dues.

NYPH: LIHS has partnered with NYPH in the design and administration of the PGDEMS course. As per the original agreement, LIHS has agreed to pay a fee of Rs 5,000 per student to NYPH for the privilege of including the NYPH trademark on course certificates. However, to date, this privilege has been free of charge. NYPH doctors who assisted in designing the curriculum have continued to provide occasional pro bono training assistance to LIHS and periodically monitor the quality standards of the course.

Symbiosis Institute of Health Sciences: LIHS has partnered with Symbiosis Institute of Health Sciences, a constituent of Symbiosis International University in Pune, to provide the ITLS course. Symbiosis is a chapter of the International Trauma Life Support Organization and is the certified international training center in India. Symbiosis charges LIHS a certification fee of Rs 1,500 per student for the ITLS course.

Potential Local Partnerships

- One of LIHS' biggest edges over competitors is its partnership with Hinduja Hospital. As LIHS expands the number of PGDEMS courses offered in Mumbai and other regions, it will be necessary to form partnerships with similar large hospitals which will allow PDGEMS students to gain hands-on experience. Already today, the capacity of Hinduja hospital to accommodate PGDEMS students is strained, and students have expressed disappointment with the actual level of hands-on experience.
- Partnerships with larger public hospitals such as KEM and Nair Hospital, which also have large affiliated medical schools, would be ideal, as partner would be good because there is a huge inflow of patients and interns will get more time to spend on clinical activity. However, some students have noted that an internship at a smaller hospital may allow for more hands-on time. (See Student Feedback)

Partnerships with University Emergency Medical Departments in the US

New York Presbyterian Hospital

At present, LIHS' collaboration with NYPH is limited to periodic consultations and occasional on-site trainings for PDGEMS instructors and students. While LIHS typically covers travel costs, NYPH doctors have provided training and consultancy services on a pro-bono basis. Given LIHS' longstanding relationship with the hospital, we strongly recommend that the LIHS team take steps to formalize and institutionalize this relationship. A more official collaborative structure will allow LIHS to optimize existing resources provided by NYPH and to plan collaboration on additional areas in emergency medicine. For instance, NYPH doctors interviewed by the research team[54] expressed interest and willingness to assist LIHS on the design of the EMT basic course as well as other potential courses not currently offered such as Hazmat and Anesthesiology training. To promote LIHS' expertise in disaster preparedness, LIHS can also seek NYPH assistance in organizing smaller scale disaster management drills, such as the MEMex course conducted in 2008. To reduce cost associated with international travel, the doctors have also proposed conducting webinar-based training for prospective LIHS instructors. The sustainability and longevity of the existing partnership rests LIHS management's initiatives to improve the quality and consistency of mutual collaboration and communication.

[54] Several interviews were conducted with Dr. Satchit Balsari and Dr. Heidi Cordi, who have been leading collaborative efforts between NYPH and LIHS.

Recommendations for leveraging existing partnership with NYPH:

- Issue a new Memorandum of Understanding (MOU) outlining details of collaboration on specific courses, as well as any fees associated with services provided by NYPH. Such a document will allow LIHS to formalize and increase the transparency of its relationship with NYPH.
- Consider programs and/or services which can serve to benefit NYPH such as student exchanges or residency/internship program for NYPH students studying international practices in EM.
- Allocate a fixed budget for payment of consulting fees;
- Establish a formal communication process between the two entities including dedicated point s of contact on each side, frequency and means of communication.

Long Island Jewish Medical Center Department of Emergency Medicine **(LIJ)**
LIJ has a strong presence in India and is currently partnered with a number training institutes such as IIEMS and has assisted hospitals in India to set up emergency departments and training programs. Principal contact: Doctor Kumar Alagappan, Associate Chairman, Department of EM (alagappa@lij.edu)
http://www.er-lij.com/training_international_em.html

New York University (NYU) Department of Emergency Medicine
NYU houses a world renowned department dedicated to International Emergency Medicine. The University is affiliated with Bellevue, NYU Tisch, and VA Hospitals in New York City. Its residency training program in emergency medicine is one of the largest in the US. Graduates and current fellows practice both academic and community emergency medicine throughout the world. While the university does not currently have a presence in India, we believe that the prestige and international focus of NYU's EM department makes the university a potentially interesting partner for LIHS.
http://www.med.nyu.edu/emergency/

University of South Florida (USF)
The Global Emergency Medical Sciences department of USF has specific focus on developing emergency medical practice in India and is one of the founding institutions of the INDO-US Emergency and Trauma Partnership (INDOSEM). Potential affiliation with USF would allow LIHS to leverage the university's strong presence in India, and to become directly involved with INDOUSEM activities. Principal contact: Dr. Sagar Galwankar (http://health.usf.edu/medicine/internalmedicine/emergency/index.htm)
http://www.indusem.com/education.html

Partnerships with US-Based Training and Accreditation Institutions

Emergency medical training in the United States
The US Department of Transport's National Highway Traffic Safety Administration (NHTSA) has developed curricula titled the 'National Standards Curricula' for EMS professionals at five levels of proficiency – EMT basic, EMT intermediate, EMT advanced, EMT paramedic and first responder courses. Training is provided on these curricula by independent bodies certified to by state level Bureaus of EMS, which are government bodies. Upon completion of training, individuals are licensed as EMS practitioners in a particular state. In addition to being licensed, 46 states now require practitioners to be 'certified' by the National Registry of Emergency Medical Technicians - a private organization that administers its own test to certify professionals. Licensure and certification are separate procedures, and in most cases both are required to practice.

In light of this, it is difficult to envision the prospect of partnerships with US-based EMS training organizations, since the curriculum upon which training is provided is not owned by these organizations themselves but by a government body. However, there does exist potential for partnerships in non-EMT courses, many of which present a substantial growth opportunity for LIHS. We recommend that LIHS consult Dr. Heidi Cordi for specific recommendations on potential accreditation institutions. Some options are listed below:

Emergency Care and Safety Institute:

ECSI is an educational organization created to deliver training to civilians and professionals in First Aid, CPR, AED, Bloodborne Pathogens, and related safety and health areas. The content of their training material is approved by the AAOS (American Academy of Orthopaedic Surgeons) and the ACEP (American College of Emergency Physicians).

ECSI is not an educational provider in that it does not directly administer pedagogy. Institute Educational Centers (academic institutions) are responsible for the delivery of ECSI courses. Individual professors conduct courses according to ECSI policies and procedures. Upon course completion, successful participants are issued with a completion card by ECSI. This model makes ECSI an appealing partner since they already operate upon the 'franchisee' or 'certification' structure.
Some ECSI courses which we believe can be successfully migrated to the Indian market are:

- Adult CPR ; Pediatric CPR ; CPR and AED ; AED ; eACLS ; First Aid ;First Aid and CPR ; First Aid, CPR, and AED Standard ;First Responder ;PedFACTS ;Professional Rescuer CPR (http://www.ecsinstitute.org/)

The National Safety Council:
The NSC is an organization that provides products and training in courses related to safety. This is a potentially lucrative area for LIHS since the prime target market for these courses will be fully-paying corporate clients from whom revenues can be used to subsidize other segments.

NSC's relevant course offerings are:

- Workplace safety courses; Driver safety instructor courses; Defensive driving ; Professional defensive driving for truck drivers; Emergency care instructor courses; Standard First Aid, CPR, and AED; Paediatric First Aid, CPR, and AED. (http://www.nsc.org/products_training/Pages/Home.aspx)

National Association of EMS Educators:
NAEMSE offers a US based examination for EMS trainers. Those who successfully pass the examination become Nationally Certified. (http://www.naemse.org/)

Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions:
CoAEMSP accredits education providers on the basis of their ability to include a number of criteria in their course offering – including their adherence to the nationally prescribed curricula. Don't think this is going to be of much help in a non-US scenario. (http://www.coaemsp.org/)

Emergency Medical Services Educators Certification Services:
EMSECS is a training and certification center for EMS education professionals. The institute offers paper based examinations. Those who successfully pass the test become Nationally Certified EMS Educators. More research is required to assess whether this type of certification would be relevant in India. (http://www.emsecs.org/)

Medic First Aid International:
MFAI is an international provider of first aid and emergency care training programmes. The organization is present in a number of countries through regional offices. In countries where they do not have regional offices, they partner with local organizations to provide courses. India is one such country where they work with a number of local bodies – Arbit Safety Solutions (http://www.arbritonline.com/) in Cochin is an example. Since they are practiced at franchising out their pedagogy, a partnership with them could be a strong and lucrative proposition. Another way that LIHS could benefit through MFAI is by having its instructors, rather than its courses, accredited by them.
Some of their course offerings are:

- BasicPlus CPR, AED, and First Aid for Adults; Basic CPR and First Aid for Adults; PediatricPlus CPR, AED, and First Aid for Children, Infants, and Adults; Pediatric CPR and First Aid for Children, Infants, and Adults; CarePlus™ CPR and AED for Adults, Children, and Infants. (http://www.medicfirstaid.com/)

American Safety and Health Institute:

ASHI employs a variant of the franchising model. It designs and approves training material which is then used by about 5,500 training centers all over the world to instruct individuals in the areas mentioned below. Their clientele includes a number of US government organizations, corporate bodies, and first aid / AED equipment manufacturers. Again, since they already operate a distributed model, a partnership option is tangible. ASHI is already present in India through Pathways in Delhi offering Basic First Aid and CPR, and Haris Institute of Safety Technology in Kerala offering CPR.
Some of their course offerings are:

- CPR for the professional rescuer ; CPR-AED for the community and workplace; Basic First Aid; Emergency Medical Response for Adults in the Workplace; ACLS; PALS **(**http://www.ashinstitute.org/)

A7: Survey Results

PDGEMS Paper-based surveys sample size: 36

1 How satisfied are you with the quality of the PDGEMS on a scale of 1-5?

Multiple choice, single answer, rating scale

	count	percent
Very satisfied (5)	11	26%
Satisfied (4)	15	35%
Neutral (3)	8	19%
Not very satisfied (2)	0	0%
Not satisfied (1)	0	0%

2 How important were the following reasons to you for pursuing this degree? Rate on a scale of 1 to 5.

multiple choice, multiple answers, rating scale

	avg. rating	total score
interest in emergency medicine	155	5
acquire new skills	171	5
improve access to jobs	128	4

3 When evaluating EMT programs to what extent were the following criteria important to you on a scale of 1 to 5?

multiple choice, multiple answers, rating scale

	avg. rating	total score
Instruction quality	4.1	149
Hands on experience	4.1	146
Reputation	4	144
Prestige of hospital	4	143
Job placement services	4	125
Location	3.9	140
Class Size	3.8	138
Program length	3.7	133
Cost	3.2	116

4 How satisfied are you with the LIHS PDGEMS program in each of the following categories on a scale of 1 to 5?

multiple choice, multiple answers, rating scale

	avg. rating	total score
Reputation	4.1	150
Quality of instruction	4.1	146
Class size	4.0	145
Prestige of partner hospital	3.9	140
Hands on experience	3.8	137
Lenth of program	3.8	135
Location	3.6	129
Cost	3.0	107
Job placement services	2.6	95

5 What other emergency medical training institutions did you consider attending?

multiple choice, multiple answers

	count	percent
LIHS only	15	41.67%
Symbiosis	14	38.89%
Oasis	2	5.56%

6 What criteria led you to select LIHS over other post graduate medical institutions?

multiple choice, multiple answer

	count	percent
Prestige of partner hospital	22	61%
Quality of instruction	14	39%
Job Placement services	12	33%
Location	10	28%
Length of program	9	25%
Reputation of LIHS	9	25%
Hands on experience	6	17%
Cost	5	14%
Class Size	4	11%

7 How did you hear about this course?

multiple choice, single answer

	count	percent
Internet Search	2	5.7%
Former Student	26	74.3%
Former Teacher	0	0.0%
Employer	1	2.9%
Advertisement	6	17.1%

8 How did you pay for this course?

multiple choice, single answer

self-funded	22	66.67%
funded by employer	2	6.06%
family or friends	2	6.06%

9 What is the highest educational degree/diploma you have received?

multiple choice, single answer

	count	percent
Homeopathic	16	44.4%
Aryuvedic	13	36.1%
Unani	6	16.7%
BDS	1	2.9%

10 What is your current job title?

various, see response data

11 What is your current specialization?

	count	percent
BHMS	13	41.94%
BAMS	9	29.03%
BUMS	3	9.68%
DHMS	1	3.23%
CGO	2	6.45%
Unani	2	6.45%
Dental Surgergy	1	3.23%

12 What institution do you work for?

various, consult raw data

13 What is your current job title?

free response

	count	percent
RMO	10	32.26%
intern	6	19.35%
medical officer (hospital)	3	9.68%
medical officer (clinic)	3	9.68%
nursing home assistant	1	3.23%
other	2	6.45%

14 What is your gross salary at your current job?

multiple choice, single answer

	count	percent
<10,000	18	78%
10,000-20,000	5	22%
20,000-30,000	0	0%
>30,000	0	0%

15 If you plan to seek different employment after completing this course, please specify what type of work you are most interested in.

most common response

Casualty Medical Officer

MHA (Tata) Institute

Hospital in Bombay (Ali Khan, Hinduja, Bombay, Sion, Siajee, Dilavati, Wockhart)

Intensivist in rural areas where doctors are unavailaanle

Asian Heart Institute

ICU at big hospital

RMO

work overseas (USA)

16 What is your desired salary?

free response

	count	percent
10,000-20,000	15	53.6%
20-30,000	6	21.4%
>30,000	7	25.0%

17 Would you recommend this course to your friends?

	count	percent
yes	36	100.0%
no	0	0

PDGMES Web-based survey

sample size: 10

1 How satisfied are you with the quality of the PGDEMS course overall on a scale of 1 to 5?

	percent	count
Not satisfied (1)	0.0%	0
Not very satisfied (2)	0.0%	0
Neutral(3)	20.0%	2
Satisfied (4)	30.0%	3
Very satisfied (5)	50.0%	5

2 What were your reasons for pursuing the PGDEMS course from LIHS? (Select all that apply.)

	percent	count
Acquire new skills	70.0%	7
Curiosity/interest in emergency medicine	80.0%	8
Access to improved job opportunities	10.0%	1
Other (please specify)		1

How did you hear about the PGDEMS course from LIHS? (Select all that apply.)

	percent	count
3 Advertisement	30.0%	3
Former LIHS student (word of mouth)	70.0%	7
Employer	0.0%	0
LIHS workshop	0.0%	0
Former teacher	0.0%	0
Other (please specify)		0

4 What is the highest educational degree, diploma, or qualification you have received?

	percent	count
MD	0.0%	0
MBBS	10.0%	1
Aryuvedic Doctor	40.0%	4
Homeopathic Doctor	50.0%	5
Unani Doctor	0.0%	0
Nurse	0.0%	0

5 Other (please specify)

What was your job prior to taking or during the PGDEMS course?

	count
RMO	4
Physician	1
Ayruveda consultant	1

6 What was your gross salary at this job? (Rs per month)

	percent	count
Below 10,000 Rs	50.0%	5
10,000 to 20,000 Rs	30.0%	3
21,000 to 30,000 Rs	0.0%	0
Above 30,000 Rs	20.0%	2

7 What job did you hope to obtain upon completion of the PGDEMS course?

	count
ACLS/BLS instructor	1
Job in crisis management	1
ICU	5

8 By how much did you improve your gross salary upon completion of the PGDEMS course? (Rs per month)

	percent	count
Below 5,000 Rs	30.0%	3
5,000 to 10,000 Rs	20.0%	2
11,000 to 15,000 Rs	0.0%	0
Above 15,000 Rs	10.0%	1
Not applicable	40.0%	4

BLS - Prince Aly Khan Hospital

sample size: 29

1 What are you reasons for attending the BLS course?

multiple choice, multiple answers

	count	percent
interest in emergency medicine	15	52%
acquire new skills	13	45%
meet int'l requirements associated with medical jobs outside of India	8	28%
improve access to jobs	1	3%

2 When evaluating EMT programs to what extent were the following criteria important to you on a scale of 1 to 5?

multiple choice, multiple answers, rating scale

	average ranking	total score
Quality of instruction	3.9	113
AHA certificatoin	3.9	113
Convenient Location	3.4	97
Reputation of institution	3.4	98
Size of classes	3.3	97
Length of program	3.1	90
Cost of program	3	88

3 What other emergency medical training institutions did you consider attending?

multiple choice, multiple answers

	count	percent
LIHS only	15	52%
EMRI	4	14%
IIEMS	8	28%
Academy of Traumatology	2	7%
Other	2	7%
Oasis	1	3%

4 What criteria led you to select LIHS over other EMT institutions?

multiple choice, multiple answer

	count	percent
AHA certification	15	52%
Quality of instruction	12	41%
Convenient Location	10	34%
Reputation of institution	9	31%
Size of classes	5	17%
Length of program	3	10%
Cost of program	2	7%

5 How did you hear about this course?

multiple choice, single answer

	count	percent
Former student	13	45%
Internet Search	10	34%
Employer	5	17%
Former teacher	1	3%
Advertisement	0	0%

6 How did you pay for this course?

multiple choice, single answer

	count	percent
self-funded	19	66%
funded by employer	6	21%
family or friends	3	10%

7 What is the highest educational degree/diploma you have received?

multiple choice, single answer

	count	percent
Nurse	13	45%
MBBS	8	28%
MD	2	7%
Homeopathic doctor	2	7%
Unani doctor	2	7%
Ayruvedic doctor	0	0%

8 What is your current job title?

free response

	count	percent
Nurse (staff/head)	9	33%
Nursing tutor	2	7%
RMO	2	7%
Resident Doctor	1	4%
Clinical associate (anesthesia)	1	4%
Oil rig doctor/medic	2	7%
General practice	3	11%
Other (intern, not practicing, student)	7	26%

9 Do you plan to switch jobs after completing this course?

	count
yes	3
no	13

10 Are you taking this course to maintain AHA certification?

	count
yes	15
no	14

11 Would you recommend this course to your friends?

	count
yes	29
no	0

BLS/ACLS Web-based survey Sample size 50

1 How satisfied are you with the quality of the BLS/ACLS course on a scale of 1-5?

Multiple choice, single answer, rating scale

	count	percent
Very satisfied (5)	29	58%
Satisfied (4)	19	38%
Neutral (3)	2	4%
Not very satisfied (2)	0	0%
Not satisfied (1)	0	0%

2 What were your reasons for pursuing the BLS/ACLS course with LIHS?

Multiple choice, multiple answer	**count**	**percent**
meet international standards	32	64%
acquire new skills	28	56%
interest in emergency medicine	19	38%
improve access to jobs in India	8	16%

3 How did you hear about the BLS/ACLS course from LIHS?

Multiple choice, single answer	**count**	**percent**
Former student	27	54%
Advertisement	10	20%
Employer	7	14%
LIHS workshop	7	14%
Former teacher	4	8%

4 What is the highest educational degree, diploma, or qualification you have received?

Multiple choice, single answer	**count**	**percent**
Homeopathic	4	8%
Aryuvedic	1	2%
Unani	1	2%
MBBS	19	38%
MD	12	24%
Nurse	13	26%

5 If you completed the ACLS course more than two years ago, did you obtain recertification through LIHS?

Multiple choice, single answer	**count**	**percent**
N/A (completed less than 2 years ago)	30	60%
yes	7	14%
no	17	34%

*** If not, why not?**	**count**
time constraint (2) ; cost (2) ; (no longer in India (3) ; not available in my region (1) ; currently an instructor (1)	

6 If you completed the ACLS course within the last two years, would you seek recertification from LIHS?

	count	percent
N/A (completed over 2 years ago)	6	12%
yes	36	72%
no	8	16%

*** If not, why not?**

time constraint (1) ; cost (1) ; will be retrained by residency program (1) ; no longer in India (1) ; currently instructor (1),

7 Which of the following factors would influence your decision to seek recertification from LIHS? (scale of 0-2)

	Definitely influence	**Might influence**	**Will not influence**	**total count**
Cost of recertification	19	16	10	45
Convenience of date and time	24	14	10	48
Reminder email of certification expiry	23	21	4	48
Reminder call of certification expiry	19	16	6	41

Survey Results: Student Feedback and Recommendations

ASLC/BLS

Content & organization

- Consider implementing an online recertification option for those who are currently working in the clinical field; this will help reduce the cost as well as ensure convenience of time, effort and cost.
- More hands-on with more refined simulators
- Add certain other emergency techniques like endotracheal intubation, ECG
- Increase the number of days to 5
- Rhythm interpretation or ECG reading should be included in the total cost of BLS & ACLS.
- Duration of the course is stretched to the limits; difficult to concentrate towards the end of the day.
- Add all first aid treatments in this course
- The course must be subsidized, given the Indian frame of context.

Communication

- Increase awareness about the availability of course; "popularize"
- Provide students with updates of ACLS/BLS, etc. through email
- Contact students periodically for workshops, available placements etc.
- It was rather difficult for me to find this course, I looked for 3 months before I found the website.

Outreach and awareness

- Reach out to universities to integrate course into the curriculum for undergraduates
- Many of our senior physicians are not up-to-date on ASLC/BLS practices but may not spend time and money on the course- appraisals/updates for them could be useful
- Reach out to general practitioners associations or association of physicians
- Make course available in cities other than urban centers
- Medical school students should take this course in their final year are aware; LIHS should actively advertise in and around medical schools in Mumbai to raise greater awareness.

PDGEMS

Content & organization

Increase number of lectures offered

- Increase duration from weekend to at least 3-4 days per week
- Increase internship duration and quality - a smaller hospital might give students more opportunities to practice
- Include government hospital exposure
- More practical training and hands-on experience
- Integrate hospital visits during the course to see emergency set-ups
- Avoid overlapping lectures
- Offer practicals with live patients
- Lower course fees
- Course should be recognized by the university
- Conduct more mock drills to create public awareness about the course
- Provide more job opportunities

BLS

- Increase length to include ACSL
- Group students according to qualification
- ECG class should be authentic, not casual
- Communication: Information on internet not accurate/up-to-date; Responses to queries have been late
- Increase # of courses offered per month

INSTITUTIONAL CLIENTS

- Provide course material in advance, so that participants may be better prepared
- Provide films / slides in local language
- Send reminders to participants to appear for subsequent course