Healthcare in India

- A Perspective
- The Fortis Story

Harpal Singh
24 October 2013
Presentation Flow

Indian Healthcare – A Perspective

Challenges & Opportunities

Some Innovations

The Fortis Healthcare Story
India - A Nation of Many Dimensions

A Growing Economic Powerhouse
• World’s third largest economy (PPP)
• Largest democracy and 2nd highest population
• Third largest standing army force and second largest labor force

But Facing Several Challenges
• Largest concentration of people below World Bank poverty line ($1.25/day)
• Ranked 127 in per capita GDP (PPP)
• Ranked 136 in UN Human Development Index
India - A Nation of Many Dimensions

Significant growth in last decade
• Vibrant and multi-pronged private sector
• A large and growing middle class – 300 mn
• Largest school going population
• Health receiving national attention
• Growth in high-end tertiary care and new deliver models

But Socio-Economic Challenges Exist
• 48% of children under 5 malnourished

• Almost one million deaths annually from contaminated water or polluted air

• Accessibility and affordability of healthcare a challenge especially in rural areas
India - A Nation of Many Dimensions

Aggressive policy making to improve socio-economic parameters

- Right to Education (RTE) to ensure primary education for all
- Food security (NFSB) through subsidized food grain for two-thirds of pop.
- Right to information (RTI) to ensure transparency in govt. activities

Unrealized implementation

- Slow reduction in actual poverty (from 37% in 2004 to 30% in 2010, Tendulkar Committee)
- Limited punishment for non-compliance
- Efficiency adversely affected because of red-tapism and systemic delays
- Delivery system leakages add to cost and delay implementation
Indian Healthcare - Some Disquieting Facts

- 57% of children under 5 are underweight
- 1.72 million children die every year before turning one
- Only 43.5% young fully immunized
- 20% of world’s disease burden but only 6% beds and 8% doctors
- India adds 16 mn people every year – more than double the population of Switzerland
- Only 25% of population has drinking water on premises
Total Healthcare Market Size

Market Breakup

- Healthcare market in India (% share)
  - Hospital: 3%
  - Pharmaceuticals: 4%
  - Medical Devices: 9%
  - Medical Diagnostics: 13%
  - Medical Insurance: 71%

Growing at a CAGR of 18%

- 2006: $28 billion
- 2009: $36 billion
- 2012: $65 billion
- 2015: $107 billion
- 2018: $175 billion
- 2022: $288 billion

Total Healthcare Market Size ($ Billion)
Healthcare as % of GDP

- USA: 13.4% (2000), 17.6% (2010)
- France: 10.1% (2000), 11.7% (2010)
- India: 4.3% (2000), 3.7% (2010)

Huge Growth Potential
Expenditure on Healthcare Per Capita (PPP)

*figures in USD

Brazil: 921
Russia: 1043
India: 124
China: 347
South Africa: 930
Japan: 3045

India spends low
China spends 3 times more
Japan spends 25 times more

*figures in USD
**Health Infra - Well Below Global Average**

### Physicians/1000 population

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<tbody>
<tr>
<td></td>
<td>2.42</td>
<td>2.14</td>
<td>1.39</td>
<td>0.59</td>
<td>0.7</td>
</tr>
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</table>

**CAGR = 3.5%**

### Nurses/1000 population

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<tbody>
<tr>
<td></td>
<td>9.82</td>
<td>4.14</td>
<td>2.9</td>
<td>0.47</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**CAGR = 26.0%**

### Beds/1000 population

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<tbody>
<tr>
<td></td>
<td>3</td>
<td>13.7</td>
<td>3</td>
<td>0.9</td>
<td>1.3</td>
</tr>
</tbody>
</table>

**CAGR = 7.6%**
**Private Sector Dominant in Delivery**

<table>
<thead>
<tr>
<th>Region</th>
<th>Health Expenditure as % of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>America</td>
<td>14.40%</td>
</tr>
<tr>
<td>Europe</td>
<td>9.30%</td>
</tr>
<tr>
<td>Africa</td>
<td>6.50%</td>
</tr>
<tr>
<td>Western Pacific Region</td>
<td>6.50%</td>
</tr>
<tr>
<td>Eastern Mediterranean Region</td>
<td>4.70%</td>
</tr>
<tr>
<td>India</td>
<td>4.30%</td>
</tr>
<tr>
<td>South East Asia</td>
<td>3.80%</td>
</tr>
</tbody>
</table>

- **Private, 70%**
- **Public, 30%**
- **1.3 % of GDP**
- **3.0 % of GDP**
Delivery - Infrastructure Mismatch

- Urban
  - Max concentration of high quality health facilities
  - Corp. Hospitals

- Semi Urban
  - Largely unorganized players
  - Variable quality

- Rural
  - Unregulated and uncertified
  - Government facilities ill-equipped

- 32% of population
- 85% of resources
- 68% of population
- 15% of resources
Key Healthcare Growth Drivers - Demographic

**Population growth**
- 1.2 bn in 2012
- 1.4 bn in 2026

**Geriatric population**
- Japan
  - 32 mn in 2012
- India
  - 70 mn in 2012
  - 118 mn by 2020

**Growing middle class & disposable incomes**
- 300 mn in 2012
- 583 mn in 2025
Key Healthcare Growth Drivers - Economic

Rise in disposable income: ten-fold increase in middle class citizens between 2005-2025

Increasing insurance penetration: from 16% now to 50% by 2033

100% Foreign Direct Investment permitted in Healthcare

Govt. to double healthcare spend from 1.2% to 2.5% of GDP by FY2017
Key Healthcare Growth Drivers - Others

Growing Awareness
- Good health a priority
- Patients increasing preference for quality

Lifestyle
- Expected increase in lifestyle-related diseases

New Approaches
- PPP and other initiatives
- Innovative business models
- Penetration in relatively unexplored semi-urban and rural areas
### Japan vis-à-vis India – A Snapshot

<table>
<thead>
<tr>
<th>Economic Criterion</th>
<th>Japan</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ 9.5% of GDP spend on healthcare</td>
<td>▪ 4.3% of GDP spend on healthcare</td>
<td></td>
</tr>
<tr>
<td>▪ 2.06 physicians per 1,000 pop.</td>
<td>▪ 0.7 physicians per 1,000 pop.</td>
<td></td>
</tr>
<tr>
<td>▪ 13.7 beds per 1,000 pop.</td>
<td>▪ 1.3 beds per 1,000 pop.</td>
<td></td>
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<table>
<thead>
<tr>
<th>Demographic Details</th>
<th>Japan</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Infant mortality rate: 2.17/1000 live births</td>
<td>▪ Infant mortality rate: 44.6/1000 live births</td>
<td></td>
</tr>
<tr>
<td>▪ Life expectancy: 84.19 yrs</td>
<td>▪ Life expectancy: 67.5 yrs</td>
<td></td>
</tr>
<tr>
<td>▪ Pop. Growth Rate: -0.1%</td>
<td>▪ Pop. Growth Rate: 1.51%</td>
<td></td>
</tr>
<tr>
<td>▪ % of pop. above 65 years: 24.8%</td>
<td>▪ % of pop. above 65 years: 5.7%</td>
<td></td>
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Large unaddressed agenda
Indian Healthcare – A Perspective

Challenges & Opportunities

Some Innovations

The Fortis Healthcare Story
### Health Challenges & Emerging Solutions

<table>
<thead>
<tr>
<th>Access</th>
<th>Affordability</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 70% of population access 15% resources</td>
<td>- 16% of population have health insurance</td>
<td>- Low focus on quality/accreditation</td>
</tr>
<tr>
<td>- 46% patients travel over 100 kms for care</td>
<td>- ~65% expenditure on healthcare out of pocket</td>
<td>- Inadequate monitoring</td>
</tr>
<tr>
<td>- Only 50% beds functional and relevant</td>
<td>- Healthcare major cause of debt amongst poor</td>
<td>- Limited good quality educational institutions</td>
</tr>
<tr>
<td>- Poor primary care</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Health Challenges & Emerging Solutions

## Dual Burden & Rising Expectations

- 62% of all deaths attributed to NCDs
- Communicable diseases
- Rising expectations
- Awareness fuelling demand for better quality

## Silver Linings

- Universal Health Care Scheme
- National Rural Health Mission
- Urban Heath Mission
- National Health Insurance Program (RSBY)
- Growing use of technology
- Expanding infrastructure - large government and private investment
Opportunities - Private Care Preferred by Patients

Better infrastructure

More responsive

Better Quality

Corporate hospitals providing world class care

Concerns:
- Higher cost hence more expensive
- Over charging – more procedures
- Available only to a small, well-to-do, patient base
Opportunities Across the Value Chain

Different Delivery Models

- Hospital chains
- Single specialty
- Public private partnership

Use of Technology

- Electronic health records
- Devices

Process Upgrade

- Improving quality
- Improving productivity
- Improving efficiency
- Improving patient responsiveness

- FOS

- SAP

- PACS

Network Solutions, Inc.
Opportunities - Low Penetration of Medical Technology

No. of CT & MRI Scans per 1 million of population

Huge upside for technical penetration

HI: High Income | UMI: Upper Middle Income | LMI: Lower Middle Income
India a good destination for both

Medical Tourism
- For well being & Cosmetic procedures
- Traditional medical practices a big draw – yoga, ayurveda, allopathy, meditation, etc.

Medical Value Travel (MVT)
- People Travel to obtain value for medical reasons
- Led by quality, cost, competence, waiting period and responsiveness
- Price of heart Surgery in India ~$2500 against ~$100,000 in US
- Corporate hospitals driven
## Medical Tourism/Value Travel - Rapidly Expanding Market

**Market Size (in $ bn)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2015 (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Size</td>
<td>1.9</td>
<td>5.0</td>
</tr>
</tbody>
</table>

**No. of Medical Travelers**

<table>
<thead>
<tr>
<th>Year</th>
<th>2011</th>
<th>2015 (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travelers</td>
<td>850,000</td>
<td>3,000,000</td>
</tr>
</tbody>
</table>

### Procedures and Costs by Country

<table>
<thead>
<tr>
<th>Country</th>
<th>United States</th>
<th>India</th>
<th>Thailand</th>
<th>Singapore</th>
<th>Malaysia</th>
<th>Panama</th>
<th>South Korea</th>
<th>Taiwan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coronary artery bypass surgery</td>
<td>$70,000-$133,000</td>
<td>$7,000</td>
<td>$22,000</td>
<td>$16,300</td>
<td>$12,000</td>
<td>$10,500</td>
<td>$31,750</td>
<td>$27,500</td>
</tr>
<tr>
<td>Bypass surgery with heart valve replacement</td>
<td>$75,000-$140,000</td>
<td>$9,500</td>
<td>$25,000</td>
<td>$22,000</td>
<td>$13,400</td>
<td>$13,500</td>
<td>$42,000</td>
<td>$30,000</td>
</tr>
<tr>
<td>Hip / Knee replacement</td>
<td>$33,000-$57,000</td>
<td>$7,200</td>
<td>$12,700</td>
<td>$12,000</td>
<td>$7,500</td>
<td>$5,500</td>
<td>$10,600</td>
<td>$8,800</td>
</tr>
</tbody>
</table>
Medical Travel – Things India Needs To Do

- **Build Infrastructure** – both medical and otherwise
- **Break the language barrier**
- **Make medical visa** processing faster and easier
- **Communicate** capabilities and opportunities globally
Indian Healthcare – A Perspective

Challenges & Opportunities

Some Innovations

The Fortis Healthcare Story
Innovation – Technology Driven

Transparency in Hospital Operations

Analytics & Efficiency
- Process
- Devices

Scale & Reach
- Website/Mobile Applications for e-Records
- mHeath
- Telemedicine
- Wearable Devices

Rapidly changing the bedrock of Healthcare in the country
Aravind Eye Care

- Founded in 1976 by Dr. Govindappa Venkataswamy
- 32 mn patients in 36 years
- 4 mn eye surgeries
- Integrated systems. For e.g. 2000 surgeries per surgeon per year - global average of 500
- Accredited to offer diplomas hence assuring continued quality

Model of Efficiency
Process & Cost Innovation

Narayana Hrudalaya

- Founded in 2000 by Dr. Devi Shetty
- Over 15,000 patients from over 25 countries
- Focus on volumes:
  - 19 OHS & 25 catheterization procedures daily, almost 8 times the average
  - 500 blood tests on a machine every day
- Basic open heart surgery at < $1750
- “Never turn away a patient for lack of funds”

High quality and volume at affordable prices
Swasthya Tablet (PHFI) – 98% job done at 5-10% cost
Devices

Low Cost Incubators for Infants

- Innovated by Dr. Sathya Jeganathan, it regulates the body temperature of infants
- Cost reduced from $2000 to $250

Tata Swach for Clean Water

- Developed by Tata Research Development and Design Centre (TRDDC)
- 3000 lts of safe drinking water in one cycle for $20 by killing 80% of bacteria
- Deployed in thousands post the 2004 Tsunami as part of relief activities
Future of Healthcare in India

India (can be) Like Japan

Intellectual firepower to improvise & master technology to make global products. Many research centres now in India, e.g. - GE, J&J, etc.

Receptive to technology. Eg. Mobile Phones (900 mn)

Huge numbers - opportunities of scale with attendant benefits. E.g.: Aadhar scheme
Future of Healthcare in India

- Mobile based
- Aadhar based

Applications for:
- Electronic Health Records of 1+ bn people
- mHealth/Telemedicine
- Wearable Devices
Indian Healthcare – A Perspective

Challenges & Opportunities

Some Innovations

The Fortis Healthcare Story
At Fortis, we address 75% of the Indian healthcare market

- First hospital at Punjab, Mohali
- Acquired Escorts chain of hospitals
- 48 hospitals ~7700 beds installed cap.
- Acquired 72% stake in SRL (Largest Diagnostics lab network)
- 22 hospitals ~2500 beds
- Listed Business Trust on Singapore Exchange
- 62 Hospitals with potential cap. of ~10,000 beds and >240 diagnostic centers

Growth Approach:
- Green Field
- Brown Field
- Acquisitions
- Management contracts
The Fortis Footprint

Hospital Business

Diagnostic Business

Presence across
~17 states
~35 cities

<table>
<thead>
<tr>
<th></th>
<th>India</th>
<th>International</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Labs</td>
<td>6</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Pathology &amp; Radiology Labs</td>
<td>228</td>
<td>-</td>
<td>228</td>
</tr>
<tr>
<td>Wellness Centres</td>
<td>21</td>
<td>-</td>
<td>21</td>
</tr>
<tr>
<td>Collection Centres</td>
<td>1231</td>
<td>37</td>
<td>1268</td>
</tr>
</tbody>
</table>
The Fortis Business Model

Geographies
- Primary focus: India and select markets in Asia

Multiple Vertical Presence
- Primary Care
- Secondary Care/Day Care Specialty
- Tertiary Care
- Quaternary Care
- Diagnostics

Clinical Excellence
- Cardiac Sciences
- Neuro Sciences
- Orthopaedics
- Colorectal
- Oncology

Integrated Healthcare Company

- 62 Healthcare Facilities
- ~ 4,100 Operational Beds
- ~ 10,000 total potential bed capacity
- ~ 600 Primary Care centers
- >240 Diagnostics Laboratories
Presence Across the Delivery Value Chain

- India, Singapore
- India, Mauritius, Sri Lanka
- India
- India
- India, Singapore, Dubai, Sri Lanka, Nepal
Snapshot: The Fortis Advantage

Experience across the value chain

Unrivalled footprint across India & Asia

Standardization across locations

World class facilities with full time doctors instead of consultants
Annual Procedures Volume Done at Fortis

At Fortis, we touch more than two million lives every year\(^1\)....

Cleveland Clinic (CC) treats 14,000 cancer patients each year

3,000 heart surgeries per annum at CC – Fortis does double the numbers

Procedure Volumes FY 2012-13\(^2\)

1. Includes number of patients including IPD & OPD
2. Source: Fortis Network Procedure Volume Data
Fortis Operating System (FOS)

Predictable service

Service on time

Service for all

“Beyond satisfaction – an endeavor towards Patient Delight”
FOS – Efficiency Impact

Lab: Turn around Time for results*

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Baseline</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hosp A</td>
<td>7:38</td>
<td>1:03</td>
</tr>
</tbody>
</table>

**All machine based test – CHEM; HEM; COAG; SER; UA – this is around 78% of the total test done in a Lab**

ALOS

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Baseline</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hosp B</td>
<td>6.20</td>
<td>5.24</td>
</tr>
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% Discharges before 11:00 AM

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Baseline</th>
<th>Current</th>
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</thead>
<tbody>
<tr>
<td>Hosp C</td>
<td>9%</td>
<td>66%</td>
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</table>

**Time taken after the investigation is complete (OPD patients)**

Radiology: % of USG reports within 15 min**

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Baseline</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hosp D</td>
<td>13%</td>
<td>91%</td>
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Innovation at Fortis - Focus

- Making optimal use of high investment resources
- Providing world class delivery entailing finest skill and compassionate care to a large populace
- Technological integration and embracing innovation
- Standardization of clinical protocol
- Maximizing doctor productivity
Fortis Medical Innovations

CritiNext

- 24x7 critical care support & vital parameter monitoring across hospitals
- ICU beds across 5 cities connected
- > 30 lives saved
- 25,000 Critical Care consultations done so far
- 1,50,000 Smart Alerts sent
- 250 nurses & 30 doctors trained in new EMR system

A new edge to Indian critical care services
Fortis Medical Innovations

ICIP

- 105 beds, across 7 ICUs, first of its kind in India
- All vital parameters available real time online on different modalities
- Patient’s condition can be monitored remotely:
  - On the PC in office
  - On a wireless tablet during rounds
  - On the patient monitor at the bedside
  - On a home computer

Model of Technical Intergration
FMRI Gurgaon: A Next Generation Hospital

A Slew of “Firsts”

- Alternative therapies
- Wellness, Yoga
- Art therapy
- Spa, Gym, Pool
- Fortiplex: movie theater
- Food court & cafes
- International Check-in counter
- Potential bed capacity 1000
Fortis - Areas for Potential Association

Technology & Equipment Provision
Allowing Fortis to keep ahead of the curve

Process Innovations
Helping Fortis increase efficiency and customer satisfaction

Services
E.g.: Nighthawk in imaging services

Medical Value Travel/Medical Tourism
One stop destination with world class facilities
Namaste!

Thank You!