Heart Institute of the Caribbean Assessment and Vision

PREPARED FOR THE BOARD OF DIRECTORS

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Cardiovascular disease (CVD) in the developing world

When we discuss disease in the developing world, we most often hear about communicable diseases, like Malaria and HIV. The reality, however, is that the burden of non-communicable diseases, including cardiovascular disease, is growing in the developing world.

- CVD accounts for ~17 million deaths annually
- 85% of the global CVD deaths occur in developing countries
- 90% of diagnostic and treatment resources are in the West
- By 2015, deaths from non-communicable will exceed those of communicable diseases
- By 2020, CVD mortality in sub-Saharan Africa will increase by 130%
Demographics

- Population: 2.8m (2010 est.)
- GDP per Capita: $8,400
- Life expectancy: 71.8 male, 75.25 female
- Leading cause of mortality and morbidity in Jamaica is non-communicable diseases

Healthcare System

- Decentralized into Regional Health Authorities
- 75% of health spending are private
- Public, NGO and Private health providers
- Government’s focus is on the primary care and not on specialized services
- Weak insurance scheme
- Wealthy and middle-class Jamaicans often go the U.S. for specialized care, while the poor may go without treatment
Vision of the Heart Institute of the Caribbean

- Provide affordable, world-class cardiovascular care to the people of the Caribbean regardless of ability to pay
- Keep resources in Jamaica
  - Have people pay for health services in country, preventing the outflow of capital
  - Keep doctors in Jamaica – stop and prevent “brain drain” to the US, Canada and the UK
- Help build up a medical industry by encouraging local assembly and service of equipment

Dr. Ernest Madu, founder of the Heart Institute

- Dr. Madu is Nigerian; his wife, also a cardiologist, is Jamaican.
- US trained and board certified in Internal Medicine, Cardiovascular Medicine, Nuclear Cardiology and Forensic Medicine
- On the faculty of the Division of Cardiovascular Medicine at Vanderbilt University

“Who are we to decide that poor people cannot get the best care? . . . My job is to make sure that every person, no matter what fate has assigned to you, will have the opportunity to get the best quality healthcare in life.”

--Dr. Madu
• Founded in 2005 by Dr. Madu
• Only cardiovascular specialty center in the Caribbean
• Provides world-class care in diagnostics and procedures
• Sites in Kingston, Mandeville & Ocho Rios, Jamaica
• Serves ~10,000 patients per year
More detail on the Heart Institute

Services HIC provides
• Comprehensive general medical and cardiac care
• Diagnostic:
  ▫ Non-invasive: echocardiogram, pulmonary function test, etc.
  ▫ Invasive: angiography, EP studies, etc.
• Treatment:
  ▫ Non invasive/medical: hypertension, diabetes, heart failures
  ▫ Invasive: Angioplasty, pacemaker implants, ablation
• Prevention:
  ▫ Corporate packages of pre-employment screening, employee and executive screening and follow-up
  ▫ Sponsorship of community walks to encourage exercise and good nutrition

Management
• Run by a team of business people and approximately 25 physicians

Locations
• Locations in Kingston, Mandeville and Ocho Rios cover both urban and rural areas. Locations are strategically chosen in order to be able to reach both paying patients and non-paying ones.

Patients served
• Wealthy patients now see HIC as a substitute for flying to the U.S. for care. HIC believes approximately 4,000 patients have elected to stay in Jamaica for care over the past several years.
• Cross-subsidization allows HIC to serve all who need care.
• Great fit with the needs of local community, with cardiovascular disease emerging as a leading cause of morbidity and mortality in Jamaica
How does the Heart Institute deliver value?

HIC’s model in Jamaica works because of three key elements:

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<thead>
<tr>
<th>1. LOW COST</th>
<th>2. CROSS-SUBSIDIZATION</th>
<th>3. TRAINING &amp; LOCAL STAFFING</th>
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<tbody>
<tr>
<td>• Durable, modular components</td>
<td>• Wealthy Jamaicans are charged a higher price for HIC services</td>
<td>• Training hospital for Caribbean doctors</td>
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<td>• Reduce supplier power, lead time, shipping cost and total product cost</td>
<td>• 1 full-paying patient subsidizes 4 other procedures</td>
<td>• HIC provides a place for doctors to train in advanced care in the Caribbean</td>
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<td>• Extends life of the equipment, provides scheduling flexibility</td>
<td>• As of 2007, HIC had served over 1,000 indigent patients and spent $1M on their care</td>
<td>• Prevents “brain drain” from Jamaica</td>
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<td>• Produce some treatments internally</td>
<td>• Affordable, world class healthcare keeps Jamaicans leaving the country for care</td>
<td>• 60% of Caribbean educated doctors usually leave the region</td>
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<td>• HIC purchases raw material for some drugs and makes the final product in-house</td>
<td>• HIC also accepts charitable contributions through a non-profit arm</td>
<td>• HIC provides comparative salary and training which helps to retain good doctors in the region</td>
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<td>• Some, repairs, tools and equipment are done internally</td>
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<td>• Partnerships with local universities to train lab technicians</td>
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<td>• Telemedicine</td>
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<td>• HIC created the biomedical engineering program at the University of the West Indies</td>
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<td>• Medical information is transferred through interactive audiovisual media. 3 sites are linked to a central server</td>
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<td>• Provides a supply of talent for medical and technical engineers</td>
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<td>• Images can be reviewed by experts anywhere in the world, reducing the need to travel for special diagnoses</td>
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<td>• HIC has created over 100 jobs for the Jamaican economy</td>
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<td>• Electronic medical records</td>
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<td>• Streamlines administration</td>
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<td>• Helpful in capturing data from rural population</td>
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Access to Information

Dr. Ernest Madu is an inspiring leader and he has built a clinic with excellent service and great promise. From the information we could gather, we believe that HIC is successful in its mission of providing world-class cardiology services to all in Jamaica who seek its services. We were lacking information on the following topics, however, that would allow us to verify Dr. Madu’s assertions.

**Financial information** – We had little information on the real financial situation of the organization. Dr. Madu states that HIC provides services at 10% of the cost of services in the U.S., and that HIC is self-sustaining. Both strike us as possible, but we could not verify HIC’s financial position.

**Patient volume** – We found only one reference to how many people HIC serves – 5,000 to 12,000. We could not identify more specifically how many people receive care, and how many of those pay full cost.

**Health impacts** – The Heart Institute does participate in some clinical trials, but we did not find comprehensive studies on the impact of HIC’s work on health in Jamaica. Without more data on patients served and health impacts, it is hard to assess HIC’s true success.
Our Assessment: Operations in Jamaica

After five years in Jamaica, HIC operates three sites and serves thousands of patients a year with advanced care. In order to ensure the organization’s sustainability in the future, we believe HIC should focus on these areas:

Measuring health impact

• The Heart Institute should be doing more clinical studies to establish the true effect of the organization’s work on the local population’s health. Reliable data on impact would enable HIC to plan and execute better, as well as aid in raising additional funds.

Maintaining focus on the core mission

• HIC should examine its funding and efforts around prevention to understand whether it should continue working in this area. If money spent on community awareness programs does not actually produce measureable impact, HIC should refocus on its core competencies of delivering diagnostics and procedures for cardiovascular disease. Prevention is important, but it must be done effectively.

Ensuring leadership continuity

• Given that HIC is planning to expand, it is critical that strong leadership is in place to continue work in Jamaica even if the founder’s focus shifts elsewhere.
Our Assessment: Expansion Abroad

Dr. Madu has announced that he plans to open a Heart Institute of West Africa in Port Harcourt, Nigeria. We support HIC’s expansion plan, but also strongly believe that the organization must find the right location and conditions for a new site to work.

Will the cross-subsidizing financial model work?
The cross-subsidy model is critical to HIC’s sustainability in Jamaica. Will the same revenues and expenses prevail in Nigeria?

Revenues
• In Jamaica, 1 paying patient subsidizes 4 patients who cannot pay full price. In Nigeria, will the Heart Institute find the same ratio? What if there are 8 or 9 people for every person who can pay? Is this difference driven by income level, disease burden or a combination of both?
• What price can HIC charge the full-freight patients in Nigeria?

Expenses
• Importing drugs and equipment to Nigeria may be much more expensive than shipping them to Jamaica. What will be the difference in transportation costs?
• Can HIC find cardiologists who are willing to live in Port Harcourt, Nigeria and earn a “reasonable” local wage?

Can the Heart Institute find enough doctors?
Having a supply of Caribbean doctors and medical students is key to making the model work in Jamaica.
• What if there are not enough Nigerian or African cardiologists to support the number of patients the Heart Institute expects?
• What if there are not sufficient local university resources to train lab technicians and other skilled support staff?
Recommendations

We recommend that the Heart Institute expand *smartly*.

• The organization must first ensure that the Jamaican sites are profitable and have competent, long-term managers.
• Then, HIC should understand specifically what makes the model work in Jamaica. Before expanding to another country, the organization must do extensive research to understand whether critical elements of demand, costs, and staffing will be similar or different than in Jamaica. Then, HIC can decide whether the model needs any adjustments to fit into a new setting.
• At each decision HIC must focus on sustainability. Does each new activity or site pay for itself? If not, how can HIC raise other funds or subsidize across activities?
Bibliography

- Heart Institute of the Caribbean website, www.caribbeanheart.com