An Investigation of Emerging Practices for Non-Profit Eye Hospitals in Developing Markets

Sustainability: Practices today for tomorrow

An Investigation of Emerging Practices for Non-Profit Eye Hospitals in Developing Markets
Key Questions

• Key Question 1: How do financial and environmental sustainability interlink?
• Key Question 2: How can hospitals market their services in a way that increases revenue?
• Key Question 3: How can hospitals improve their environmental impact in a way that increases revenue?
• Key Question 4: What does this have to do with me?
Agenda

• Introduction to the course
• Overview of Financial Sustainability
• Put in Practice: Case study on Financial Sustainability
• Overview of Environmental Sustainability
• Put in Practice: Case Study on Environmental Sustainability
• Tying it Together
• Questions & Wrap up
Overview
Financial Sustainability
Financial Sustainability

• Sustainability is a measure of an organization’s ability to fulfil its mission and serve its stakeholders over time

• Applied to finances
  • Increasing Revenue
  • Controlling Expenses

Importance of Sustainability

• Not-for-profit eye hospitals face tremendous funding constraints that affect operational efficiencies
• To reduce dependence on external funds, imperative the institution achieve financial sustainability
Put in Practice
Review of efforts at 3 hospitals
International Business Development (IBD Program)

• Intensive management consulting course for University of California, Berkeley MBA students
  • Operating since 1992 in 89 countries

• Projects are developed with faculty mentors who are experts in management consulting and international business strategy
Focal Hospitals

- HV Desai Eye Hospital (2016)
- Dr. Shroff’s Charity Eye Hospital (2018)
- Clínica Oftalmológica Divino Niño Jesus, Peru (2017)
Aim of Work Across Three Hospitals

Improve the financial sustainability of the hospital by identifying how to increase the volume and conversion of paying patients.
Methodology

IBD Teams
• Conduct competitive analysis assessment
• Complete patient satisfaction surveys
• Final recommendations focused on brand, health promotion, pricing, staff, amenities

Review of Cases
• Review IBD projects
• Conduct written and oral interviews with hospital directors and staff
• Analyze responses and identify common themes, strategies
Common Recommendations

- Brand
- Patient Experience
- Pricing
- Staff
• Target client profiles
• Quality over charity
• Patient ambassadors
• Consistency in look and message
• Place materials where target patients congregate
• Patient satisfaction surveys
• Patient waiting time
• Improve waiting experience
• Willingness to pay more for efficiency
• Consider entry point for services
• Consider accessibility of high-end services
• Ensure patient can take home or take a picture of pricing and bundle information sheet(s)
• Staff as extension of brand
• Standardize counseling
• “Patient as god”
CASE STUDY:
HV Desai Eye Hospital, India
To help HV Desai design ways to increase surplus from services by enhancing the paying patient experience

**Purpose**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Pricing</th>
<th>Staff</th>
<th>Amenities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refine branding and increase awareness</td>
<td>Optimize pricing and transparency</td>
<td>Improve patient-staff interaction</td>
<td>Enhance amenities and services</td>
</tr>
</tbody>
</table>
Signage
Campus Development
Website Redesigned
In Pune, one in five persons above 50 is diabetic: survey

EXPRESSNEWS SERVICE
PUNE, JANUARY 17

A RECENTLY CONDUCTED survey on Avoidable Blindness and Diabetic Retinopathy (ABDR) in India — conducted by the Department of Health, Government of India, and the Indian Council of Medical Research — has revealed that in Pune, one in five persons above 50 years is diabetic.

The survey was conducted by HV Desai Eye Hospital and August in collaboration with the Department of Health, Government of India, and the Indian Council of Medical Research.

The survey found that among the people aged 50 and above, 20% have diabetes, and 40% of those with diabetes have diabetic retinopathy. The survey also found that in Pune, one in five persons above 50 years is diabetic.

The survey was conducted by HV Desai Eye Hospital and August in collaboration with the Department of Health, Government of India, and the Indian Council of Medical Research.

The survey found that among the people aged 50 and above, 20% have diabetes, and 40% of those with diabetes have diabetic retinopathy. The survey also found that in Pune, one in five persons above 50 years is diabetic.

The survey was conducted by HV Desai Eye Hospital and August in collaboration with the Department of Health, Government of India, and the Indian Council of Medical Research.

The survey found that among the people aged 50 and above, 20% have diabetes, and 40% of those with diabetes have diabetic retinopathy. The survey also found that in Pune, one in five persons above 50 years is diabetic.

The survey was conducted by HV Desai Eye Hospital and August in collaboration with the Department of Health, Government of India, and the Indian Council of Medical Research.

The survey found that among the people aged 50 and above, 20% have diabetes, and 40% of those with diabetes have diabetic retinopathy. The survey also found that in Pune, one in five persons above 50 years is diabetic.

The survey was conducted by HV Desai Eye Hospital and August in collaboration with the Department of Health, Government of India, and the Indian Council of Medical Research.

The survey found that among the people aged 50 and above, 20% have diabetes, and 40% of those with diabetes have diabetic retinopathy. The survey also found that in Pune, one in five persons above 50 years is diabetic.
### CHARGES FOR CATARACT OPERATIONS

<table>
<thead>
<tr>
<th>LENS TYPE</th>
<th>MONOFOCAL LENS</th>
<th>MULTIFOCAL LENS</th>
<th>TORIC MONOFOCAL LENS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WITH CASH</td>
<td>CASHLESS</td>
<td>WITH CASH</td>
</tr>
<tr>
<td>Imported Hydrophobic Lens</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Alcon / Tecnis / Hanita / Superphob)</td>
<td>Rs. 33000/-</td>
<td>Rs. 35000/-</td>
<td>Rs. 70000/-</td>
</tr>
<tr>
<td>Imported Hydrophobic Lens</td>
<td>Rs. 32000/-</td>
<td>Rs. 32000/-</td>
<td></td>
</tr>
<tr>
<td>(HOYA / Zeiss / Nidek)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imported Hydrophilic Lens</td>
<td>Rs. 20000/-</td>
<td>Rs. 22000/-</td>
<td>Rs. 46000/-</td>
</tr>
<tr>
<td>(Rayone)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian Hydrophobic Lens</td>
<td>Rs. 15500/-</td>
<td>Rs. 17500/-</td>
<td>Rs. 20000/-</td>
</tr>
<tr>
<td>(Acriol / Supraphob)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian Hydrophilic Lens</td>
<td>Rs. 11500/-</td>
<td>Rs. 13500/-</td>
<td>Rs. 17500/-</td>
</tr>
<tr>
<td>(RYCF)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Redesigned pricing template**
Counselling Workshop for Cataract and other subspecialties surgeries
Dress Aprons
Soft Skills
NABH Training
Construction of new Operation Theatre
Independent Insurance Department
PBMA’s H. V. Desai Eye Hospital

OPD Graph FY2016-17  FY2017-18

<table>
<thead>
<tr>
<th></th>
<th>FY 2016-17</th>
<th>FY 2017-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privallage</td>
<td>404</td>
<td>767</td>
</tr>
<tr>
<td>Appointment</td>
<td>8,519</td>
<td>11,939</td>
</tr>
<tr>
<td>Specility</td>
<td>18,093</td>
<td>21,380</td>
</tr>
<tr>
<td>Subsidised</td>
<td>43,036</td>
<td>48,699</td>
</tr>
</tbody>
</table>

(Surgeries in No's)

1%
24
14%
Investigation / OPD Procedures Graph
FY2016-17 & FY2017-18

<table>
<thead>
<tr>
<th>Procedure</th>
<th>FY 2016-17</th>
<th>FY 2017-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratineae</td>
<td>6,275</td>
<td>8,829</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>3,752</td>
<td>3,463</td>
</tr>
<tr>
<td>Cornea</td>
<td>944</td>
<td>1,393</td>
</tr>
<tr>
<td>Lasik</td>
<td>175</td>
<td>307</td>
</tr>
<tr>
<td>Low Vision</td>
<td>430</td>
<td>438</td>
</tr>
<tr>
<td>Cataract</td>
<td>9,334</td>
<td>10,017</td>
</tr>
</tbody>
</table>

(Surgeries in No's)
Activity Status – Paid Surgeries

Surgery performance for Twelve Months [ April - Mar ]
Department wise Surgeries Graph
FY 2016-17 & FY 2017-18

<table>
<thead>
<tr>
<th>Department</th>
<th>FY 2016-17</th>
<th>FY 2017-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cataract Paying</td>
<td>6,879</td>
<td>7,695</td>
</tr>
<tr>
<td>Cataract Free</td>
<td>17,738</td>
<td>17,879</td>
</tr>
<tr>
<td>Cataract Subsidized</td>
<td>3,890</td>
<td>4,355</td>
</tr>
<tr>
<td>Cornea</td>
<td>1,319</td>
<td>1,219</td>
</tr>
<tr>
<td>Lasik</td>
<td>164</td>
<td>293</td>
</tr>
<tr>
<td>Retina</td>
<td>875</td>
<td>1,203</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>237</td>
<td>235</td>
</tr>
<tr>
<td>Oculoplasty</td>
<td>576</td>
<td>742</td>
</tr>
<tr>
<td>Pediatric</td>
<td>274</td>
<td>402</td>
</tr>
<tr>
<td>Other Minor Surgeries</td>
<td>856</td>
<td>862</td>
</tr>
</tbody>
</table>

(Surgeries in No's)

PBMA'S H. V. DESAI EYE HOSPITAL
WE REACH OUT AND CARE

FY 2016-17 & FY 2017-18
Activity Status – Phaco Surgeries

Surgery performance for Twelve months [April – Mar]

<table>
<thead>
<tr>
<th>Year</th>
<th>Surgeries</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-17</td>
<td>5,371</td>
</tr>
<tr>
<td>2017-18</td>
<td>6,049</td>
</tr>
</tbody>
</table>
# Revenue FY 15-16 to FY 17-18

<table>
<thead>
<tr>
<th></th>
<th>2017-18</th>
<th>2017-18</th>
<th>2016-17</th>
<th>2016-17</th>
<th>2015-16</th>
<th>2015-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Activities</td>
<td>1,789.72</td>
<td>1,467.91</td>
<td>1,363.79</td>
<td>67.59%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donations</td>
<td>775.49</td>
<td>748.24</td>
<td>377.00</td>
<td>18.68%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education Activities</td>
<td>139.41</td>
<td>130.84</td>
<td>101.92</td>
<td>5.05%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Assistance</td>
<td>30.05</td>
<td>35.13</td>
<td>60.77</td>
<td>3.01%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>37.43</td>
<td>32.15</td>
<td>37.25</td>
<td>1.85%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optical Activities</td>
<td>6.99</td>
<td>8.77</td>
<td>13.11</td>
<td>0.65%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Incomes</td>
<td>152.32</td>
<td>100.82</td>
<td>63.83</td>
<td>3.16%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,931.41</strong></td>
<td><strong>2,523.86</strong></td>
<td><strong>2,017.67</strong></td>
<td><strong>100.00%</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**HVDEH - Income Analysis F.Y. 2017-18**

- Hospital Activities: 61.05%
- Donations: 26.45%
- Education Activities: 4.76%
- Financial Assistance: 1.03%
- Research: 1.28%
- Other Incomes: 0.24%
- Optical Activities: 5.20%

**HVDEH - Income Analysis F.Y. 2016-17**

- Hospital Activities: 58.16%
- Donations: 29.65%
- Education Activities: 5.18%
- Financial Assistance: 1.39%
- Research: 1.27%
- Other Incomes: 0.35%
- Optical Activities: 3.99%

**HVDEH - Income Analysis F.Y. 2015-16**

- Hospital Activities: 67.59%
- Donations: 18.68%
- Education Activities: 5.05%
- Financial Assistance: 3.01%
- Research: 1.85%
- Other Incomes: 0.65%
- Optical Activities: -3.16%
# Cost Recovery Statistics

|----------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------|
| 2015-16        | 124%                                                                     | 105%                                                                                       | Free & Subsidised Surgery: 70%  
Paid Surgery: 30% |
| 2016-17        | 133%                                                                     | 98%                                                                                       | Free & Subsidised Surgery: 66%  
Paid Surgery: 34% |
| 2017-18        | 142%                                                                     | 106%                                                                                      | Free & Subsidised Surgery: 64%  
Paid Surgery: 36% |

![Cost Recovery Chart](chart.png)
CASE STUDY:
Clínica Oftalmológica Divino Niño Jesus, Peru
Alberto Lazo Legua
Executive Director, Clínica Oftalmológica Divino Niño Jesus
Branding

- Shift from charity
- Reflect wide-range of services available
- Cater to different social demographics
Pricing

- Patient study
- Patient willingness to pay 50 soles from 30 soles
Patient Experience

- Need for signage
- Easy ways for patients to reach the clinic
Overview of Environmental Sustainability
Sustainability

Addressing human industrial systems and consumption so that we “meet our needs without compromising future generation’s ability to meet their needs.”

- Bruntland Report, 1987
THE “TRIPLE BOTTOM LINE”

• People (Equity),
• Profit (Economy),
• Planet (Environment)
United Nation’s Sustainable Development Goals (SDGs)
QUESTION 1:

Is environmental sustainability an important topic for ophthalmologists to be concerned about? (Why or why not?)
Climate Change or Global Warming

Consumption of Plastics

http://blog.nwf.org/2013/07/declare-your-independence-from-plastic/

http://sarragarrett.blogspot.com/2012/10/please-cut-up-these-plastics.html

#ClinicallySustainable
@CassandraLThiel

NYU Langone Health
seva.org
Healthcare creates
• 10% of US’s GHGs
• 5% of UK’s GHGs
• 7% of Australia’s GHGs


“If the US health care sector were itself a country, it would rank 13th in the world for GHG emissions, ahead of the entire U.K.”


“Tackling climate change could be the greatest global health opportunity of the 21st century.”


Beyond that, climate change affects our patients’ health and the quality of the care we provide.
The Carbon Footprint of Cataract Surgery (in the UK)

• A single phacoemulsification emits about 180kg CO2-equivalents (this is about one week of “living” for the average Brit).
• Over 50% of these GHG emissions originates in procurement of supplies.
• Supplies are largely single-use disposables.

How can we improve sustainability in eye care and eye health?

#ClinicallySustainable @CassandraLThiel
QUESTION 2:

What would a "sustainable ophthalmology" practice look like?

#ClinicallySustainable
@CassandraLThiel
A Note about Aravind Eye Care System, the Special Case in this Study

TED talk: https://www.ted.com/talks/thulasiraj_ravilla_how_low_cost_eye_care_can_be_world_class

Aravind by the Numbers.
Rates for Phacoemulsification at Aravind Eye Hospital, India

| 300,000 | Cataract Surgeries per Year |
| 1.1% | Intra-op Complication Rate |
| 0.6% | Posterior Capsule Rupture |
| 96% | Corrected Distance Visual Acuity (6/12 or better) |
| 0.04% | Rates of Endophthalmitis |

#ClinicallySustainable
@CassandraLThiel
@CassandraLThiel

NYU Langone Health
seva.org
Waste Generation in the OR

1 Cataract Removal, Phaco (USA)

93 Cataract Removals, Phacos (Aravind, India)


#ClinicallySustainable @CassandraLThiel
Carbon Footprint of Average Single Phacoemulsification at Aravind and the UK

500km (UK)

25 km (Aravind)


#ClinicallySustainable
@CassandraLThiel
Ongoing Sustainability Efforts

Eyefficiency Cataract Surgical Auditing Tool
Benchmarks a unit’s
• Throughput
• Cost per Case
• Waste Generation
• Carbon Footprint

Currently beta testing
Preparing for general release in 2020!

#ClinicallySustainable
@CassandraLThiel
Thank You Team!

Contact Info: Cassandra.Thiel@nyumc.org
Twitter: @CassandraLThiel Instagram: Clinically_Sustainable

Dr. Joel Schuman, NYU
Dr. Jonathan Kahn, NYU
Dr. Paresh Shah, NYU
Ms. Diana Hong, NYU
Ms. Rachel Stancliffe
Ms. Inge Steinbach
Dr. Jorge Vendries
Dr. Andy Cassels-Brown
Dr. Dan Morris
Dr. Peter Thomas
Dr. John Somner
Dr. John Buchan
Dr. Colin Cook
Dr. Annalien Stein
Mr. Thulasiraj Ravilla
Mr. R. Vengadesan
Dr. R. Venkatesh

Mr. David Kleyn
Ms. Jenna Tauber
Dr. Ijeoma Chinwuba
Dr. Michael Rothschild
Ms. Chhavi Gupta

The National Science Foundation
International Agency for the Prevention of Blindness, Seeing Is Believing Pilot Grant through Standard Charter Bank
Centre for Sustainable Healthcare
Coalition for Sustainable Healthcare & Environmental Resources Management
US-India Exchange Foundation (Fulbright Commission)

#ClinicallySustainable
@CassandraLThiel
CASE STUDY:
Honiara, Solomon Islands
CASE STUDY:
Honiara, Solomon Islands
sustainable infrastructure

Neil Murray
Acknowledgement: The Fred Hollows Foundation
NZ
The brief

- Honiara, Solomon Islands
- new national eye clinic and day stay theatre complex
- single storey, roof 800 square metres
- developed world standard air conditioning
The problems

hot and wet
unreliable power and water supply
temperature: average 26.6 degrees centigrade
humidity: average 79%
rainfall: average 2171mm
national grid power: average 10 power outages per day/expensive
municipal water: frequent pipe/supply/quality problems
100KwH solar power system

400 roof mounted solar panels with battery storage and generator back up

designed to deliver 94% of anticipated power usage

roof water tank storage
20,000 litres (filtered)
The outcomes

Power:
Annual average supply 70,000 KwH
More than 96% of the facility’s power requirements
Pay back solar investment within 5 years
The outcomes

water:
self sufficient for all water needs
high water quality – monitored on site
The learnings

adequate roof space for solar sufficiency is also adequate for water sufficiency (2015 rule of thumb)

**surge free value add:** clean power protects sophisticated electronic equipment extends working life

**clean high quality adequate water:** protection for equipment and instruments and against waterborne contamination/infection
TYING IT ALL TOGETHER
Discussion Questions

1. What changes have you or your organization tried to implement to improve financial or environmental sustainability? (What were the outcomes?)
2. After this session, what is one thing you will try to improve the financial and/or environmental sustainability of your organization?
Online forums by specialty: http://networks.sustainablehealthcare.org.uk

Royal College Sustainability Work Group

International Organization with GGHH forum and Annual CleanMed Conference

IAPB Environmental Sustainability Work Group

#ClinicallySustainable @CassandraLThiel
Other Ophthalmology Sustainability Events and Groups

International Agency for Prevention of Blindness (IAPB)

Newly formed Sustainability Working Group
Their 2020 General Assembly in Auckland New Zealand will have a “Sustainability” theme

Aravind Eye Hospital in Pondicherry hosting a summit on “Eye Care Delivery and Environmental Impact – Creating Environmentally Sustainable Eye Care Delivery”

21 & 22 September, 2018

#ClinicallySustainable
@CassandraLThiel