Medical Tourism and the Medical Industry in the Asia Pacific

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Apollo Hospitals Group
GLOBALIZATION

THE WORLD IS FLAT

1. Wall came down (11/9/89 - Berlin Wall came down)
2. Netscape went public
3. 90s revolution in software
4. dot com boom
5. Open sourcing
6. Offshoring
7. In sourcing
8. Supply chain
9. N-ordering
10. The steroids

11. 8/9/95 - Chinese cement down an oil well
12. Demand surging
13. China/ Taiwan
14. TEST - No two members within the same global supply chain will go to war with each other
15. Another window to look world through
16. A country is a company
17. Individual appetite
18. Secret sauce: where innovation happens matters
19. Unstructured: global view

10 FACTORS CONVERGE:
1. 10 factor converges
2. Horizontalization → adapters
3. 3 billion people on playing field → fall of wall

CONVERGENCES:

Thomas L. Friedman on The Charlie Rose Show discussing his book, "The World is Flat" • 04.05.08
graphic facilitation by Brandy Agerbeck • LooseTooth.com
Healthcare globalization – developed nations

US

Out-of-pocket expenses: 18% of 250 million insured Americans not qualified for certain procedures

Uninsured: 47 million uninsured Americans in 2006

Cost-cutting: Health plans and Companies are seeking ways to reduce costs
Healthcare globalization – developed nations

Canada
7 – 9 months waiting time for an MRI
13,679 patients waiting for cataract surgery in British Columbia as on 31st March 2011

UK
NHS has a significant waiting list
Healthcare globalization – developing nations

Lack of expertise and tertiary care facilities in underdeveloped and developing nations of Africa, Middle East, South Asia and CIS

Aging population increasing
Worldwide Medical Tourism Industry

Source: McKinsey & Company and CII
The key providers of medical tourism

- Americas
  - Canada
  - US
  - Mexico
  - Costa Rica
  - Barbados
  - Brazil

- Europe / Middle East/ Africa (EMEA)
  - Czech Rep.
  - Hungary
  - UK
  - U.A.E
  - Thailand
  - Malaysia
  - Singapore

- South / South East Asia
  - India
  - Philippines
  - Australia
  - S. Africa

Source of medical tourists for South / SE Asia: Providers of treatment

The Boston Consulting Group
Medical tourism Asia Pacific

Growing at 20 to 30 percent

Thailand
Singapore
India
South Korea
Malaysia
Phillipines
Thailand

1.2 million foreigners visited hospitals in 2009

*International Medical Travel Journal: News January 2010*

60% patients at Bumrungrad Hospital and 40% at Samitivej Hospital are foreigners

*Medical Tourism: The Asia Chapter*

*Deloitte 2008*
Singapore

3,70,000 medical tourists in 2008

*International Medical Travel Journal: News October 2010*
Number of foreign patients in Malaysia tripled from 2001 to 2006 reaching nearly 3,00,000 and generating a revenue of US $ 59 million in 2006

Growth projected at 30%

Medical Tourism: The Asia Chapter
Deloitte 2008

4,25,500 medical tourists in 2009

International Medical Travel Journal: News April 2011
South Korea

In 2008, the country received around 25,000 foreign medical tourists, an impressive increase of more than 56% from previous year (2007).

“Emerging Medical Tourism in South Korea” RNCOS

The medical tourism market in South Korea is projected to grow at a CAGR of around 30% during 2010-2012

“Asian Medical Tourism Analysis (2008-2012) RNCOS”
India

Medical tourism will generate US$2.4 billion during 2009–2012 for India by attracting 1.1 million health tourists, up from 150,000 in 2002

Confederation of Industries (CII)-McKinsey 2009

27% growth rate predicted for medical tourism in India

Deloitte
The value proposition of a medical traveler

Quality
Service
Cost
Quality

Modern infrastructure
World class processes
Contemporary technology
International accreditation
Well qualified, English speaking doctors
Published outcomes
Quoted above is an ancient and perhaps, the most unique Sanskrit saying, meaning, quite simply - "A guest must be treated as God".
Cost advantage

Medical treatment at one tenth the cost in the U.S. with comparable care and clinical outcome after including travel cost
## Medical value travel – the cost advantage

<table>
<thead>
<tr>
<th>PROCEDURE (All costs in USD)</th>
<th>USA</th>
<th>India</th>
<th>Thailand</th>
<th>Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart bypass</td>
<td>80K - 130K</td>
<td>6.7K - 9.3K</td>
<td>11K</td>
<td>16.5K</td>
</tr>
<tr>
<td>Heart valve replacement</td>
<td>160K</td>
<td>9K</td>
<td>10K</td>
<td>12.5K</td>
</tr>
<tr>
<td>Angioplasty</td>
<td>57K</td>
<td>5K - 7K</td>
<td>13K</td>
<td>11.2K</td>
</tr>
<tr>
<td>Hip replacement</td>
<td>43K</td>
<td>5.8K - 7.1K</td>
<td>12K</td>
<td>9.2K</td>
</tr>
<tr>
<td>Hysterectomy</td>
<td>20K</td>
<td>2.3K - 6K</td>
<td>4.5K</td>
<td>6K</td>
</tr>
<tr>
<td>Knee replacement</td>
<td>40K</td>
<td>6.2K - 8.5K</td>
<td>10K</td>
<td>11.1K</td>
</tr>
<tr>
<td>Liver Transplantation</td>
<td>300K</td>
<td>60K</td>
<td>80K</td>
<td>90K</td>
</tr>
</tbody>
</table>
Holistic medical destination

Asia Pacific offers not just treatment but spiritual and mental healing as well

Alternative therapies

Ayurveda
Naturopathy
Homeopathy
Yoga
Apollo - integrated seamless healthcare delivery system

- Third Party Administration and Health Insurance
- Technology Services & Solutions
- Franchise Primary Care Clinics
- CSR SACH | SAHI
- Retail Pharmacies
- Project Consulting
- Owned & Managed Hospitals
- Health Education & e-Learning
- Not for profit
  Education
  Research
  Emergency Network
- Clinical Research & Site Management
Clinical excellence
State of art healthcare infrastructure
Latest technology

3 Tesla MRI
PET-CT
Cyberknife
Novalis
320 Slice CT
Continuous quest for excellence

7 JCI accredited Apollo hospitals

Delhi (first JCI accredited hospital in India)
Chennai
Hyderabad (first JCI accredited stroke program in the world)
Ludhiana
Dhaka
Bangalore
Kolkata
Clinical excellence

Best clinicians
Consultant report cards
Clinical practice guidelines
Clinical pathways
Clinical performance indicators for individual consultants
Quality indicators for clinical services
Best practices
Departmental reviews
Performanometer
Accreditation
Apollo Medicine Journal
Grand rounds
Apollo clinical excellence forum
Research promotion
Apollo Gold Medals
Clinical excellence dashboard – ACE @ 25
Apollo Quality Program
The best clinicians

Initiated reversal of brain drain

4000 consultants

70% of our consultants have trained overseas

They needed a clinical as well an academic and research environment
## Clinical practice guidelines

<table>
<thead>
<tr>
<th>Specialty Stream</th>
<th>CPG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anesthesia</td>
<td>Pain Management</td>
</tr>
<tr>
<td>Cardiology</td>
<td>Acute Myocardial Ischemia</td>
</tr>
<tr>
<td>Cardiac Surgery</td>
<td>Coronary Artery Bypass Graft</td>
</tr>
<tr>
<td>General Pediatrics</td>
<td>PUO and Antibiotic Management</td>
</tr>
<tr>
<td>Neuro Surgery</td>
<td>Glioma</td>
</tr>
<tr>
<td>Gastric Surgery</td>
<td>Variceal Bleed</td>
</tr>
<tr>
<td>Endocrinology</td>
<td>Type 2 Diabetes Mellitus</td>
</tr>
<tr>
<td>ENT</td>
<td>Tonsillectomy</td>
</tr>
<tr>
<td>Thoracic Surgery</td>
<td>Empyema</td>
</tr>
<tr>
<td>Transplant Surgery</td>
<td>Renal Transplant</td>
</tr>
<tr>
<td>Neurology</td>
<td>Seizure Management</td>
</tr>
<tr>
<td>Medical Oncology/Pediatric Oncology</td>
<td>Acute Lymphoblastic Leukemia</td>
</tr>
<tr>
<td>Pediatric Surgery</td>
<td>Exploratory Laparotomy for Acute Abdomen</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>Fulminant Hepatic Failure</td>
</tr>
</tbody>
</table>
Clinical pathways

CABG
Laparoscopic cholecystectomy
TURP
Total abdominal hysterectomy
Stroke
GI bleed
Total knee replacement
# Performance indicators for consultants

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Performance Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiology</td>
<td>Aspirin at arrival</td>
</tr>
<tr>
<td></td>
<td>Discharge instructions given to heart failure patients</td>
</tr>
<tr>
<td>Cardiac Surgery</td>
<td>OT Return rates within same day</td>
</tr>
<tr>
<td>General Surgery</td>
<td>Operating times in laparoscopic cholecystectomy</td>
</tr>
<tr>
<td>Gynecology</td>
<td>Post-operative length of stay for hysterectomies</td>
</tr>
<tr>
<td>Neonatology</td>
<td>Mortality rates</td>
</tr>
<tr>
<td>Neurology</td>
<td>Stroke readmission rate</td>
</tr>
<tr>
<td>Neurosurgery</td>
<td>Craniotomy re-exploration rates</td>
</tr>
</tbody>
</table>
ALOS post chemotherapy for CA breast

Consultant

Individual Average — Linear (Departmental Average)
Quality Indicators for clinical services

- Initial patient assessment within 60 min
- Lab reports delayed per 100 lab tests
- Repeat samples per 100 lab tests
- Unplanned returns to surgery
- Recovery room delays > 2 hrs
- Consumption of restricted antibiotics
- Complications in anesthesia
- Transfusion reactions
- Adverse reaction in patients undergoing clinical trials
Unplanned Returns to Surgery

Unplanned Returns per 100 Surgeries
Mean (0.23)

UCL (3Sigma): 0.88
LCL (0)
Mean-2 SD (0)
Mean+2 SD (0.67)
CR (0.04)
ACE @ 25

25 parameters assessed against international benchmarks

Apollo Light House
International benchmarks

Cleveland Clinic
Mayo Clinic
National Healthcare Safety Network
Massachusetts General Hospital
AHRQ US
Columbia University Medical Center
US Census Bureau

National Kidney Foundation Disease Outcomes Quality Initiative (NKF KDOQI)
CABG mortality rate

Benchmark: 0.60%

Numerator : Number of in-hospital deaths after CABG

Denominator: Total number of CABG conducted

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Benchmark</th>
<th>Range</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABG mortality rate</td>
<td>0.60%</td>
<td>≤0.80</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.81-1.20</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.21-1.60</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.61-2.00</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt;2.00</td>
<td>0</td>
</tr>
<tr>
<td>Parameters</td>
<td>Bench Mark</td>
<td>Reference</td>
<td>Max Score</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------</td>
<td>----------------------------</td>
<td>-----------</td>
</tr>
</tbody>
</table>
| Complication rate post coronary intervention  | 2%         | A J of Therapeutics US     | 4         | ≤ 2
                                                        |            |                            | 2.67 - 3.33 | 4
                                                        |            |                            | > 4        | 2
                                                        |            |                            | > 4        | 0
| ALOS post microdisectomy                       | 3 days     | Singapore General Hospital | 4         | ≤ 3
                                                        |            |                            | 3.51 - 4.00 | 4
                                                        |            |                            | > 4.5      | 2
                                                        |            |                            | > 4.5      | 0
| Complication rate TURP                         | 2%         | Europian Urology Vol 50 Nov 2006 | 4         | ≤ 2
                                                        |            |                            | 2.21 - 2.85 | 4
                                                        |            |                            | > 3.33     | 2
                                                        |            |                            | > 3.33     | 0
| Catheter Related Blood Stream Infection (CR-BSI)| 2.79       | National Healthcare Safety Network | 5         | ≤ 2.79
                                                        |            |                            | 3.35 - 4.01 | 5
                                                        |            |                            | > 5.78     | 3
                                                        |            |                            | > 5.78     | 0
| Catheter related UTI (CR-UTI)                  | 4.02       | National Healthcare Safety Network | 3         | ≤ 4.02
                                                        |            |                            | 4.03 - 4.82 | 3
                                                        |            |                            | > 5.79     | 2
                                                        |            |                            | > 5.79     | 0
ACE @ 25

Maximum score attainable 100

Over all hospital cumulative scores

> 75  Green
50 to 75  Orange
< 50  Red
Apollo clinical audit team

Standardization of methodology of data collection and validation of data reporting through ACE @ 25 audits

Twenty auditors nominated by Group Hospitals

Auditors travelled by air, train and bus covering 34676 km over 44 days to locations across the length and breadth of India and the region
<table>
<thead>
<tr>
<th>Group</th>
<th>%age Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>92.8</td>
</tr>
<tr>
<td>Group B</td>
<td>84.1</td>
</tr>
<tr>
<td>Group C</td>
<td>75.4</td>
</tr>
<tr>
<td>Overall Apollo Group</td>
<td>85.2</td>
</tr>
</tbody>
</table>
Average monthly scores for all Group Hospitals
Research

350 global multi – centre trials
Central IRB
Courses in clinical research
Stem cell bank at Ahmedabad
Cell and Molecular Biology Research Centre
Phase I Centre
Reference Interval study
Recognition by the Government of India as a research institution
Apollo Fellows
Research Grants
Recognition of published papers
Apollo Medicine Journal
Academics

DNB
Royal Colleges
PGDCC
Medvarsity
Foreign Trainees
University of Queensland
University of Sydney
Service excellence
The Apollo Way

A new platform at Apollo to offer better patient experience through improved services

An operations improvement programme

Deliver and sustain “Apollo Way benchmark” performance around key operational metrics

Through process improvement and capability building
Voice Of Customer is a Customer Feedback Programme being run by Indraprastha Apollo Hospitals. Each patient is asked for a feedback at the time of discharge on an especially designed feedback form consisting of 40 odd questions. Each question is marked on scale of 1 to 5. On the basis of Voice Of Customer, the scores of specialties, services and floors are tracked on a weekly and monthly basis.
THE TEN COMMITMENTS OF APOLLO TLC

- My way of touching a billion lives
- My unwavering dedication to patient care
- My relentless commitment to patient delight
- To be the hallmark of service standards
- To be more compassionate and more humane
- To be the touch that heals
- To always deliver more than promised
- To spread the positive energy of love & hope
- To leave an indelible impression in the patient's life
- To lead the revolution of care
Cost
Cost control

Centralized purchase of supplies
Six day week
Better utilization of resources
HR cost
Global recognition creating global hope

India’s low-cost patient care earns plaudits in US study
- Duke University
Wed, Sep 10 2008

India’s Healthcare Industry to See Mammoth Growth
- Mc Kinsey
Wed, Jun 27 2007

India's New Coup In Outsourcing: Inpatient Care
The Wall Street Journal, April 26, 2004
I wanted to take the time to write you and your *International Marketing Dept.* to tell you what a marvelous service you have offered us. My brother Kevin and I came to India for a *liver transplant.* My brother being the recipient and myself the donor. This is a *huge operation* and it was so important when you are coming to India from so far away for procedures that can be scary.

I didn't get to meet your whole team so the praise I would like to share is all for you. Rekha was one of the kindest people I have ever had the pleasure to meet. She went far and beyond any expectation we could have had. Escorting me to all of my tests prior to surgery, arranging transportation and food for myself first and then my husband when he arrived. You made an extremely hard and worrying experience so much easier. I consider you to be a sister and special friend for the rest of my life. I want you to pass this message on to your superiors because they need to know what special people they have working for them. I know that in the future you will be receiving many more North Americans and I can safely say they will be in the best of hands.

I wish other people to read and feel comfortable with their decisions of having procedures done in your country. I have included a picture of myself and you and also a picture of Mr Kevin as he looked yesterday for you to remember what a great thing you have helped accomplish.

Lots and lots of love,

Jo-Ann Hall
21st July 2007