
DETAILED PROJECT REPORT

FOR

OPERATION & MANAGEMENT SERVICES

AT

BHARUCH HOSPITAL

Narayana Hrudayalaya Private Limited

Private & Confidential

December 18, 2012



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Executive Summary

Project Introduction

Borosil Glassworks Limited and GNFC are desirous of setting up a multi-specialty tertiary care hospital in Bharuch. The hospital would bridge the gap in accessibility to tertiary healthcare services in Bharuch and the nearby areas of Ankleshwar, Jhagdia, Dahej etc. The hospital would be equipped with state-of-the-art diagnostic and clinical facilities to provide best in class treatment to the local community.

The hospital would be located on a 6 acre land allotted for the purpose by GNFC.

Gujarat Borosil Limited (GBL), a USD 14.5 Million¹ company, is one of the premier manufacturers of glass ware in India. The Borosil brand is synonymous with quality and extensively used in laboratories, kitchenware, microwave-ware etc. The company commissioned first of its kind Low Iron Solar Glass Furnace on 16th March, 2010 giving it a major first mover advantage in the fast growing solar glass market segment in the country. GBL has an employee and worker strength of 426², not including contract labour.

Gujarat Narmada Valley Fertilizers & Chemicals Limited (GNFC), a joint sector enterprise promoted by the Government of Gujarat and the Gujarat State Fertilizer Company Limited (GSFC) set up in Bharuch, Gujarat in 1976. Initially, starting off as manufacturer of ammonia-urea fertilizers, GNFC has since diversified into areas such as chemicals, petro-chemicals and energy.

¹ Gujarat Borosil Limited, Annual Report FY 2011 - 12

² Gujarat Borosil Limited, Annual Report FY 2011 - 12

Overview of the NH Group

Providing high quality affordable healthcare to the masses

Narayana Hrudayalaya (NH) was established with a “*dream of making quality healthcare available to the masses worldwide*”.

Narayana Hrudayalaya Private Limited (headquartered in Bengaluru) was established in 2000 by the visionary Dr. Devi Shetty with the objective to provide quality affordable healthcare. Narayana Hrudayalaya was launched with one flagship multi-specialty hospital (Bengaluru) catering to a variety of illnesses and diseases.

Narayana Hrudayalaya is credited with the ‘Walmartization’ of healthcare. The Group currently performs over 30 cardiac surgeries daily at its flagship facility in Bangalore.

Dr. Shetty, an eminent cardiac surgeon trained in the UK, before returning to India in 1989. Prior to founding NH, Dr. Shetty played a pivotal role in setting up the cardiac surgery departments at BM Birla Heart Research Center and the Manipal Hospital. The NH Group provides high quality medical care at affordable prices to a

Passion makes all the difference.

One of India’s largest and one of world’s most economical health care service providers.

Narayana Hrudayalaya’s revenues have grown a whopping 464 per cent in the five years leading to 2011-12.

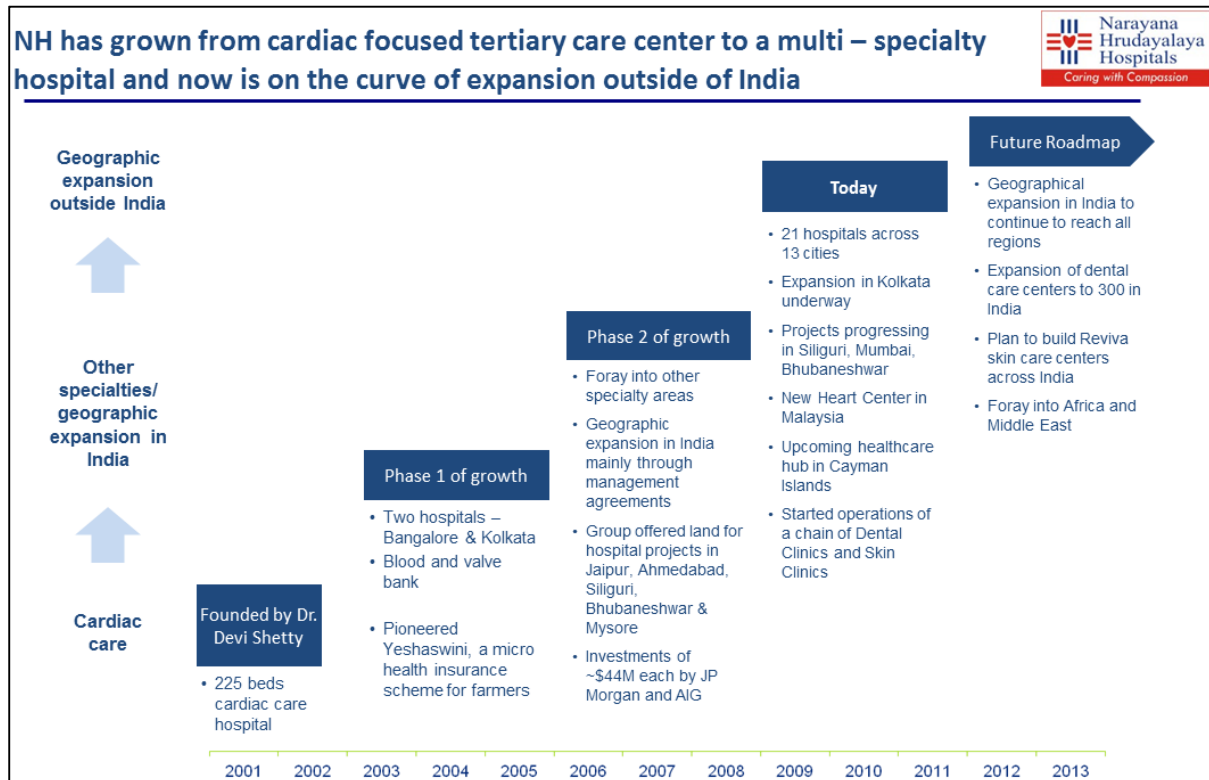
significant section of the society which cannot otherwise bear the excruciatingly high cost of modern healthcare. The Group has perfected the art of providing tertiary care to large volumes of patients at its hospitals. All of this is done while achieving outcomes comparable to international quality standards.

Narayana Hrudayalaya Group started off with a 200 bedded hospital in Bangalore in 2000. The Group has since grown rapidly to expand to 6400 beds across 21 facilities located in 13 cities across India. The Group will soon commence

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constructing its first facility outside India, at the Cayman Islands. Further, the Group is also setting up the first of its four cardiology centers in Malaysia. The international foray into Malaysia and Cayman Islands is the first step in achieving the Group's Ambition of becoming a global healthcare provider.



The NH Group today includes a chain of dental and cosmetology clinics 'Reviva' apart from multi-specialty hospitals located across the country. The expertise of the group lies in treating large volumes of patients and leveraging the volumes to bend the cost curve downwards through operational excellence and unwavering focus on clinical outcomes.

Project at a glance

The proposed hospital would be multi-specialty tertiary care unit. The hospital would have 150 beds in the first phase spread over a total built up area of approximately 1,00,000 sq. ft.

Land area requirement	6 acres
Total built-up area of the hospital	100,000 sq. ft.
Foot plate area	60,000 sq. ft.
Facility spread	Ground + 1 floor, total building height – 10 m (max.)
Total number of census beds	150 beds (in phase 1)

Facility Mix

The proposed hospital would accommodate about 20 outpatient consultation rooms, 5 nos. operating rooms and 40 intensive care beds. The women and child ward would consist of 2 delivery bays, labor ward with 6 – 7 beds and 8 nos. NICU / PICU beds.

Total number of census beds	150 beds
Total number of OPD rooms	20 rooms
Bed split	<ul style="list-style-type: none">ICU beds 40 bedsCasualty 10 bedsGeneral ward beds 40 bedsSemi-private beds 30 bedsPrivate beds 25 bedsDeluxe beds 05 beds
Operating Theatres	4 nos. major + 1 no. emergency gynecology OT
Emergency / triage	1 no. minor OT
Delivery bays	2 nos.

Typical area statement

AREA DESCRIPTION	AREA (SQ. FT.)
Consultation rooms	110 sq. ft.
Operating Theatres	450 - 550 sq. ft.
CATH Lab	450 sq. ft.
MRI	500 sq. ft.
CT Scan	450 sq. ft.
Endoscopy suite	400 sq. ft.
X-Ray /mammography	250 sq. ft.
Critical care areas (per bed)	120 – 130 sq. ft. per bed

Specialty Mix

The Bharuch market is deficient in tertiary care and super-specialty services. Hence, the proposed hospitals would be equipped with super-specialties and the requisite high end diagnostic and radiology facilities to ensure holistic and complete care to the patient under one roof.

Super-specialty services provided by the hospital	<ul style="list-style-type: none"> • Cardiology & cardiac-surgery • Neurology & neurosurgery • Medical & Surgical Gastroenterology • ENT • General surgery • Vascular & Endo-vascular surgery • Orthopedics • Urology • Nephrology • Women & child • Plastic surgery • Pediatric surgery • Other ancillary specialties
Prominent diagnostic facilities planned	<ul style="list-style-type: none"> • CATH Lab • 16 slice CT scan • 0.5 Tesla MRI • Digital x-ray • Mammography • Endoscopy suite • ECHO, TMT & ECG • Ultrasound • EEG, ENMG & Sleep lab • Lithotripsy • Audiometry

Project CAPEX Estimates

The proposed hospital shall be developed in phases, with 100,000 sq. ft. total built up area in Phase 1 accommodating a total of 150 beds. The cost of land has been considered at a nominal price of INR 200,00,000 at the rate of INR 200 per sq. ft. of built up area.

The detailed break up of costs shall be as follows –

Total built up area	sq. ft.	100,000
CAPEX ESTIMATES		
	Rate per sq. ft. (in INR)	Total cost (INR in lacs)
Land	200	200.00
Building	1000	1,000.00
Mechanical, Electrical & Plumbing	1200	1,200.00
Interior finishing & External development	500	500.00
Medical equipment	1,509	1,509.00
Non-medical equipment & furniture	190	190.00
Grand Total		4,599.00

Further, it is proposed that the hospital in Phase 1, shall be equipped in stages in line with the growth in occupancy levels to prevent lock in of capital in the initial stages itself.

CAPEX Breakup

The capital requirement for the project neglecting nominal cost of land works out to INR 43.99 Crores, out of which

Contribution from

- Narayana Hrudayalaya - INR 7.00 Crores
- Promoter - INR 36.99 Crores

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Project Timelines

The project timelines shall be as below. It is envisaged that the statutory clearances and licenses required prior to commencement of construction shall be worked upon and put in place before commencement of the construction at site.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Activity															
Architectural & MEP design	█	█													
Award of tenders		█	█												
Civil work				█	█	█	█	█	█	█	█				
Mechanical, Electrical & Plumbing									█	█	█	█	█		
Architectural finishing											█	█	█	█	
Hospital set up and operational readiness														█	█

Staffing Plan (Phase 1)

The proposed hospital shall be staffed in line with industry standards. Each specialty would have a super-specialist at the level of a senior consultant. Further, the staffing strategy would envisage having visiting consultants at a minimum of one per specialty to drive volumes and utilization initially.

The broad numbers for the man power grid (administrative and para-medical staff) is as follows –

Particulars	Year 1	Year 2	Year 3	Year 4
	No.	No.	No.	No.
Nurses	110	170	200	210
Physiotherapists	2	4	4	4
Residents	20	33	37	39
Technicians	22	36	40	43
Finance, HR, Purchase & Inventory, Maintenance Manager	4	4	4	4
Facility Director	1	1	1	1
Junior Executive	16	26	30	32
Senior Executive	6	10	11	12
Head Nursing	1	1	1	1
Head Medical services	1	1	1	1
Total	183	286	329	347

Proposed Operational Models

Fee for the design consultancy and project management services

It is proposed that NH is paid a lump sum amount of 1.5% of the total project cost for its support towards on design planning, project management and pre-operative commissioning of the hospital. In addition to this NH would be reimbursed actual costs incurred on travel and stay for its personnel providing support during the project phases. NH will do its best to minimize costs in this regard.

Proposed Operational Model – Model 1 Management Fee model

The promoter would be assisted by the NH group in running the operations of the hospital in return for a management fee.

- NH would provide management expertise to the promoter in operating a super-specialty hospital. Day to day operations of the hospital would be taken care of by NH
- The scope of services and benefits of associating with the NH group such as sourcing and supply chain advantages, talent acquisition, standard operating procedures etc. would be made available to the promoter by NH.
- The promoter would own the responsibility of the profit and loss account of the hospital.
- The payment to Narayana Hrudayalaya would be as follows –

Annuity: 2% of revenues towards costs incurred by NH on corporate overheads.	
Year 1 – Year 2	Fixed payment of INR 4 lacs per month
Year 3 – Year 4	1% of gross revenue plus 15% of the EBITDA.
Year 5 – Year 10	2% of gross revenue plus 15% of the EBITDA.
Year 11 – Year 20	3% of gross revenue plus 15% of the EBITDA.

- The term of the management agreement would be for a minimum period of 20 years with an option to extend further subject to mutual agreement.

Proposed Operational Model – Model 2 Profit & Loss owned by NH

In this model, the P&L responsibility would be owned by the Narayana Hrudayalaya group.

- NH would operate the hospital and own the responsibility for the profit and loss account of the operations.
- The promoter would invest on the capital expenditure incurred on the building, associated utilities and services, architectural finishes and the medical equipments. Any expansion of the infrastructure would also be invested by the promoter.
- All expenditure incurred on the day to day operations and the maintenance would be taken care by NH.
- All future expenditure for replacement/repair of medical equipment for the existing facility would be the responsibility of NH.
- The term of the agreement would be for a minimum of 20 years with a provision to extend further based on the mutual agreement of both parties.
- In return for the promoter's investment in the project, NH proposes a revenue share to the promoter such that there is a return of approximately 8% IRR on the total investment in the first 20 years of contract.
- The revenue share would be paid from the 2nd year onwards with the 1st year being a moratorium towards stabilizing the operations of the new unit.
- In addition, NH would also provide charitable and affordable care to the common man in line with its mission similar to that in its other group hospitals.

Projected Financials

General Assumptions

- 300 working days has been considered for revenue calculations.
- The capacity utilization matrix has been benchmarked based on NH's experience at its hospitals elsewhere and the market dynamics. The same has been considered as per the matrix below –

Year	Capacity Utilization
Year 1	30%
Year 2	50%
Year 3	65%
Year 4	75%
Year 5	78%
Year 6 onwards	80%

- Price increment year on year has been considered at 5%
- For the purpose of calculating revenue share to the promoter, revenue from implants has been considered at 10% of the gross revenues for calculating net revenues.

P&L Snapshot

Particulars	Construction Period	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Occupancy		30%	50%	65%	75%	78%	80%
REVENUE :							
<i>Surgical Revenue</i>	-	787	1,404	1,953	2,411	2,683	2,944
<i>Non Surgical Revenue</i>	-	84	150	209	258	287	315
<i>OPD Diagnostic, Pharmacy & Lab Revenue</i>	-	469	836	1,163	1,435	1,597	1,753
TOTAL REVENUE	-	1,340	2,390	3,324	4,104	4,567	5,012
Avg. revenue Per Occupied bed		30	32	34	36	39	42
COST :							
Variable Cost							
<i>Fees To Doctor</i>	-	590	813	997	1,149	1,142	1,253
<i>Medicines & Consumables</i>	-	536	717	997	1,149	1,279	1,403
<i>Other Variable Cost</i>	-	134	191	266	328	274	301
Fixed Cost							
<i>Salaries & Administrative Expenses</i>	-	536	717	898	1,108	1,187	1,303
TOTAL COST	-	1,796	2,438	3,158	3,735	3,882	4,260
EBITDA	-	(456)	(48)	166	369	685	752
EBITDA Margin (%)	-	-34%	-2%	5%	9%	15%	15%

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Some key points to be noted are as below –

- EBITDA break even period – Year 2
- Cumulative cash break even period – Year 4

Cash flows to Narayana Hrudayalaya & promoter

Year	Model 1: Management fee payment to NH		Model 2: Revenue share payout to promoter by NH	
	NH	Promoter	NH	Promoter
	All figures are INR in lacs			
Year 1	48	(504)	(515)	-
Year 2	48	(96)	(153)	105
Year 3	58	109	20	146
Year 4	95	274	80	289
Year 5	192	493	364	322
Year 6	211	541	399	353
Year 7	229	636	507	358
Year 8	240	668	532	376
Year 9	252	701	559	395
Year 10	265	736	587	415
TOTAL	1,638	3,558	2,379	2,758

Note:

- Promoter cash flows in Model 2 are estimated assuming net revenue share payout as below –

Year 1 – Year 3	5% net revenue share
Year 4 – Year 10	8% net revenue share
Year 11 – Year 20	10% net revenue share

- In Model 2, where in Profit & Loss is owned by Narayana Hrudayalaya, all replacement CAPEX shall be borne by NH.
- In Model 1, all cash flows to NH exclude the annuity payment of 2% towards its corporate overheads including branding, Information Technology license charges, central marketing support and SCM / procurement support.

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**An Overview
of the
Indian healthcare
Sector**

Indian Healthcare scenario

As per statistics published by the WHO, in 2008, the death-rate due to non-communicable diseases was approx. 55% in the age group of 15 – 60 years. Lifestyle related diseases such as cardio-vascular, cancer, gastro-intestinal and respiratory diseases contributed a major portion totaling to almost 85% of all deaths in this category.

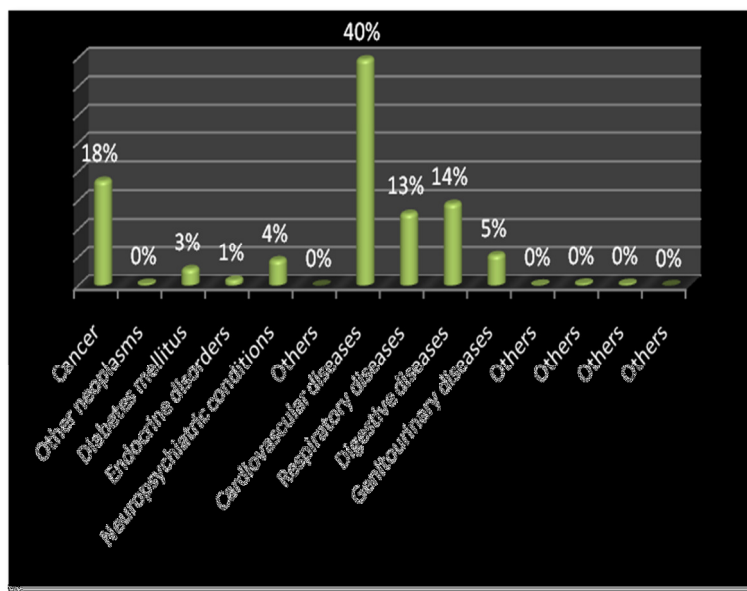


Figure 1: India Disease burden in age group 15 - 60 years
Source – WHO Statistics

A large part of this observation can be attributed to either the lack of access to tertiary healthcare or to the unaffordable nature of tertiary care.

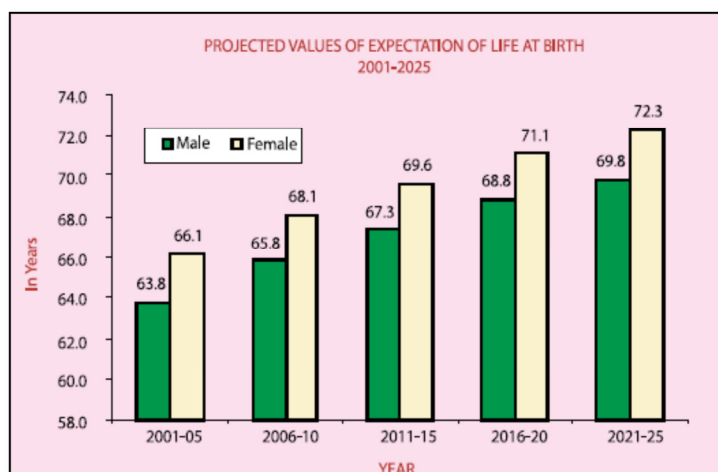


Figure 2: Projected life expectancy values at birth, India
Source: National Health Profile, 2009

The life-expectancy of Indians has been steadily increasing over the years and this combined with a slow and steady migration of young workforce to the cities and urban agglomerations has resulted in the increasing share of lifestyle disease

incidence. The projected life expectancy will be 70 years by the years 2025. On the other hand, the infant mortality rate is on a steady downward trend thanks to the improvements in medical technology and accessibility to primary care. However, it needs to be noted that the secondary and tertiary healthcare accessibility is still largely restricted to the metro and the larger Indian cities.

In short, Indians are living longer, steadily migrating to urban areas and are becoming more and more prone to lifestyle related diseases at a much earlier age than before.

On the other hand, the cost of healthcare has risen steeply over the years. The public spending on health by the Indian Government is one of the lowest in comparison to other nations, amounting to only 20%. 80% of the healthcare expenditure is borne by the public.

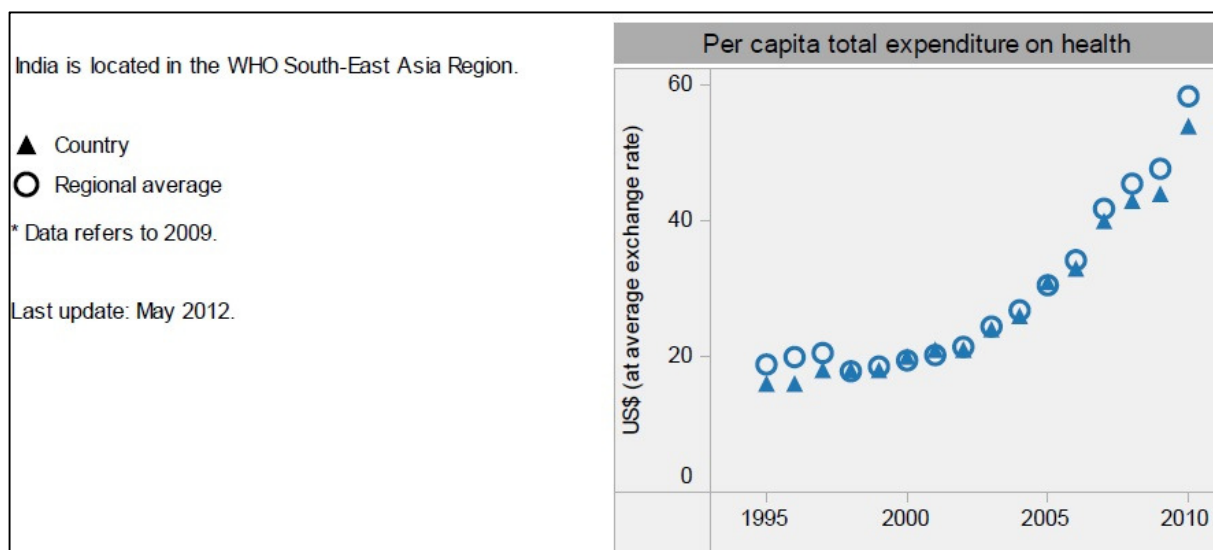


Figure 3: India Health Profile, WHO Statistics

The per-capita expenditure on health has seen a CAGR of 15% in the period 2005 – 2010. The cost of healthcare has grown at a pace greater than the inflation, thereby making access unaffordable to the common man.

Indian Healthcare vs. Global Standards

Indian healthcare has grown rapidly in the last three decades. Corporate groups have revolutionized the delivery of healthcare, by continuously benchmarking with global standards and striving to achieve international and national accreditation such as Joint Commission International, NABH etc.

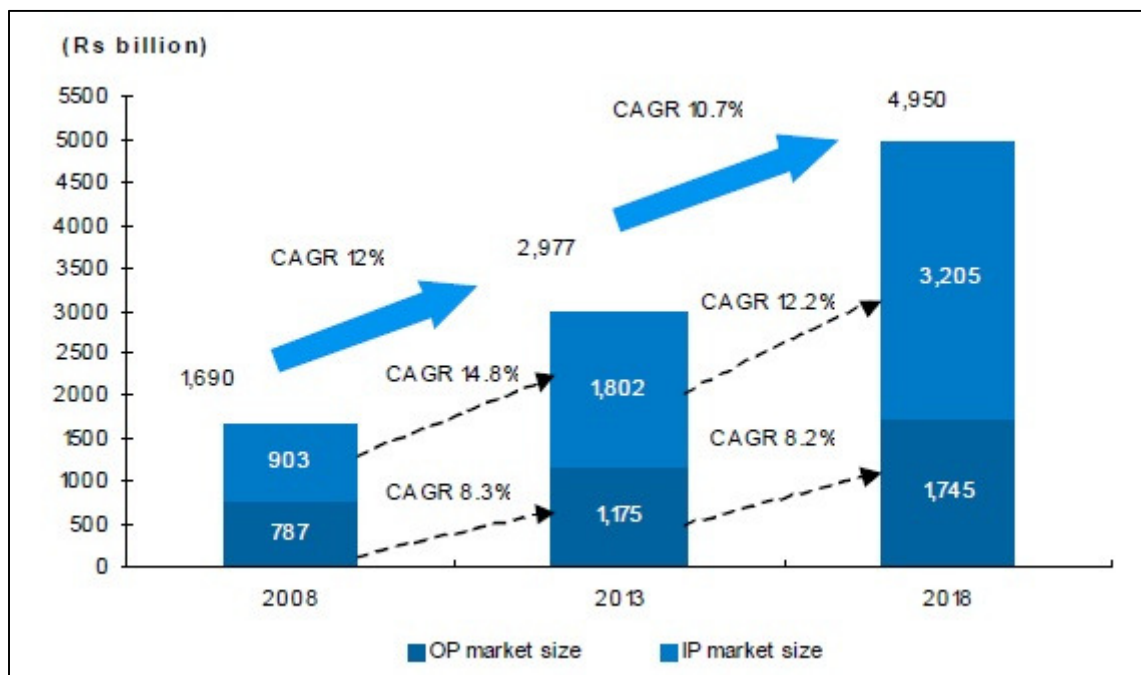


Figure 4: Indian Healthcare Delivery Market Size and Growth Projections, CRISIL Research

However, a lack of Government will to promote the growth of healthcare coupled with the presence of high entry barriers such as steep set up costs, shortage of medical professionals etc. have ensured that the reach of the corporate healthcare groups have remained largely confined to the metros and Tier I cities. India currently has approximately 0.9 beds per 1000 population compared to the global standards of 3.5 beds per 1000 population. This translates to an additional 0.81 million beds at an estimated investment of INR 2.1 Trillion by 2018.

The Indian middle class is expected to grow the most with the workforce in the age group of 15 – 59 years of age set to reach 325 million by the year 2050. The demand

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for health services aided by higher disposable income, greater insurance penetration and improved awareness levels are factors which are set to be the main drivers of the healthcare boom.

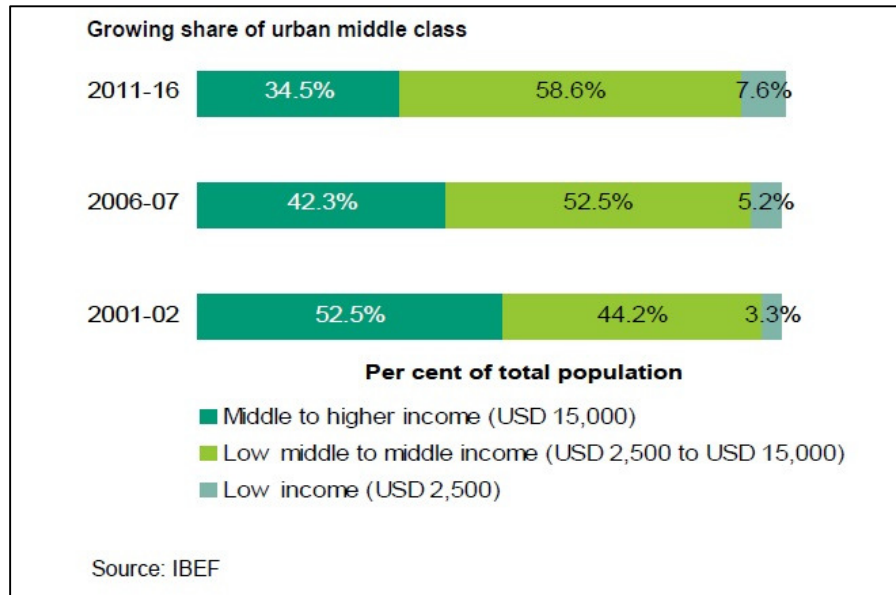


Figure 5: Growing share of Indian urban middle class
Source: IBEF Estimates

One other factor aiding the growth of healthcare is that India currently boasts of the

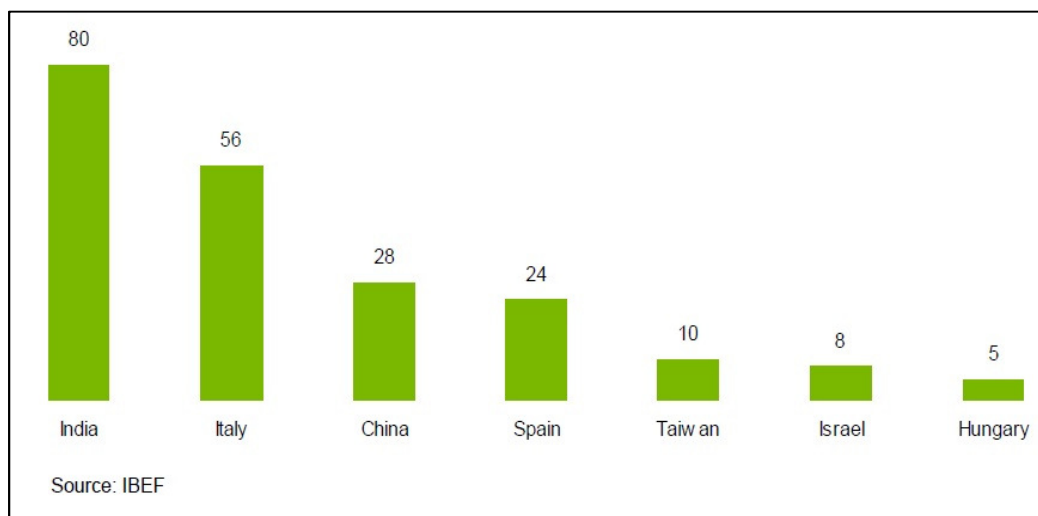


Figure 6: FDA approved drug manufacturing facilities statistics

largest number of US FDA approved drug manufacturing facilities outside of the US. While

these facilities currently focus on serving the lucrative US and European markets, eventually it can be expected that the strong domestic demand would be met by the production from these facilities. The prevalence of generics supported by mass market production strategies would aid to lower the cost of medicines and consumables for the Indian patient.

Industry Challenges

In 2011, India had about 313 medical colleges across the country offering about 34,000 under-graduate seats and approximately 16,000 post-graduate seats. The acute shortage of medical professionals has resulted in a skewed distribution with concentration of healthcare workers and doctors in the main cities. For e.g. Bihar had a patient to doctor ratio of 3400:1 as compared with the Indian average of 1700:1.

The figure below illustrates the fact that an estimated 100 new medical colleges if opened every year for the next five years would result in India achieving the global patient to doctor ratio standard of 500:1 by 2025.

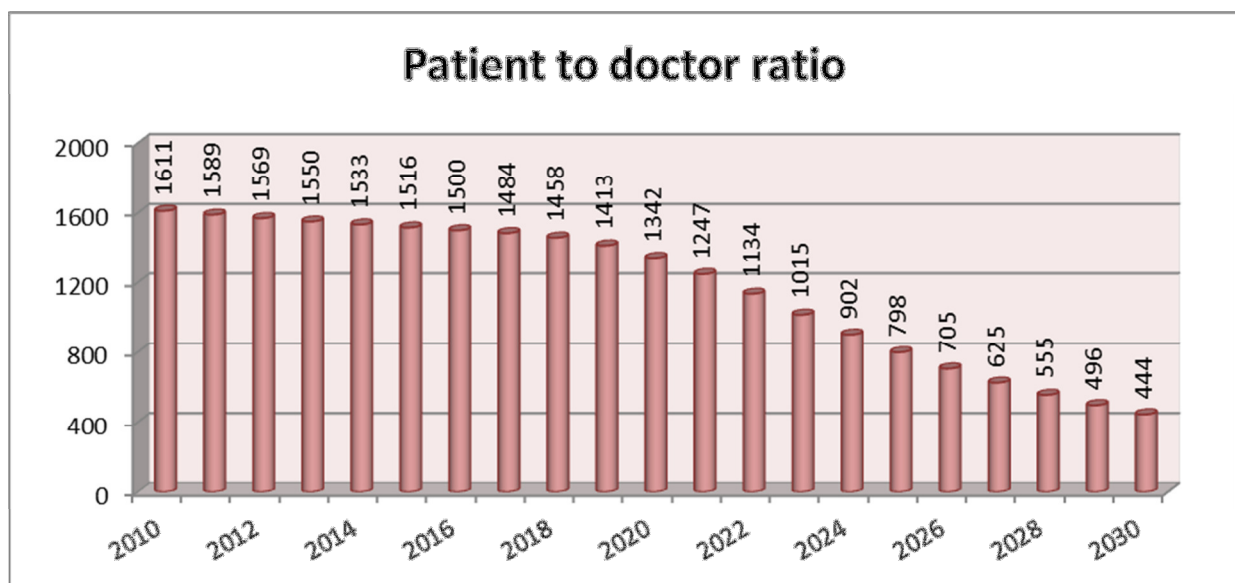


Figure 7: India – projected patient to doctor ratio
(Assuming an addition of 100 new medical colleges for the next 05 years)

The medical colleges across the country are skewed in distribution and offer inadequate number of admissible seats, leading to alienation of students from states in the East and North-Eastern part of the country due to widespread disparities in the standard of

The Eastern part of the country has only 12% of all medical colleges present in India.

education and uneven competing landscape for these students.

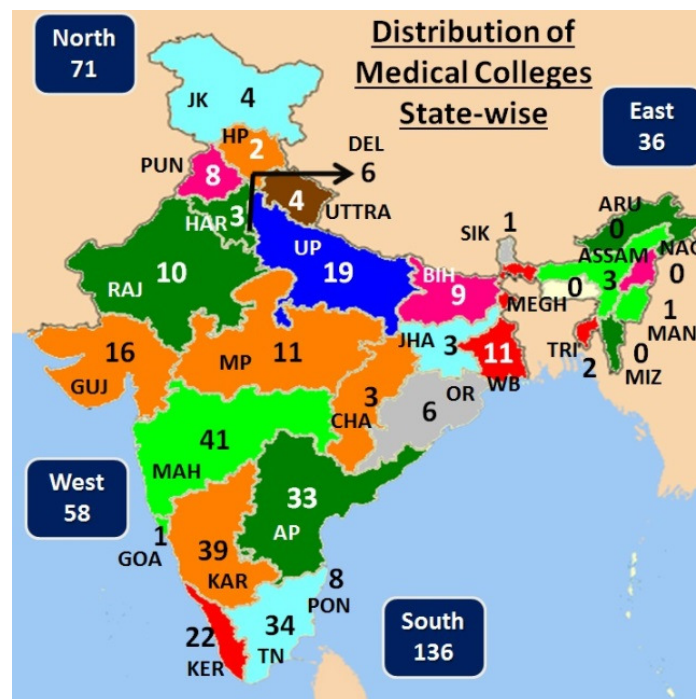


Figure 8: Distribution of medical colleges, India (volume-wise)
Source: Medical Council of India Data

The Indian Government spending on Healthcare is 0.9% of the GDP, accounting for just 20% of the total spend on healthcare. Despite the large contribution of private spending, successful models such as the community based micro-health insurance scheme in Karnataka ‘Yeshaswini’ have emerged. Launched in 2008, the scheme initially collected approximately 5 cents per month from each person. This coupled with the State Government contribution have successfully ensured access to about 1700 surgical procedures. However, the absences of healthcare delivery infrastructure and human resource constraints have prevented State Governments from replicating the scheme.

Poor healthcare delivery infrastructure and human resource constraints have prevented State Governments from replicating successful affordability empowerment models such as the Yeshaswini.

Gujarat State Profile

The Western State of Gujarat is spread over an area of 196,022 sq. km., representing 5.96%³ of the total land area of the country. The State is widely recognized as one of the most progressive in the country, with an extremely conducive business environment which has attracted investors both indigenous as well as foreign. The State has followed a focused strategy of growth, concentrating and incentivizing core sectors such as energy, industry and agriculture.

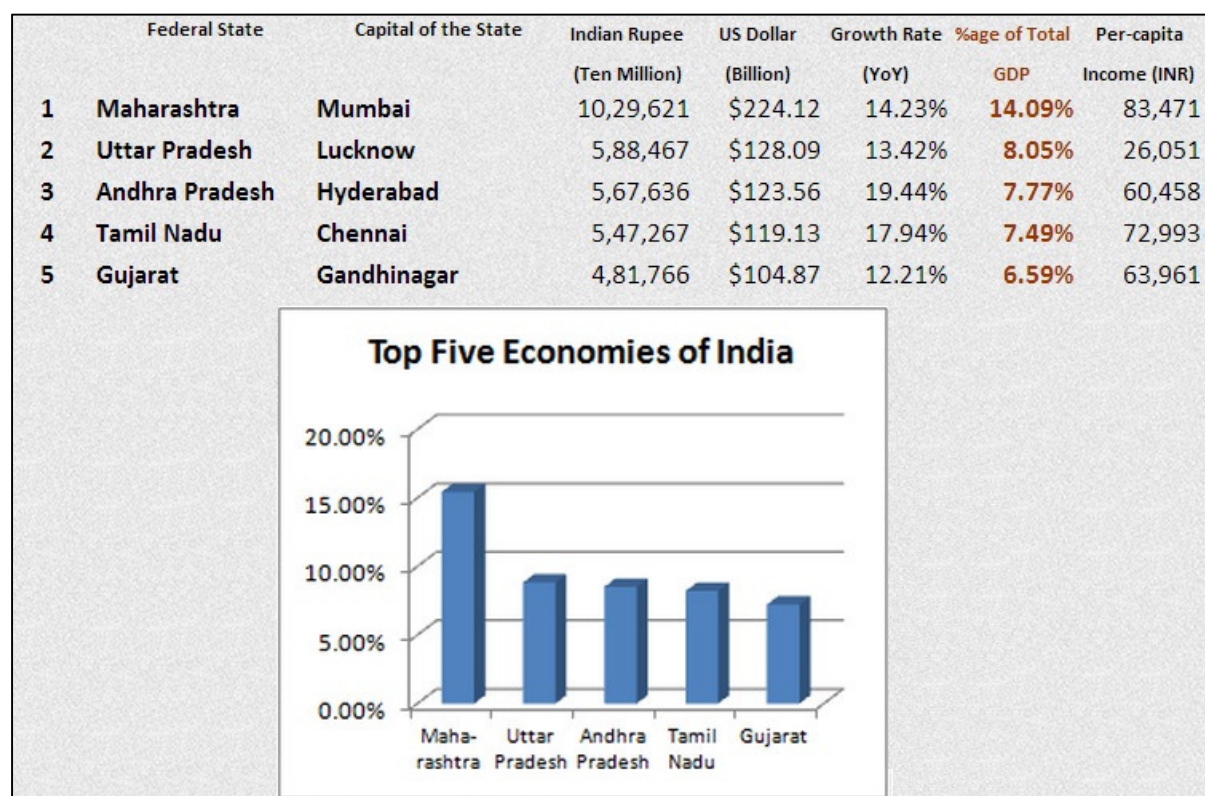


Figure 9: Indian states macro-economy data

Sourced from http://unidow.com/india%20home%20eng/statewise_gdp.html on Nov 28, 2012

Gujarat has a population of 6.04 Crore people, comprising of 3.15 Crore males and 2.89 Crore females. The State accounts for 4.99% of the population of India. The rural population of Gujarat accounts for 57.42% of the total population and the

³ Socio-economic review, Gujarat State, 2011-12

figures witnessed a drop of 5.22% over the last decade. The State's per-capita income was INR 52,708 in 2010-11 registering a growth of 8.7% over the year.

In health, the State of Gujarat ranks 10th in the rate of decline of infant mortality.

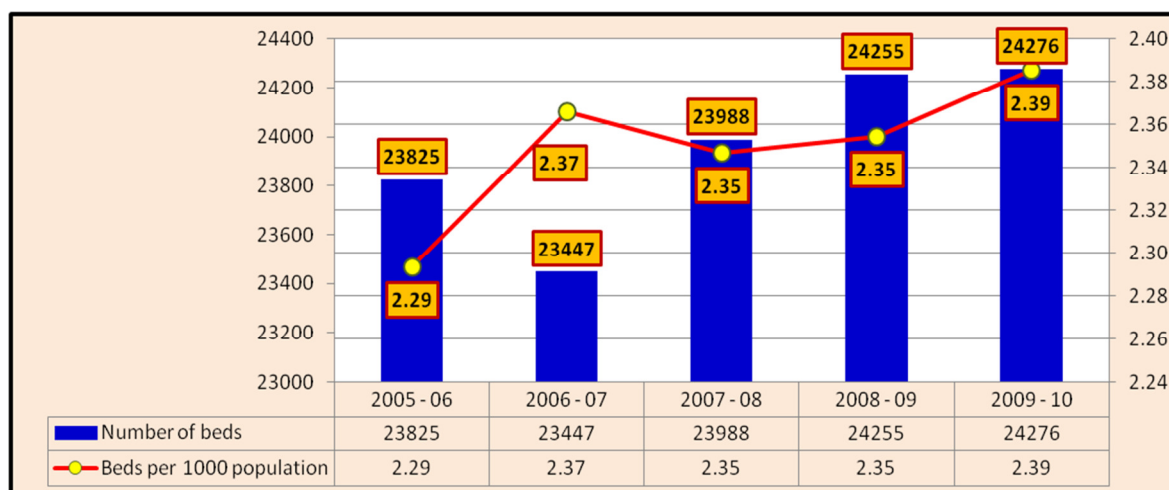


Figure 10: Number of beds and beds per 1000 population in Gujarat

Source: Gujarat Health Profile, 2009-10

There has been no change in the rural-urban IMR gap between 2000 and 2010. The incidence of under nutrition in the State was less than the national average in 1998-99. However, a disturbing trend has emerged in that the under-nutrition in the State has risen above the national average in 2005-06.

The beds per 1000 population have been almost stagnant over the period 2005-10. While this indicates a market for healthcare delivery providers, the patient-doctor

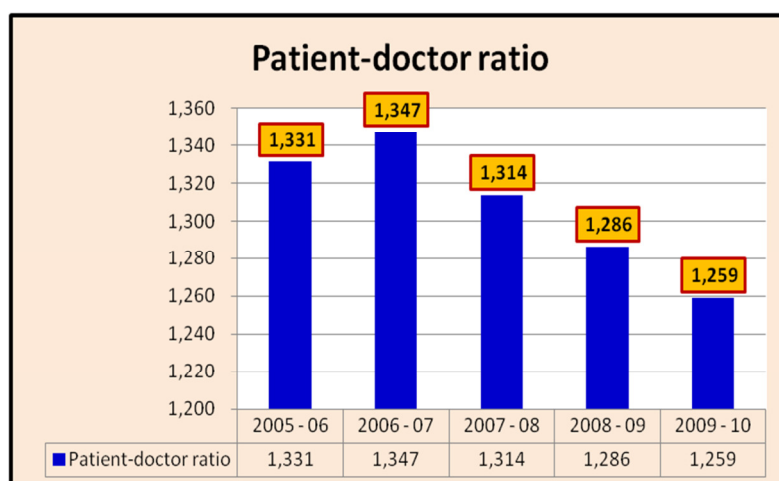


Figure 11: Gujarat Patient-Doctor ratio

Source: Gujarat Health Profile, 2009-10

ratio in the same period has indicated a steep decline. However, the trend could also be an indicator of lack of opportunities for personal and professional development of doctors and highly trained medical professionals. This trend

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can be validated by the presence of over served pockets within Ahmedabad which have best-in-class infrastructure and therefore higher concentration of doctors, thereby increasing the competition and creating an artificial '*survival-of-the-fittest*' scenario. We believe that the solution to attracting more talent into the State lies in creating best-in-class infrastructure into the next generation cities like Bharuch.

One of the solutions to reversing the declining patient-doctor ratio in the State is by creating best-in-class facilities to attract medical talent.

Bharuch: Overview

Bharuch is an industrial district located in the southern part of the State of Gujarat. The district is located on the banks of Narmada river. Administratively, the district of Bharuch is divided into 8 talukas – Bharuch, which is the district headquarters, Ankleshwar, Valia, Jhagadia, Hansot, Amod, Vagra and Jambusar. Spread over an area of 5246 sq. km., the district has a population of 1,550,822 and a high literacy rate of 83.03%.

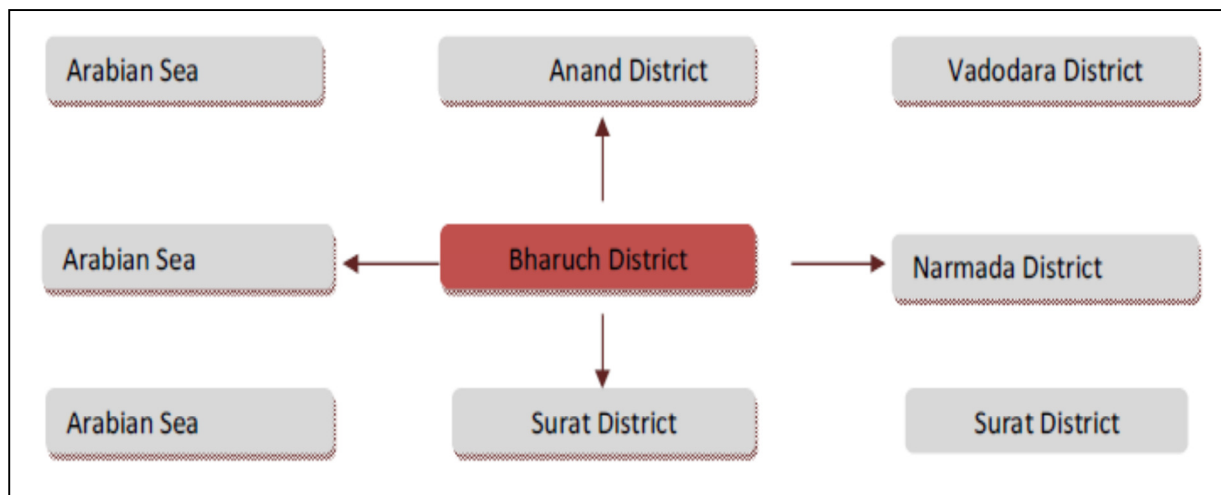


Figure 12: Bharuch - Boundary Profile

The district is a major industrial hub with the focus sectors being chemicals, petrochemicals, pharmaceuticals, engineering, ports and ship building and textiles. The Dahej port which is operated by the Gujarat Maritime Board (GMB), has made been a major factor facilitating industrial growth in the district.

The tourist destinations in and around the district include the Bhrigu Rishi Temple, the Golden Bridge, and Shuklatirth.

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Geographical Location	72.45° to 73.15° East (Longitude)
	21.30° to 22.00° North (Latitude)
Average Rainfall	800 mm
Area	5,253 sq. km
District Headquarter	Bharuch
Talukas	8
Population	1.3 million (As per 2001 Census)
Population Density	261 persons per sq. km
Sex Ratio	920 Females per 1000 Males
Literacy Rate	74.79%
Languages	Gujarati, Hindi and English
Seismic Zone	Zone III

Source: Socio Economic Review 2006-07

Figure 13: Bharuch district fact file

Source: Socio-Economic Review, 2006-07

Connectivity

The Dedicated Freight Corridor (DFC) planned by the Government of India would pass through six States including Gujarat. An area of 150 km on either side of the DFC is being developed as Delhi Mumbai Industrial

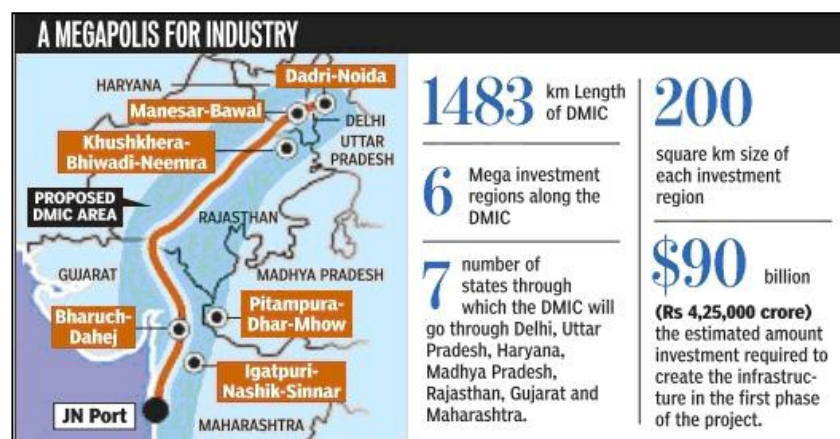


Figure 14: Delhi Mumbai Industrial Corridor

Source: <http://blog.propertynice.com/wp-content/uploads/2009/12/128.jpg>

sourced on December 1, 2012

Corridor. Bharuch is one of the districts set to benefit from the DMIC. The Gujarat State Government has identified 82 links in the DMIC Influenced area to upgrade

them into two/four lane carriageway offering connectivity between ports, industrial estates, hinterlands, markets and points of agricultural produce. The Bharuch industrial area lies within 50 km of the Dedicated Freight Corridor in Southern Gujarat.

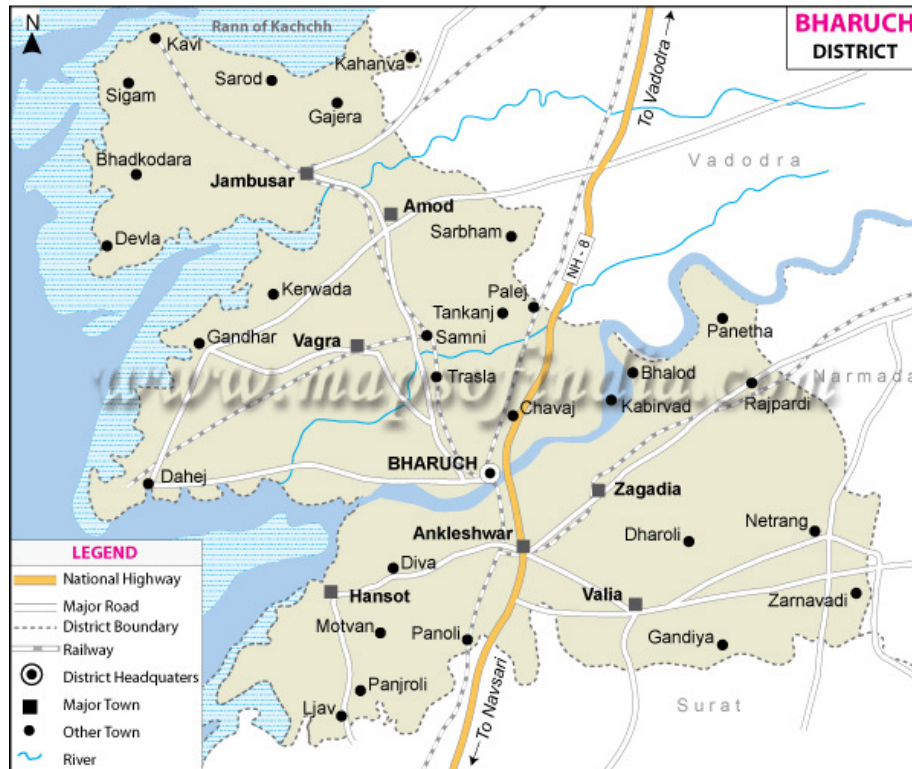


Figure 15: Transport map of Bharuch

The NH 8 is the major road link connecting the district of Bharuch with Ahmedabad, Mumbai and the DMIC. Bharuch district is well connected by rail network. The district has about 33 railway lines and about 84 trains pass through the district every day. Vadodara and Ahmedabad airports serve to connect the district through air while the Dahej port forms a prominent sea link for the industries of the district.

Bharuch - Industry Profile

Bharuch is home to a number of well-established names in the corporate world. Videocon, Aditya Birla, Tata Group, Reliance and a number of public sector

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undertakings have their presence in Bharuch. The presence of port facilities at Dahej has given rise to a number of port and ship building activities in and around Dahej. Bharuch has approximately 11,500 small and medium enterprises involved in chemicals, energy and other manufacturing activities. Ankleshwar alone has an estimated 70 medium and large scale industries making it the largest industrial hub in the district.

Name of the Unit	Taluka	Product
Aventis Phama	Ankleshwar	Pentoxifylline, Lasilactone Tablets and Tonophosphate etc.
BASF	Dahej	Polymers of Styrene
Cadilla Healthcare	Ankleshwar	Tinidazole, Dexasmethasone, Sodium Phosphate etc.
DCM Shriram	Jhagadia	Sodium Hydroxide Chlorine, Hydrogen Chlorine etc.
Gas Authority of India Limited (GAIL)	Amod	Liquefied Petroleum Gas (LPG)
Glaxo India Limited	Ankleshwar	Basic Drugs, Salbutamol Formulations, Ranitidine etc.
Gujarat Alkalies & Chemicals Limited	Dahej	Phosphoric Acid
Heuback Colour Pvt. Ltd.	Ankleshwar	Ammonium Nitrate, Crystal etc.
Hindalco Industries	Dahej	Copper Cathodes, Power, Oxygen, Sulphuric acid etc.
Indian Petrochemicals Corporation limited (IPCL)	Dahej	Ethane, Propylene, Butadiene etc.
Lupin	Ankleshwar	Vitamin B-6, Ortho Nitro Benzene, Pharmaceutical Bulk Drugs
Petronet LNG Limited	Dahej	Import of LNG, Regassification of LNG & Export of Natural Gas etc.
United Phosphorus Ltd.	Ankleshwar	Metaxuron Formulation, Diethyl Triphosphorus Chloride, Common Salt etc.
Welspun	Dahej	Saw Pipes, Plates and Coils

Figure 16: Presence of major industries in Bharuch

Source: Industries Commissionerate, Government of Gujarat, 2007

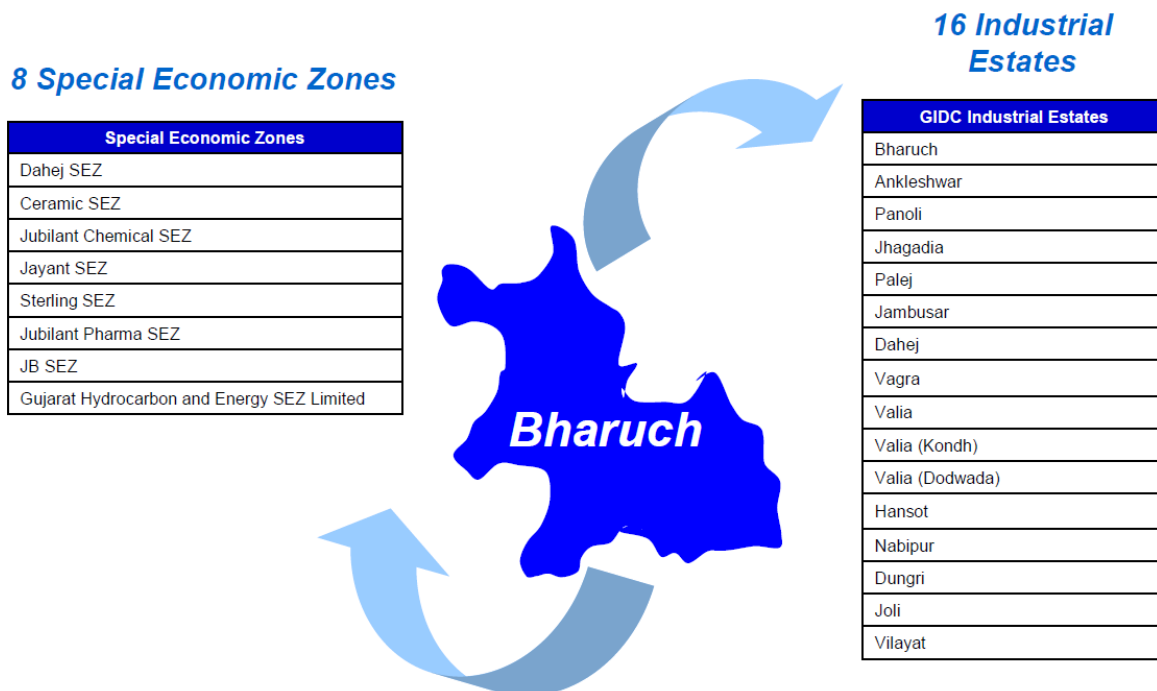


Figure 17: SEZ and Industrial Estates in Bharuch

Source: Industries Commissionerate, Government of Gujarat, 2007

Bharuch - Healthcare Profile

Bharuch has 38 primary health centers, 7 community health centers and 1 civil hospital⁴. Some of the private hospitals in the district include - Bharuch Hospital, Shaikh Orthopedics Hospital, Ami Surgical Hospital & Nursing Home, Narayan Eye Hospital and Karm Plastic Surgery & Burns Hospital.

#	Gujarat / Districts	All ages	0 to 4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Gujarat	50671017	10.4	11.2	11.2	10.2	9.6	8.3	7.9	7.2	6.0	4.8	3.7	2.7	6.9
21	Bharuch	1370656	10.0	10.6	11.2	9.5	9.1	8.7	8.5	7.7	6.2	5.0	3.7	2.8	7.0

Figure 18: Bharuch district age-wise population distribution

Source: Health Statistics, Gujarat, 2009-10

Out of the 1.55 million population of Bharuch, approximately 32% of the population lie in the age group of 35 and above. It is only expected that this population would further increase over a period of time and require healthcare services. By standards established by the World Health Organization, the Bharuch district with a population of 1.55 million would require 6000 hospital beds. Assuming that 50% of these should be secondary and tertiary care beds, the number works out to 3000.

Based on primary data, Bharuch has an estimated 620 beds in secondary care. Moreover, advanced diagnostic imaging facilities such as MRI, CT, high resolution ECHO, USG machines are not available in the existing hospitals.

The unavailability of sufficient number of beds and advanced diagnostic imaging facilities, prima-facie lend strong support to establishing a tertiary care hospital in Bharuch.

⁴ Health Statistics, Gujarat, 2009-10

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**Narayana
Hrudayalaya Group
of Hospitals**

Overview of the NH Group

Providing high quality affordable healthcare to the masses

Narayana Hrudayalaya (NH) was established with a “*dream of making quality healthcare available to the masses worldwide*”.

Narayana Hrudayalaya Private Limited (headquartered in Bengaluru) was established in 2000 by the visionary Dr. Devi Shetty with the objective to provide quality affordable healthcare. Narayana Hrudayalaya was launched with one flagship multi-specialty hospital (Bengaluru) catering to a variety of illnesses and diseases.

Narayana Hrudayalaya is credited with the ‘Walmartization’ of healthcare. The Group currently performs over 30 cardiac surgeries daily at its flagship facility in Bangalore.

Dr. Shetty, an eminent cardiac surgeon trained in the UK, before returning to India in 1989. Prior to founding NH, Dr. Shetty played a pivotal role in setting up the cardiac surgery departments at BM Birla Heart Research Center and the Manipal Hospital. The NH Group provides high quality medical care at affordable prices to a

significant section of the society which cannot otherwise bear the excruciatingly high cost of modern healthcare. The Group has perfected the art of providing tertiary care to large volumes of patients at its hospitals. All of this is done while achieving outcomes comparable to international quality standards.

Passion makes all the difference.

One of India’s largest and one of world’s most economical health care service providers.

Narayana Hrudayalaya’s revenues have grown a whopping 464 per cent in the five years leading to 2011-12.

Narayana Hrudayalaya Group started off with a 200 bedded hospital in Bangalore in 2000. The Group has since grown rapidly to expand to 6400 beds

across 21 facilities located in 13 cities across India. The Group will soon commence constructing its first facility outside India, at the Cayman Islands. Further, the Group

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is also setting up the first of its four cardiology centers in Malaysia. The international foray into Malaysia and Cayman Islands is the first step in achieving the Group's Ambition of becoming a global healthcare provider.

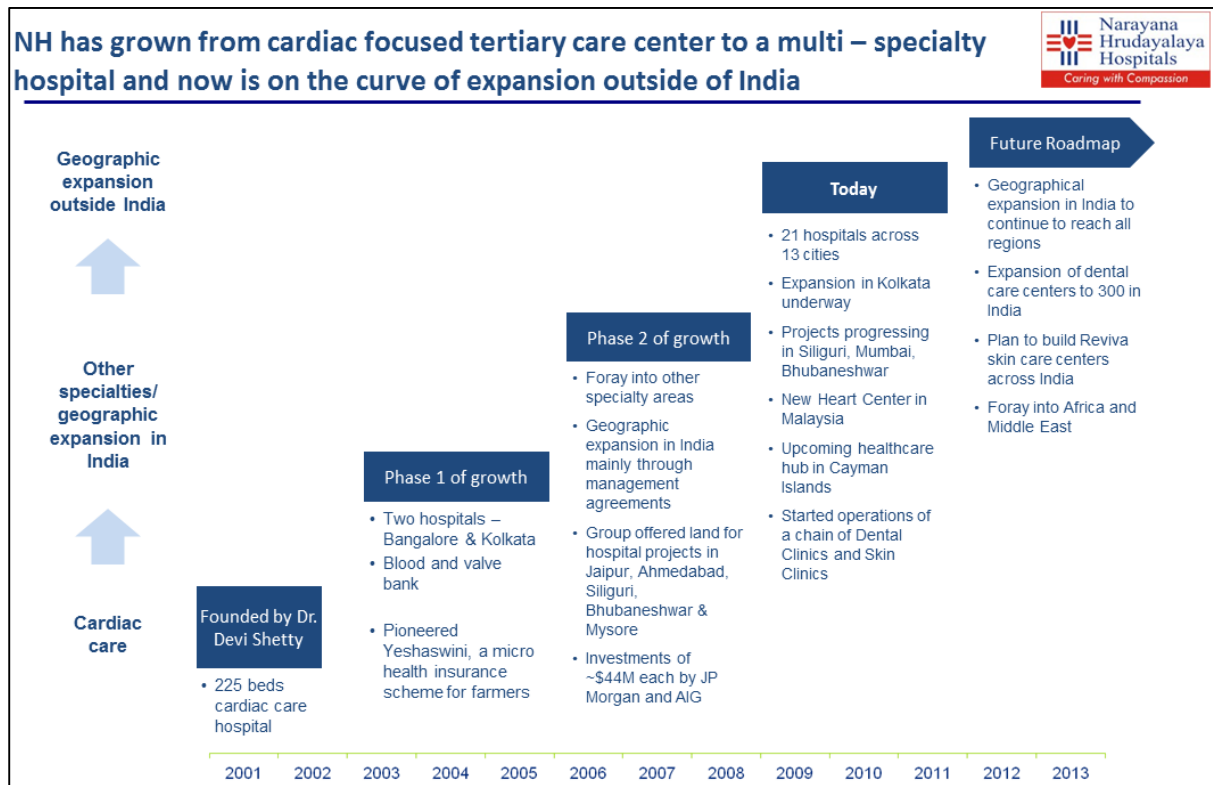


Figure 19: NH growth chart

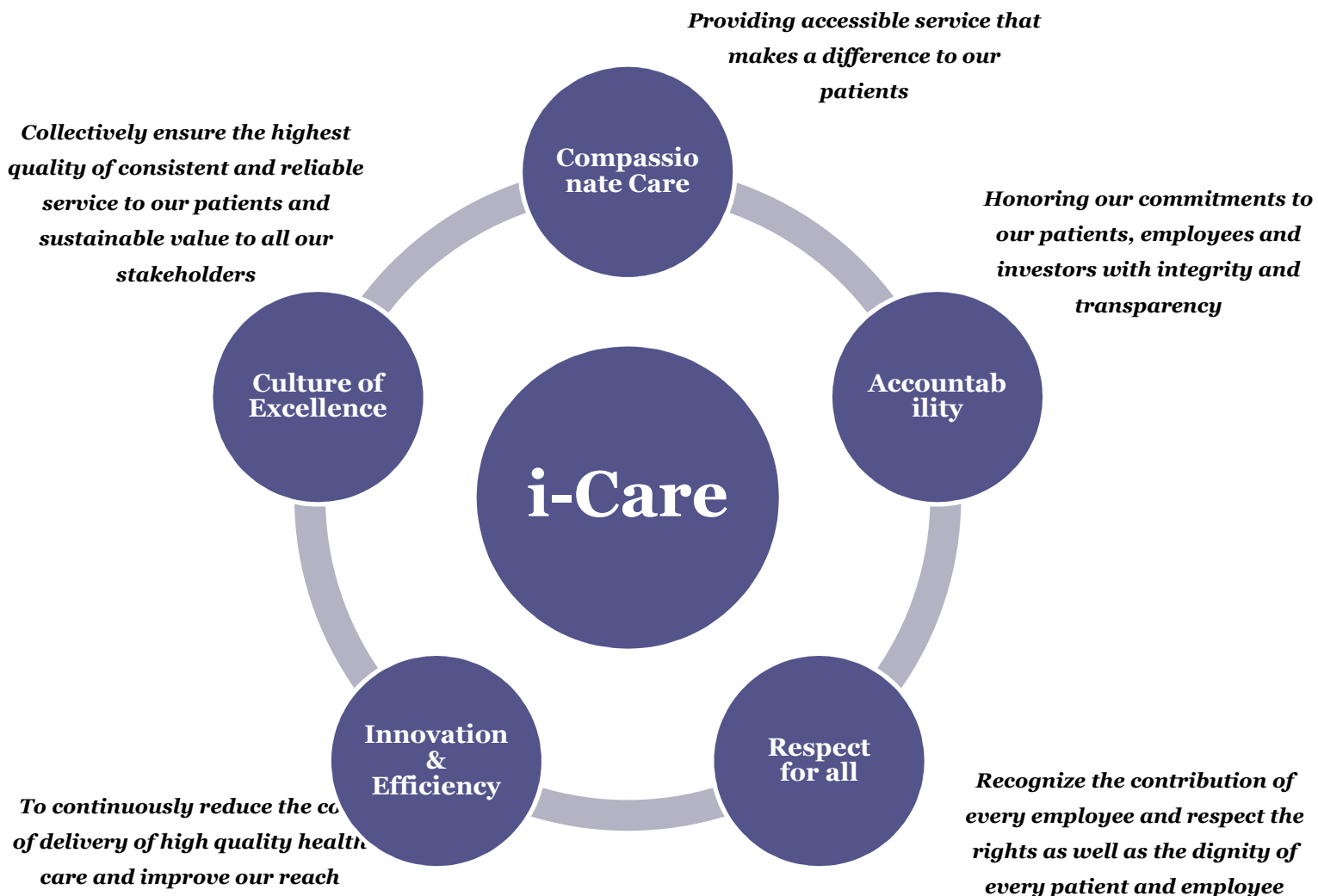
The NH Group today includes a chain of dental and cosmetology clinics 'Reviva' apart from multi-specialty hospitals located across the country. The expertise of the group lies in treating large volumes of patients and leveraging the volumes to bend the cost curve downwards through operational excellence and unwavering focus on clinical outcomes.

NH Group: Vision

The NH Group's Vision is

“To provide high quality healthcare, with care and compassion, at an affordable cost, on a large scale”

Our core values are represented by the simple acronym I – CARE



NH Group: Geographical Presence

The NH Group is an established national player with its presence in 13 cities across the country. The Group has 21 facilities which include multi-specialty hospitals and Centers of Excellence in Onco-Surgery, Cardiac Surgery, Cardiology, Gastro-Intestinal Surgery and Nephro-Surgery.

The NH Group has a proven track record in Organic as well as Inorganic growth. For e.g. the group offers Cardiology, Cardiac Surgery, Neuro-Surgery and Nephrology super-specialty services across many existing hospitals thereby leveraging existing resources of the hospitals and offering an unbeatable value addition in the form of increasing the breadth of services available to the local community.

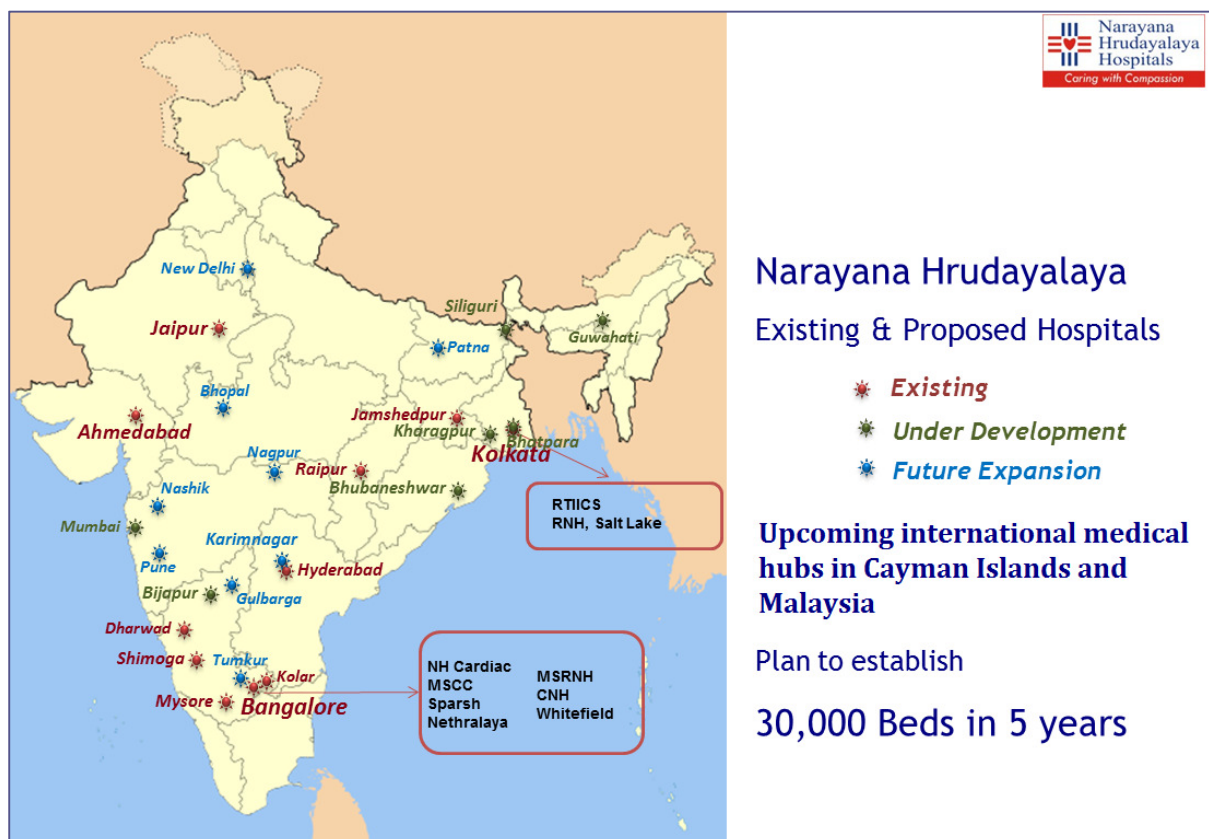


Figure 20: Narayana Hrudayalaya Hospitals - Geographical Presence

NH Group: Infrastructure & facilities

The flagship hospital of the group is located at its Health City in Bangalore, situated on the Bangalore-Hosur National Highway (NH-7) on 25 acres of land, with a total built up area of the Health City being approximately 11,00,000 Sq. Ft. At present, Narayana Hrudayalaya has diagnostics, surgery and therapy facilities for Cardiac, Neurosurgery & Neurology, Urology & Nephrology, Vascular, Thoracic surgery, ENT, Plastic surgery, General, pediatric, Gynec/OBG and laparoscopic Surgery at multiple locations across India. The overview of the infrastructure facilities are as follows:

BANGALORE	
NH Cardiac Hospital, Health City, Bangalore	is a 1000 Bed Heart hospital performing more than 30 heart surgeries per day. The hospital infrastructure is capable of accommodating 1000 beds at full capacity and is capable of supporting 55 cardiac surgeries per day. The 80 bed paediatric intensive care unit at this facility is one of the largest in the world.
Mazumdar Shaw Cancer Centre, Health City , Bangalore	is a 500 Bed Cancer & Multi Specialty hospital. The hospital infrastructure is capable of accommodating 1400 beds at design capacity and currently accommodates a 14 bed bone marrow transplant unit; one of the largest of its kind in Asia.
Chinmaya Narayana Hrudayalaya, Bangalore	is a 55 bed cardiology and nephrology centre operated by Narayana Hrudayalaya; catering to the population of central Bangalore
MS Ramaiah Narayana Hrudayalaya, Bangalore	is a 100 bed cardiology and cardiac surgery unit operated by the group; providing super-specialty cardiac services in the premises of the MS Ramaiah Medical College
RL Jalappa Narayana Hrudayalaya, Bangalore	is a 60 bed cardiology and cardiac surgery unit operated by the group; providing super-specialty cardiac services in the premises of the Sri Devaraj Urs Medical College
Narayana Hrudayalaya Multi-Specialty Hospital, Whitefield, Bangalore	is an upcoming 140 bed full-fledged super-specialty hospital located in the IT hub of Bangalore; offering high end surgical care supported by advanced diagnostics such as 64 slice CT scan, 1.5 Tesla MRI and CATH Lab
Narayana Hrudayalaya Multi-Specialty Hospital, HSR Layout, Bangalore	is an upcoming 120 bed full-fledged super-specialty hospital located in the heart of Bangalore; offering high end surgical and day care treatment

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BANGALORE

St. Marthas Narayana Hrudayalaya, Bangalore	is a high end interventional cardiology centre equipped with CATH lab and associated diagnostics
--	--

KARNATAKA

Narayana Hrudayalaya Multi-Specialty Hospital, Mysore	is an upcoming 200 bed super-specialty hospital in Phase I. The project is a path breaking achievement in revolutionizing the way hospitals are built, such as achieving a 40% lower cost compared to conventional costs.
Narayana Hrudayalaya Multi-Specialty Hospital, Shimoga	is a 250 bed hospital with the infrastructure capacity of adding additional 250 beds making it one of the one of the largest hospitals of its class in its region.
SDM Narayana Hrudayalaya hospital, Dharwad	is a 75 bed cardiology and cardiac surgery unit located in the premises of the SDM College of Medical Sciences and Hospital.
SS Narayana Hrudayalaya, Davangere	is a cardiology unit operated and managed Narayana Hrudayalaya located in the premises of SS Institute Of Medical Sciences & Research Centre, Davangere

UPCOMING NARAYANA HRUDAYALAYA CARDIOLOGY CENTRES

NH Cardiology Centres Chitradurga Tumkur Bijapur West Bank, Kolkata Kuppam	are upcoming high end interventional cardiology centres equipped with CATH lab and associated diagnostics
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MULTI-SPECIALITY HOSPITALS ACROSS INDIA

Narayana Hrudayalaya Multi-Specialty Hospital, Jaipur	is a 200 bed multi-specialty hospital with plans to scale up further in phase II. The Jaipur hospital of the group is the first hospital in Rajasthan to obtain the prestigious JCI accreditation.
Narayana Hrudayalaya Multi-Specialty Hospital, Ahmedabad	is a 250 bed multi-specialty hospital located on a 36 acre campus in the city of Ahmedabad. The hospital is part of a campus which would accommodate a 100 seat medical college, 5000 bed health city and para-medical and nursing institutions.
Narayana Hrudayalaya Multi-Specialty Hospital, Jamshedpur	is a 250 bed fully equipped multi-specialty hospital located in the city of Jamshedpur providing access to tertiary care to a vast number of people in Eastern India.

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MULTI-SPECIALITY HOSPITALS ACROSS INDIA	
Narayana Hrudayalaya Multi-Specialty Hospital, Hyderabad	is a 250 bed fully equipped multi-specialty hospital located in the city of Hyderabad.
Rabindranath Tagore Institute of Cardiac Sciences, Kolkata	is one of the oldest hospitals of the group located in Kolkata; comprising of 600 beds specializing in cardiac and super-specialty care. It is one of the largest hospitals for cardiac care in East India.
Narayana Hrudayalaya Multi-Specialty Hospital, Raipur	is a 250 bed fully equipped multi-specialty hospital and one of the largest hospitals in the region located in the city of Raipur.

- Apart from the above medical facilities, the Narayana Hrudayalaya Group is actively involved in education and currently conducts more than 70 training post-graduate, nursing and para-medical training programs.
- Narayana Hrudayalaya sponsored the Thrombosis Research Institute, a research institute based in London, to start a research Lab in its campus and now has 30 researchers working on allied areas of cardiac and other super-specialty care.
- The group is currently in the process of setting up multi super-specialty hospitals in Cayman and Malaysia.

NH Group: Innovations

The NH Group has been a pioneer in innovating to reduce the cost of healthcare while at the same time maintaining the highest quality of care. The traditional patient base served by the hospital is from the lower, middle and upper-middle income group. However, it is pertinent to note that approximately 20% of the Group's patient base is from the affluent class, who prefer to come to the Group for the quality of clinical outcomes.

While Narayana Hrudayalaya has always focused on offering low cost healthcare, significant sections of the affluent come to NH for the quality of clinical outcomes.

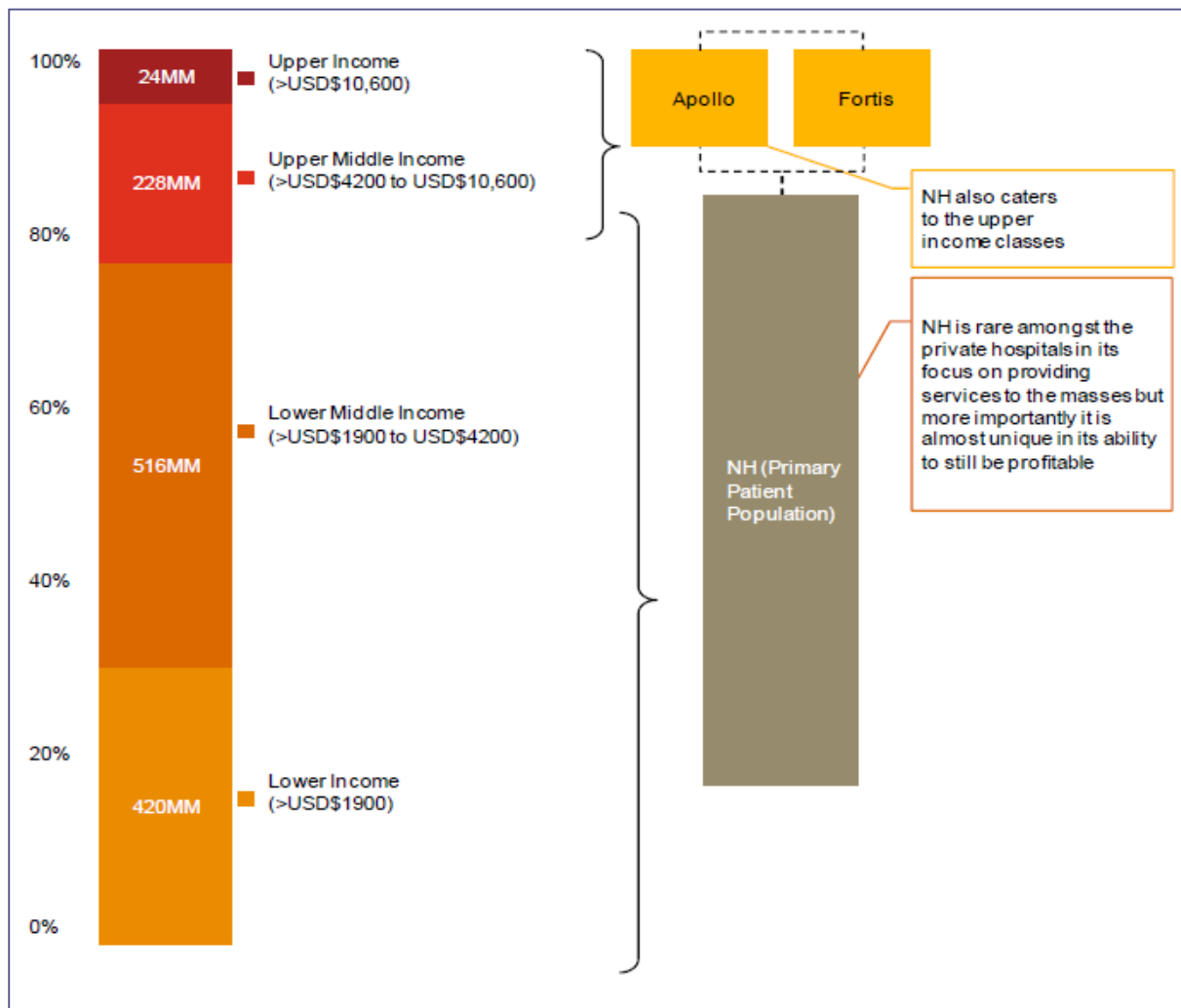


Figure 21: NH Group - Patient Base

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Given the very low penetration of health insurance schemes in the country and significantly high cost of healthcare, Narayana Hrudayalaya has over the last decade involved itself with continuous innovation and has perfected the affordable care delivery model. The Group's quality outcomes such as patient mortality are on par with or better than the best in the world.

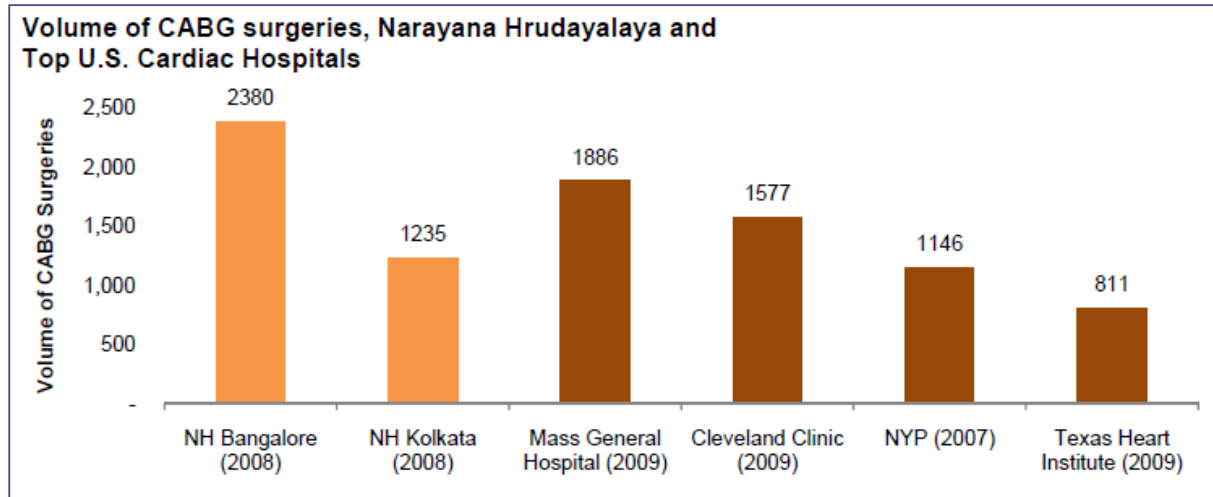


Figure 22: NH CABG Volumes per annum at individual hospitals

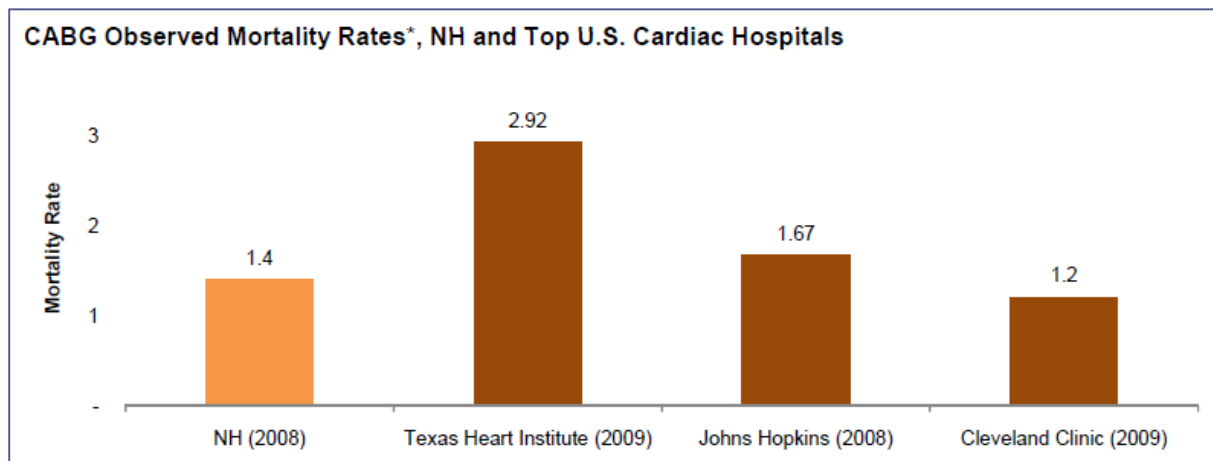


Figure 23: Mortality rates comparison across top US hospitals for CABG

It is important to note that the mortality rates for the NH Group are observed rates across all risk categories while the US hospitals data has been adjusted for risk.

The Group has focused on innovation to address the supply and demand side of healthcare delivery.

Health Cities

Narayana Hrudayalaya coined the term 'Health City' way back in 2000. The 'Health City' is a massing of focused super-specialty hospitals in one geographical location consisting of between 2000 – 5000 beds. The 'Health City' caters to large volume of patients seeking tertiary level care. The medical professionals are equipped with cutting edge technology to diagnose and offer holistic treatment to the patients. The capital cost of high end technology is amortized over the large volumes of patients and by driving high utilizations rates.

Bangalore 'Health City' profile

Number of hospitals	4 (Cardiac Sciences, Multi-Specialty & Oncology, Orthopedics, Ophthalmology)
Total number of beds	3200
Number of Operating Theatres	42 (includes only cardiac and multispecialty hospitals)

Key benefits of Health Cities

- Improves the quality of clinical outcomes by exposing clinicians to a wide variety of medical conditions
- Reduces the cost per surgery by sharing common resources including lab, radiology, Infection Control Team, Quality Control Team and administrative overheads
- Ideal location to train junior surgeons and residents, which in turn reduces the salary cost and also builds the succession plan
- Excellent setup for research activities

Yeshaswini Micro-Health Insurance Scheme

The Yeshaswini Micro-Health Insurance scheme was conceptualized by Dr. Devi Shetty and launched by the Government of Karnataka in the year 2003. It is the largest self-funded community insurance scheme covering almost 3 million people.

The scheme covers almost 1600 major surgeries at monthly premium of 22 cents (INR 10). Cashless treatment under the scheme is offered at 350 network hospitals across Karnataka.

The success of the scheme lies in the premise that corpus of payment developed

Yeshaswini, a novel insurance scheme, provides coverage for more than 1600 surgeries at a nominal premium of just INR 10 per person per month.

through the participation of a large number of people is adequate to support the few unfortunate who require medical treatment in any one year.

The success of the scheme has seen its replication in two other States – Andhra Pradesh and Tamil Nadu, covering almost 30 million people. The scheme's model has been subject of many case studies including Harvard Business School, International Labour Organization and the World Bank.

Udayer Pathey Scholarship

Narayana Hrudayalaya instituted a novel scholarship scheme to encourage academically brilliant students from deprived backgrounds to study medicine. Young students, typically in Class VIII or IX, are identified through a State wide Eligibility Test and are given INR 500 per month.

The Group regularly mentors these children and provides them the exposure of a hospital set up right

Udayer Pathey
Because outstanding doctors often come from deprived backgrounds.

December 18, 2012

from the young age. The NH Group strongly believes that this small initiative will go a long way in encouraging more students from poor families to become doctors and bridge the gap in number of doctors.

Telemedicine & Tele-radiology

Narayana Hrudayalaya partnered with Indian Space Research Organization to reach out to the remote parts of the country which have no access to doctors or diagnostic facilities. The Tele-Medicine program at NH has successfully treated more than 230,000 patients in India and Africa and has over 800 tele-medicine centers across the country. Every day, more than 250 ECGs are reported by our doctors. Through its



Figure 24: NH leveraged the expertise of anesthesiologists at Children's Hospital of Philadelphia while doing its first pediatric liver transplant. The operation was a huge success partly credited to NH expertise in leveraging telemedicine capabilities.

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tele-medicine setup, NH performs about 15 consultations every day and reports 200 ECGs per day, all of which is free of cost. NH has reached out not just to Indian patients but also to African patients across 53 African countries, and is a part of the Pan-Africa healthcare network. NH has conducted more than 25 CMEs for the benefit of African doctors.

Narayana Hrudayalaya has started tele-radiology services for its group hospitals. Radiology reports require a specialist to interpret and report. Unfortunately, in our country, radiologists are few in number and expensive human resource. NH has come up with an ingenious solution to overcome this issue. By leveraging IT connectivity, NH has linked all its hospitals to the Bangalore center and completely centralized reporting of all radiology reports across the group. The benefits are tremendous including 24/7 services to all NH hospitals. Recently, the tele-radiology services have been offered to select hospitals outside the NH group.

NH Group: Management Team

The top management of Narayana Hrudayalaya is a highly proven team. The team has contributed to Narayana Hrudayalaya being one of the most sought after super-specialty hospitals in India. Narayana Hrudayalaya performs the second highest number of open heart surgeries in the world. Narayana Hrudayalaya also has one of the lowest mortality rates in the world. This is primarily due to the quality of the doctors and standards of operation in place at Narayana Hrudayalaya. Most of the doctors at Narayana Hrudayalaya have performed high profile surgeries that have caught the attention of the medical world and have become stars in their own right. Majority of the group's hospitals have in-house training facilities to train health care specialists like cardiac surgeons, cardiologists, cardiac anesthetists, radiologists, nuclear medicine specialists, etc. Narayana Hrudayalaya currently conducts numerous training programs along with the State Governments and various universities. The group's prowess in providing holistic medical care has attracted patients from 73 countries across the globe.

NH Group: Operating Model

Narayana Hrudayalaya entered the healthcare service sector in India at a time when the industry was largely fragmented, localised, opaque, expensive and restricted to standalone hospitals. Narayana Hrudayalaya was created with the vision to inspire stakeholder trust through a modern corporatized structure, operational transparency, hands-on operating model, pan-Indian presence and quality affordable services. A couple of decades later, Narayana Hrudayalaya emerged as a global industry model for its ability to reconcile quality, affordability, scale, transparency, credibility and profitability.

At Narayana Hrudayalaya, it is firmly believed that in a country with a vast inequity in healthcare services, the growth of healthcare service is a foregone conclusion. In view of this, growth for the sake of growth is not NH's core focus. Our organisational culture is driven by the commitment to being engaged in a historic exercise to provide the best combination of quality health care at the lowest possible cost in the world. NH's objective is to continue to demonstrate the feasibility of this model, and then to take this model across India and the world.

Particulars	2011-12	2010-11	2009-10	2008-09	2007-08
Number of cardiac surgeries	10,743	9,916	8,796	8,063	6,008
Number of general surgeries	20,324	13,771	6,674	4,736	2,459
Number of Angiograms and Cath procedures	31,629	27,086	20,856	16,591	10,252

Figure 25: NH Group Clinical Statistics

The overarching strategy at NH is to provide affordable healthcare by driving costs lower through a combination of capacity utilization and operational excellence. In a business where medicines and consumables account for 30 per cent of the revenues, NH derives sustainable competitive advantage by its ability to leverage its scale and procure at costs significantly lower than the prevailing average market rates. High volumes are leveraged to create win-win situations with suppliers. Asset light models

such as equipment rental models and pay-per-use models, which become feasible at large volumes, are utilized to drive costs lower and support sustained growth.

At NH, patient satisfaction and clinical outcomes are identified as the core factors that support sustainable growth. Recently, NH launched the PEARLS - **Patient & Employee Ailments' Resolution & Learning System**. Patients and employees are encouraged to air their grievances and provide constructive feedback to a dedicated team over in-house call phones. All complaints are resolved within pre-determined timelines and status / closure updates are sent to the concerned individual. Departments are asked to target reduction of incidents and demonstrate objective improvements.

As a progressive health system, NH has leveraged technology as a way to drive costs lower and to make systems more efficient, robust and scalable. NH has successfully implemented the Oracle ERP and a central HIS across its group hospitals for better operational control and governance. Recognizing the high cost of IT infrastructure, NH embraced the cloud based computing system, choosing to store data on the cloud servers at a central location. This has been particularly advantageous to the group in leveraging clinical knowledge and in programs such as tele-radiology to drive down costs and provide better and expert service to its patients 24x7, 365 days a year.

At Narayana Hrudayalaya, operational control is key to managing the Group's diverse and geographically distributed operations. NH has developed ingenious and path-breaking MIS systems, including a daily Profit & Loss Account, which gives the top management and key operational personnel transparent status across the Group. This in turn facilitates proactive decision making and allows for course correction at the appropriate time.

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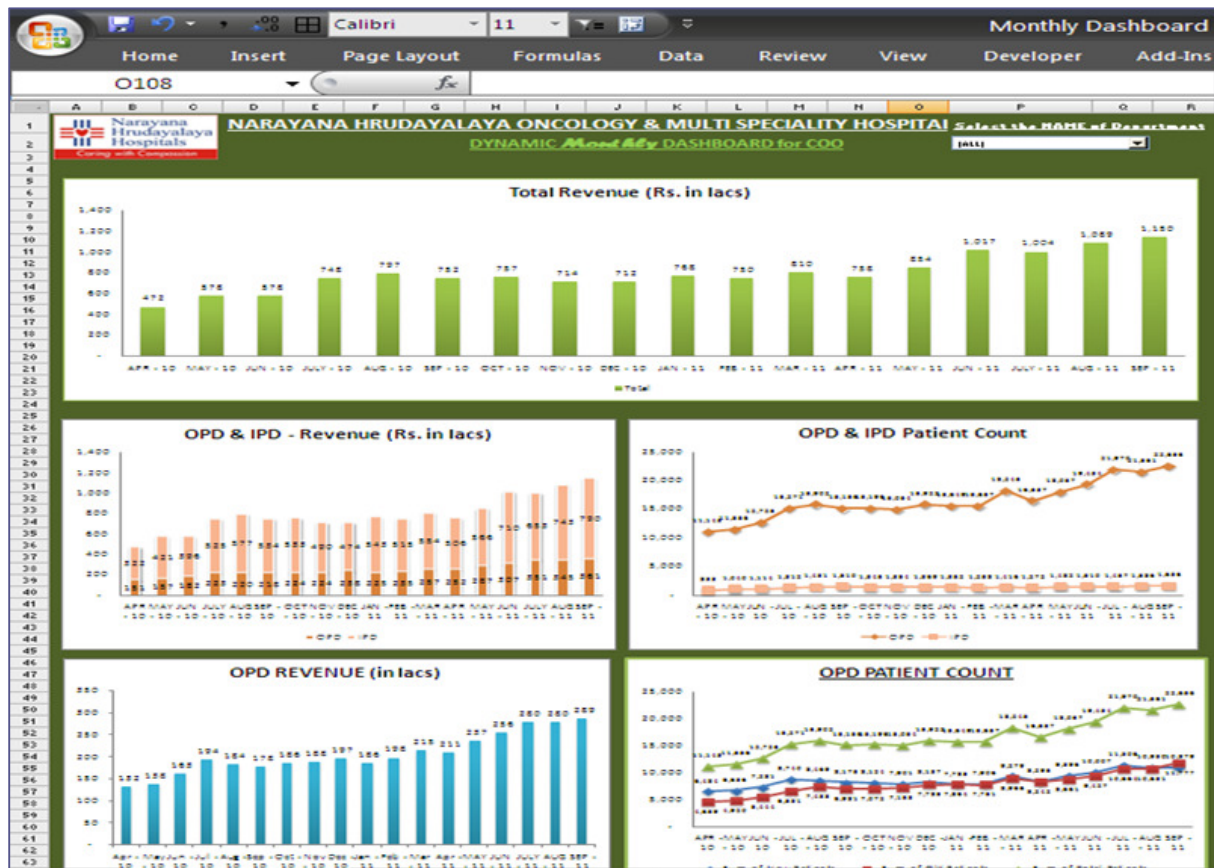


Figure 26: NH MIS Dashboard

From:	Karan Dave [karan.dave@hru]
To:	'Akshay Oleti'; sreenathp@hru kunal.cardiac@gmail.com
Cc:	'Bidesh'; 'Manuramachandar U
Subject:	MIS Report until 23 Sept

23-Sep Fri	
NH Cardiac	
Revenue	1102
Ebitda	+198
Ebitda %	+18%
NHOM	
Revenue	873
Ebitda	+192
Ebitda %	+22%
RTIICS	
Revenue	1287
Ebitda	+219
Ebitda %	+17%
NHHyd	

Figure 27: NH Daily P&L

NH Group: Selected Recognition

- Ranked 36th among "**World's 50 Most Innovative Companies**" by Fast Companies for the year 2012.
- Narayana Hrudayalaya - **Best Hospital Awards 2010** – by CNBC and ICICI Lombard Healthcare for the category “Commendation for driving affordable and quality healthcare for all”
- "**India Shining Star CSR Award**" for exceptional CSR work by Narayana Hrudayalaya Hospitals in the Health Sector by Shri Salman Khurshid, Honourable Union, Cabinet Minister for Water Resources and for Minority Affairs on 19th Feb, 2011
- **FICCI Health Care Excellence Award 2012** for “Addressing Industry Issues”
- Frost & Sullivan India Healthcare Excellence Awards 2012 - **Healthcare Service Provider Company of the Year** (Revenue between INR 500-1000 Cr).
- **National Accreditation Board for Hospitals and Health Care Providers Certification (NABH)** awarded to the private super specialty hospital, Narayana Hrudayalaya Bangalore, by Karnataka Governor Mr. Rameswar Thakur. Narayana Hrudayalaya became the first hospital in the Karnataka state to receive NABH accreditation, awarded for the delivery of 'highest quality patient care'.
- **Joint Commission International (JCI) Accreditation** - Narayana Hrudayalaya Cardiac Hospital, Bangalore and Narayana Hrudayalaya Hospital, Jaipur NH, Jaipur is the first hospital in Rajasthan to receive the prestigious JCI Accreditation.
- NH Group’s work has been repeatedly chronicled in prestigious international publications such as the Forbes, Wall Street Journal, Australian Broadcasting Corporation, Harvard Business School, Wharton Business School, British Broadcasting Corporation (BBC) and The Guardian, UK.

NH Group: Selected Case Studies – Clinical Excellence

In early 2012, a four-year-old Cayman girl was flown to Narayana Hrudayalaya in Bengaluru with an unusual complaint. At our hospital, we are accustomed to children needing a hole repaired in their heart. This child had two. When the child had first been taken to Jamaica, the doctors gave up after a point. Their conclusion: the operation was too complex. Besides, the child's medical insurance was insufficient to cover the \$800,000 cost of surgery in the United States. Then somebody suggested Narayana Hrudayalaya half the world away. The parents of the child contacted our hospital. Medical documentation was shared. The case was studied. Expert opinions shared. Finally, the doctors at Narayana Hrudayalaya nodded. It could be done. The child was operated upon. The two holes were plugged. The parents were pleasantly surprised on two counts. Their child had recovered and was now completely healthy. Narayana Hrudayalaya had waived the fees for this challenging surgery.

“If we have reached Narayana Hrudayalaya, our worries are over”

children needing a hole repaired in their heart. This child had two. When the child had first been taken to Jamaica, the doctors gave up after a point. Their conclusion: the operation was too complex. Besides, the child's medical insurance

Jack Jones, 74, was a Jehovah's Witness with a heart problem. As a devout of the faith, Jones could be operated for the problem but could not undergo a blood transfusion. This meant he could not take anyone else's blood and neither could he take his own. This meant that the challenging operation would need to be conducted without blood. In the event that the operation required blood during the course of the operation, the patient would have to be let go. Jones and his wife Estelle checked hospital after hospital in USA for the operation – without luck. Then someone mentioned Narayana Hrudayalaya in Bengaluru. The couple flew half the world across to a hospital they had never seen. Their faith was not misplaced. The NH surgical team conducted this challenging surgery without blood. Minimising

“However impossible it appears, Narayana Hrudayalaya's experts will find a way”

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significant expenditure involved in screening the blood of donors and reducing the possibility of an infection during transfusion. The result is that NH surgeons conducted a successful operation and Jack Jones is back smiling and living an active life in the USA.

“Healing hearts across borders”

The healing of two and half year old Pakistani child, Noor Fatima’s heart at NH, has come to symbolize the healing of hearts across the ravaged borders. The 4000 km journey was fruitful for Baby Noor when multiple holes of her heart were closed, virtually giving her a new lease of life. Noor was diagnosed as having a ventricular septal defect (VSD) with pulmonary stenosis – holes in the heart is mixing of pure and impure blood, this, in turn, leads to other complications.

Peace and Patience were a set of conjoined twins. They were joined at the abdomen and lower chest, sharing important organs such as liver, bile structures and intestines. They were successfully separated at Narayana Hrudayalaya and the operation was performed by a large team of doctors including paediatric surgeons, liver surgeons, anaesthetists and intensive-care specialists.



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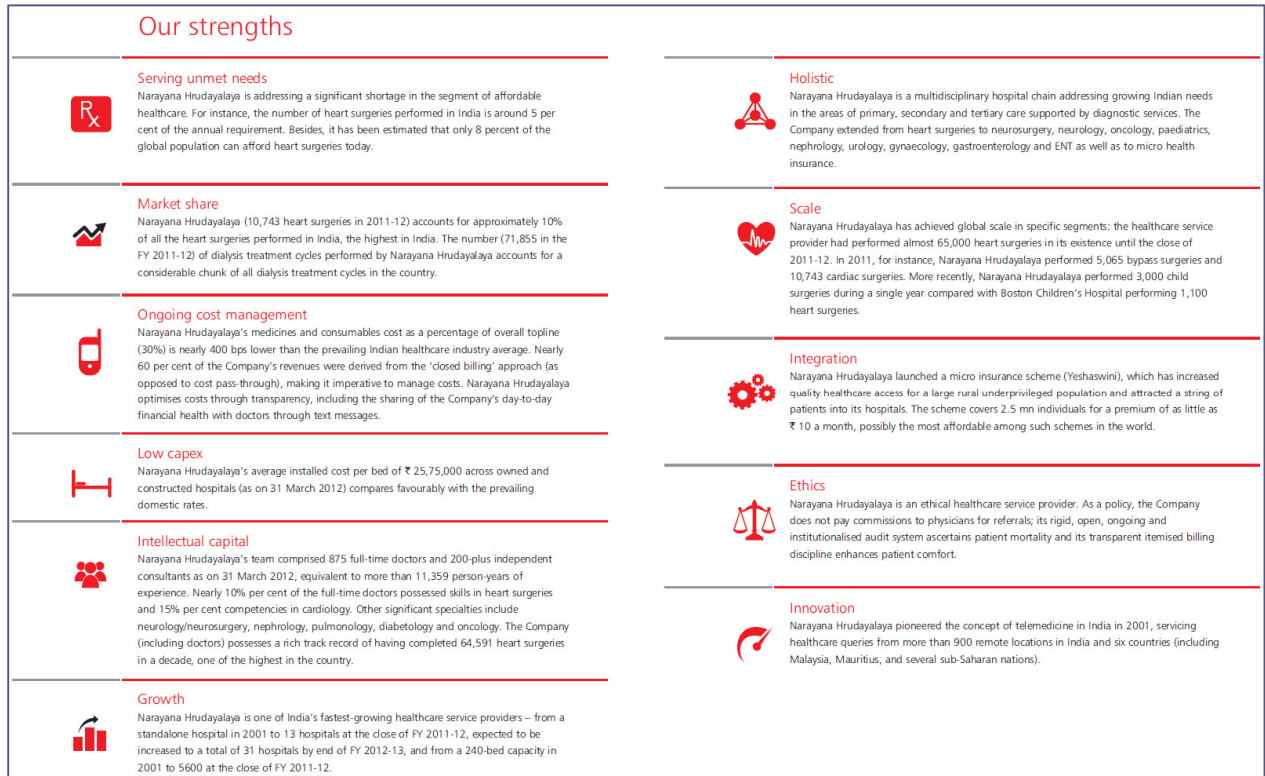


Figure 28: NH Group's key strengths

NH Group: Corporate Social Responsibility

Vajpayee Arogyashree: The Government of Karnataka implemented a health insurance scheme called Vajpayee Arogyashree for below-the poverty-line families of Karnataka in association with many hospitals including Narayana Hrudayalaya. The insurance scheme covered major ailments with provisions for subsidized surgeries, particularly in rural areas.

Yeshaswini Health Care Scheme: This rural health care scheme was conceptualized by Dr. Devi Prasad Shetty of Narayana Hrudayalaya in 2002 in association with the Principal Secretary to Government of Karnataka, Co-operation Department and officers of the Co-operation Department. The scheme was assisted by Government of Karnataka. The Yeshaswini health care scheme, implemented through network hospitals, provides cost-effective quality healthcare to co-operative farmers across Karnataka.

Arogya Raksha Yojana: This is the vision of two prominent personalities – Dr. Devi Shetty of Narayana Hrudayalaya Hospital and Dr. Kiran Mazumdar Shaw of Biocon Foundation. Arogya Raksha Yojana is a comprehensive health insurance plan that offers rural Indians affordable quality healthcare through a network of renowned hospitals and clinics supported by leading doctors and surgeons. Arogya Raksha Yojana believes in the collective power of the masses to provide competent healthcare, emerging as a self-sustaining model worthy of pan-Indian replication.

Rajiv Gandhi Arogya Yojana – Amethi: Project RAY was initiated 2005 to develop a model rural primary health care system. The project is working under the leadership of the Chairman of Narayana Hrudayalaya, and supported by Rahul Gandhi, the sitting Member of Parliament of Amethi. This project comprises 16 primary healthcare clinics across 16 blocks of the Amethi constituency, addressing the basic healthcare needs of 2.5 million people in a 3,800 sq. km area.

Onco Grid/Cancer Net: Onco Grid/Cancer Net is an innovative outreach program, radically changing the way cancer prevention and treatment is delivered to the masses. As a part of this program, cancer detection and prevention centers are set up in the community with health workers trained to detect common asymptomatic cancers. This helps down-stage cancer treatment and lower costs. The cancer-detection network is coordinated using a smartphone mobile network developed at the Mazumdar-Shaw Cancer Center along with SANA (research group at Harvard and MIT).

NGO support work: Adequate health care infrastructure can be created through hospital community outreach programs. These outreach programs help build hospital community collaboration leading to the development of a shared health vision. Under the leadership of Dr. Devi Shetty, Narayana Hrudayalaya is establishing ‘an equitable distribution of world class healthcare for the masses at an affordable cost’.

Udayer Pathy – ‘Doctoring the Future’: Narayana Hrudayalaya and Asia Heart Foundation believes in developing qualified medical graduates for sound healthcare delivery. Towards this endeavor, Narayana Hrudayalaya launched a financial assistance/ scholarship program for school students in West Bengal. This scholarship program identifies students from government schools in small towns and villages in the state, helps them access a medical seat based on merit and assists these students by arranging loans from banks/financial institutions while standing as guarantors. From this year onwards, Narayana Hrudayalaya will provide underprivileged class XI students two-year financial assistance towards tuition fees while they prepare for their Joint Entrance Examination.

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Project Outline

Project Outline

Borosil Glassworks Limited and GNFC are desirous of setting up a multi-specialty tertiary care hospital in Bharuch. The hospital would bridge the gap in accessibility to tertiary healthcare services in Bharuch and the nearby areas of Ankleshwar, Jhagdia, Dahej etc. The hospital would be equipped with state-of-the-art diagnostic and clinical facilities to provide best in class treatment to the local community.

The hospital would be located on a 6 acre land allotted for the purpose by GNFC.

Gujarat Borosil Limited (GBL), a USD 14.5 Million⁵ company, is one of the premier manufacturers of glass ware in India. The Borosil brand is synonymous with quality and extensively used in laboratories, kitchenware, microwave-ware etc. The company commissioned first of its kind Low Iron Solar Glass Furnace on 16th March, 2010 giving it a major first mover advantage in the fast growing solar glass market segment in the country. GBL has an employee and worker strength of 426⁶, not including contract labour.

Gujarat Narmada Valley Fertilizers & Chemicals Limited (GNFC), a joint sector enterprise promoted by the Government of Gujarat and the Gujarat State Fertilizer Company Limited (GSFC) set up in Bharuch, Gujarat in 1976. Initially, starting off as manufacturer of ammonia-urea fertilizers, GNFC has since diversified into areas such as chemicals, petro-chemicals and energy.

⁵ Gujarat Borosil Limited, Annual Report FY 2011 - 12

⁶ Gujarat Borosil Limited, Annual Report FY 2011 - 12

Hospital Structure

The proposed hospital would be multi-specialty tertiary care unit. The hospital would have 150 beds in the first phase spread over a total built up area of approximately 1,00,000 sq. ft. The facility would consist of the following medical (core) and support (non-core services) –

- OPD facilities
- Diagnostic facilities
- Clinical Laboratories & Blood Bank
- Emergency
- Operation theatre rooms with Pre / Post OP facilities
- ICU's
- General Wards
- Dialysis
- Administrative facilities, Medical Records room
- Service facilities such as CSSD, Dining, Kitchen
- Stores – General, Maintenance, Consumables, Pharmacy with Loading & Unloading Bay.
- Bio-Medical Engineering room

Supporting infrastructure facilities for the hospital like:

- Substation
- EB Metering Yard
- Sump & Pump room
- Medical Gas Manifold room
- Mortuary & Bio-Medical Waste Segregation room
- Sewage Treatment Plant – Sump & Pump room

The rationale of proposing a multi-specialty unit is based on the fact that an increasing number of patients, both urban and rural, are exhibiting co-morbidity and require the intervention of multiple specialists to provide holistic treatment. Moreover, multiple specialties would allow the hospital to better utilize expensive diagnostic facilities. For e.g. CT Scan and MRI serve cardiac surgery, neuro-surgery, orthopedic surgery and gastro-intestinal surgery. ECHO and Ultrasound are useful

for diagnosing urology, gynecology, vascular and cardiology related problems in patients.

The hospital would consist of three cores –

Outer core – OPD Zone

The OPD zone is the first approach for any patient to this hospital. Patients entering the OPD entry will be exposed to a series of consultation rooms catering to different departments, treatment rooms and diagnostic facilities. An out-patient waiting room for the OPD facility is planned on the sides of the OPD block with separate toilet facilities.

The emergency facilities & maternity wards are planned as a separate arm and it has the following facilities.

- Examination Lobby
- Police booth
- Help desk
- Triage
- Treatment room
- 4 observation beds
- Labor ward
- Delivery rooms
- NICU
- Neonatal Resuscitation
- Duty doctor room

The diagnostic facilities planned in the Phase 1 are as follows.

- Ultrasound
- ECG
- Echo
- Treadmill
- Pulmonary lab
- Audiometry
- EEG
- EMG
- Lithotripsy
- Uro-dynamics
- Endoscopy
- Mammography

Clinical Laboratories and Blood Bank are also planned very close to OPD and IPD areas for easy access. Dialysis with its supporting facilities would also be planned close to the OPD core for easy access of visiting patients.

Intermediate Core – Radiology and Critical Care Zone

The intermediate core accommodates the radiology diagnostics and the critical care areas such as the intensive care units, operating rooms, pre and post-op holding bays etc. Since, the radiology unit serves the out-patients, emergency department and the in-patients; the location of the radiology wing is of particular importance and is located so as to enable optimal access from all three areas. Inter-dependent departments / diagnostics would be located next to each other to facilitate efficient use of resources. Radiology department would also be planned in such a manner so that it is away from maternity department and patient waiting areas to ensure patient safety.

The diagnostic facilities include

- X-Ray
- MRI
- CT Scan

The Intermediate zone would have the following facilities.

- Operation Theatres
- Pre / Post Op beds
- OT & ICU support services
- Change rooms for Male & Female
- Equipment & Sterile Store
- Anesthetist room
- ICU beds
- Duty doctor rooms
- CATH Lab with patient hold, console & wash
- CSSD

Suitable zoning shall be planned to minimize crisscross of fresh and used material, manpower and patients.

Inner Core – In-Patient Departments

The inner IPD zone would consist of wards and holding areas for recuperation of medical and surgical in-patients. The zoning shall be so planned to minimize traffic and provide a peaceful environment for the patients to recover.

The wards would be further categorized as general wards, semi-private rooms, private rooms and deluxe rooms to provide service differentiation and address the specific requirements of various classes of patients.

Wards would be supported with the following facilities -

- Treatment room
- Nurses' station
- Clean Utility & Drug Store
- Dirty Utility
- Duty Doctor rooms

The broad area categorization

Land area requirement	6 acres
Total built-up area of the hospital	100,000 sq. ft.
Foot plate area	60,000 sq. ft.
Facility spread	Ground + 1 floor, total building height – 10 m (max.)
Total number of census beds	150 beds (in phase 1)

Facility Mix

The proposed hospital would accommodate about 20 outpatient consultation rooms, 5 nos. operating rooms and 40 intensive care beds. The women and child ward would consist of 2 delivery bays, labor ward with 6 – 7 beds and 8 nos. NICU / PICU beds.

Total number of census beds	150 beds
Total number of OPD rooms	20 rooms
Bed split	<ul style="list-style-type: none"> • ICU beds 40 beds • Casualty 10 beds • General ward beds 40 beds • Semi-private beds 30 beds • Private beds 25 beds • Deluxe beds 05 beds
Operating Theatres	4 nos. major + 1 no. emergency gynecology OT
Emergency / triage	1 no. minor OT
Delivery bays	2 nos.

Typical area statement

AREA DESCRIPTION	AREA (SQ. FT.)
Consultation rooms	110 sq. ft.
Operating Theatres	450 - 550 sq. ft.
CATH Lab	450 sq. ft.
MRI	500 sq. ft.
CT Scan	450 sq. ft.
Endoscopy suite	400 sq. ft.
X-Ray /mammography	250 sq. ft.
Critical care areas (per bed)	120 – 130 sq. ft. per bed

Specialty Mix / Diagnostic Mix

The Bharuch market is deficient in tertiary care and super-specialty services. Hence, the proposed hospitals would be equipped with super-specialties and the requisite high end diagnostic and radiology facilities to ensure holistic and complete care to the patient under one roof.

<p>Super-specialty services provided by the hospital</p>	<ul style="list-style-type: none"> • Cardiology & cardiac-surgery • Neurology & neurosurgery • Medical & Surgical Gastroenterology • ENT • General surgery • Vascular & Endo-vascular surgery 	<ul style="list-style-type: none"> • Orthopedics • Urology • Nephrology • Women & child • Plastic surgery • Pediatric surgery • Other ancillary specialties
<p>Prominent diagnostic facilities planned</p>	<ul style="list-style-type: none"> • CATH Lab • 16 slice CT scan • 0.5 Tesla MRI • Digital x-ray • Mammography • Endoscopy suite 	<ul style="list-style-type: none"> • ECHO, TMT & ECG • Ultrasound • EEG, ENMG & Sleep lab • Lithotripsy • Audiometry

Project Cost Estimates for Phase 1

The proposed hospital shall be developed in phases, with 100,000 sq. ft. total built up area in Phase 1 accommodating a total of 150 beds. The cost of land has been considered at a nominal price of INR 200,00,000 at the rate of INR 200 per sq. ft. of built up area.

The detailed break up of costs shall be as follows –

Total built up area	sq. ft.	100,000
CAPEX ESTIMATES		
	Rate per sq. ft. (in INR)	Total cost (INR in lacs)
Land	200	200.00
Building	1000	1,000.00
Mechanical, Electrical & Plumbing	1200	1,200.00
Interior finishing & External development	500	500.00
Medical equipment	1,509	1,509.00
Non-medical equipment & furniture	190	190.00
Grand Total		4,599.00

Figure 29: Project cost break up for Phase I

Further, it is proposed that the hospital in Phase 1, shall be equipped in stages in line with the growth in occupancy levels to prevent lock in of capital in the initial stages itself.

CAPEX Breakup

The capital requirement for the project neglecting nominal cost of land works out to INR 43.99 Crores, out of which

Contribution from

- Narayana Hrudayalaya - INR 7 Crores
- Promoter - INR 36.99 Crores

Staffing Plan for Phase 1

The proposed hospital shall be staffed in line with industry standards. Each specialty would have a super-specialist at the level of a senior consultant. Further, the staffing strategy would envisage having visiting consultants at a minimum of one per specialty to drive volumes and utilization initially.

The broad numbers for the man power grid (administrative and para-medical staff) is as follows –

Particulars	Year 1	Year 2	Year 3	Year 4
	No.	No.	No.	No.
Nurses	110	170	200	210
Physiotherapists	2	4	4	4
Residents	20	33	37	39
Technicians	22	36	40	43
Finance, HR, Purchase & Inventory, Maintenance Manager	4	4	4	4
Facilty Director	1	1	1	1
Junior Executive	16	26	30	32
Senior Executive	6	10	11	12
Head Nursing	1	1	1	1
Head Medical services	1	1	1	1
Total	183	286	329	347

Figure 30: Indicative staffing plan (year-wise till hospital maturity)

Marketing plan

The marketing plan for the hospital shall have two main objectives – creating awareness of the hospital services and ensuring a steady patient load from across the district.

During the initial roll out phase, an intense awareness campaign of the hospital services would be initiated. The awareness campaign would include teaser campaigns, free health check-up camps, media involvement in creating awareness about preventive health checkups and lifestyle related modifications to avoid diseases such as diabetes, hyper-tension, obesity etc. The marketing teaser and awareness campaign shall be rolled out to include corporates, schools, Government and public offices, shopping areas etc.

During the initial year of operation, the marketing department shall undertake public outreach programs pioneered successfully by Narayana Hrudayalaya. The objective of the outreach programs and camps shall be to reach out to maximum number of people in the drainage area. Free health checkup and screening camps shall be conducted with the help of hospital doctors. Diagnostics such as ECG, Ultrasound, ECHO, physical screening etc. shall be conducted to screen patients and identify problems in time and advice people on the correct medical intervention necessary to prevent buildup of the problem. Community health workers shall conduct door to door campaigns to ensure that the people utilize the facilities made available to them during these outreach programs.

The marketing team shall also organize Continuous Medical Education programs for doctors in the district and in the State of Gujarat to facilitate greater knowledge sharing and to create an awareness of the facilities available and the medical work being carried out in the hospital amongst the medical fraternity in Bharuch and Gujarat.

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Project Development Plan

Project Development Plan

Normal hospital projects involve a gestation period of 18 – 24 months for design and planning and construction. However, at Narayana Hrudayalaya, through rigorous planning and standardization of vendors, processes and protocols, the project gestation period has been brought down to 12 – 15 months.

Project Management @ NH

The project management team at NH enjoys a proven track record of designing and setting up all its group hospitals across India. The team has a vast experience of working closely with the medical professionals at NH hospitals and enjoys the advantage of tapping into medical planning resources of senior medical professionals and doctors at NH.

The project management set up at NH includes architects, design engineers, project managers and site execution experts who are well versed in the nuances of designing and building super-specialty cardiac and tertiary healthcare facilities.

Planning, design and construction

The planning, design and construction phase is the one of the most important phases in setting up a super-specialty hospital. This phase lays the basis for an operationally efficient hospital capable of serving patients in the most optimal way.

Workflow and medical space planning

The operational efficiency of a hospital is ensured by an optimal space planning. Narayana Hrudayalaya would utilize its collective experience in designing and operating 14 super-specialty hospitals across India to help formulate the space planning program for the hospital. This would include –

- Understand promoter's expectations and assisting in preparing the project brief
- Review of the hospital design prepared by the nominated project architects

- Review the medical space planning for adequacy and suggest changes necessitated by
 - workflow dependencies and
 - medical equipment requirements
- Suggest necessary changes to align the design with the promoter's expectations

Architectural & MEP design

Medical departments and allied services require comprehensive provisioning of support services for seamless functioning. The scope of services under this head would include

Schematic design stage

- Review of architectural plans for adequacy and for provisioning of support services
- Propose design concepts in line with the project brief
- Ensure adequate space provision for accommodation of allied services and support functions
- Review final schematic drawings with recommendation to promoter for final approval

Design development stage

- Coordinate with the promoter, architects, structural and MEP consultants for coordinated design development drawings
- Review and recommend for approval, the design development drawings and specifications including
- building elevations, incorporating all building elements such as doors, windows, shafts, materials, signage's etc.
- structural design report indicating type of structure, loading patterns and design parameters
- preliminary engineering design report for all engineering disciplines indicating type of system proposed along with justifications (technical and financial), basic engineering scheme, preliminary costs, suggested vendors etc.

- architectural finishes including flooring material, wall dado, false ceiling, furniture selection etc.
- specialist services like, IT, laundry, kitchen, CSSD, medical graphics & signage, medical gas systems and medical equipments

Tender stage

- Review drawings, tender specifications and bill of quantities
- Review comprehensive detailed design report along with detailed cost estimates
- Recommend to promoter for approval to issue of tenders to contractors
- Suggest qualified contractors who are capable of executing the work and meeting the expectations in terms of quality, cost and time

Construction stage

The construction stage can be broadly divided into pre-construction, construction and post-construction phases. NH project team members would frequently visit site to assist the promoter's engineers at site in ensuring that the construction activity progresses as per the schedule and as per the overall plan and design of the hospital.

Pre-Construction Phase

- Visit the site and or assess the scope of development, which may be required for planning the total development of site.
- At completion of schematic design phase verify & confirm the budgeted cost of construction of the project as prepared by the Architect/Design Consultants.
- Conduct pre-bid conferences to familiarize the Vendors with the Tender Documents, management techniques and with any special systems, materials and methods.
- Evaluate the quotes received and help the promoter in contract negotiations leading to selection of contractor(s) for the various tender packages and make recommendations for award of contracts.

Construction Phase

- Recommend course of actions when the contractual requirements are not being met and co-ordinate the work with the activities and responsibilities of the promoter, Architect/Design Consultants to complete the project in accordance with the promoter's objectives of cost, time and quality.
- Develop the procedure for the review and processing of applications for payment by the contractors for progress and final payments, in consultation with the promoter.
- Review shop drawings (as may be required), co-ordinate with the Architect/Design Consultants with comments for their approval.
- Review mock-ups and samples as submitted by contractors / suppliers
- Determine when a project is substantially complete, and take necessary steps that are required before the certificate to this effect can be issued.
- Final inspection, checking/monitoring of testing, and commissioning of the system.

Post Construction Phase

- Review maintenance manual containing 'As-Built drawings' prepared by the Architect/Design Consultants/Contractors (as applicable) lists.
- Assist Client on rectification of defects (if any) by the contractor during defect liability period.

Equipment & Surgical Instruments planning and procurement

- NH would assist the promoter in preparing detailed BOQs and specifications for the medical equipments and surgical instruments.
- The procurement team at NH would assist in getting quotes from the vendors and would also participate in negotiations with the vendors to obtain the best possible rates.

Medical furniture planning and procurement

NH would assist the promoter in planning the bill of quantity and finalizing the stainless steel furniture such as medicine trolleys, crash carts, OT furniture, CSSD furniture etc.

CSSD set-up planning and commissioning

NH would help the promoter to identify the sterilization department equipments and also in staffing the CSSD and establishing standard protocols for operation of the CSSD.

Contractual services finalization

NH would assist the promoter in finalizing the following outsourced activities –

- **Food & beverage services:** planning, design, preparation of patient menu and identifying F&B vendors
- **Laundry services:** evaluating the laundry load and negotiating best possible rates for the various types of hospital laundry such as OT linen, soiled linen, patient linen etc.
- **House-keeping services:** assist in negotiating & finalizing house-keeping vendors
- **Maintenance:** evaluate various facility management providers for the expertise in operating equipments like chiller, DG sets, AHUs, transformers, electrical panels, cooling towers etc., review man power deployment chart etc. for seamless operation of the hospital services
- **Security:** evaluate the security agencies and prepare the security personnel deployment requirement

Essential requirement finalization

NH would assist the promoter in finalizing certain essential requirement unique to the hospital operations such as –

- Stationery, formats and administrative items
- Patient & staff uniforms and linen
- Nurse call system
- Central medical gas system
- OT cleaning, fumigation and setting up
- ICU cleaning and setting up

Regulatory and licensing requirements

Currently, a super-specialty hospital requires almost 60 licenses to comply with the various Central and State Legislative requirements. NH would assist the promoter with the complete requirement such as

- Documentation and comprehensive file preparation
- Staffing requirement
- Collecting requisite documents from the staff for licenses such as medical registration certificates etc.
- Work with the client liaison contact to submit the files and interact with the Government officials
- Assist in providing clarification wherever possible on queries raised by authorities
- Ensure site presence during inspection by various authorities

Medical professionals' recruitment

NH would assist the promoter in identifying the right medical talent, interviewing and in final selection of doctors, nurses, technicians, para-medical personnel etc.

Project Timelines

The project timelines shall be as below. It is envisaged that the statutory clearances and licenses required prior to commencement of construction shall be worked upon and put in place before commencement of the construction at site.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Activity															
Architectural & MEP design															
Award of tenders															
Civil work															
Mechanical, Electrical & Plumbing															
Architectural finishing															
Hospital set up and operational readiness															

Figure 31: Project Timeline chart

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Operational Plan

Operational Plan

The Narayana Hrudayalaya Group would operate and manage the Trust's hospital and in turn provide a share of the revenue to the Trust. NH would commit its resources to ensuring efficient day to day operations of the hospital. The detailed scope of services that would be provided by NH would include the following –

Day to Day Management of the Hospital

NH would be responsible for the day to day running of the hospital including getting good clinical talent, management and other support staff. NH would provide quality services to the patient populations from the surrounding districts.

Sourcing and supply chain management

- Ensure procurement of all consumables and medicines required by the hospital at the pre-negotiated rates of the NH group, which in all cases would be significantly lower than the market rates due to the cost advantages of bulk procurement in huge volumes.
- Availability of material at preferential schedules enjoyed by NH group, thereby lowering inventory holding costs significantly.

Standards, protocols and processes

- NH would put in place standard operating protocols and medical risk management procedures, and thereby ensure quality medical outcomes and lower risk to patients.
- NH would train nursing and para-medical personnel in standard operating procedures and protocols for patient care.

Accreditation

- NH would operationally prepare the hospital for obtaining nationally recognized accreditation such as NABH, NABL, blood bank accreditation etc.

Extend life and reduce cost of ownership of medical equipments

- NH would provide professional care of bio-medical equipments through its tie up with Trimedx, an US based company with vast experience of maintaining specialized equipments across large number of US hospitals.
- Reduce cost of maintenance through the in-house services provided by Trimedx.

Academic training

- NH would assist in establishing nursing college and technician training programs to develop professionals adept in patient care, thereby creating a human resource pool for the hospital

Talent acquisition

- NH would attract quality medical talent through NH's brand reputation, thereby enabling patient's access to best quality of medical care.

Marketing

- NH would provide access to the use of the NH brand for attracting patients, technicians and medical professionals
- The brand would attract corporates and government bodies looking for quality care at affordable prices for their employees

Out-reach programs and camps

- NH would leverage its expertise in reaching out to large number of rural and semi-urban population by conducting large scale out-reach programs and outdoor camps

Continuous medical education

- NH would conduct knowledge sharing sessions with its doctors at other group locations to facilitate leverage of the collective knowledge in the group

Tele-radiology & tele-medicine

- NH would allow utilization of its tele-radiology services to provide 24x7 access to the medical expertise of senior radiologists centrally located at Bangalore

Information System

- NH would allow access to the Group's Hospital Information System (HIS), Laboratory Information System (LIS) and to the ERP system of the NH group for better planning of resources and operations

Senior management support

NH would provide its senior management team's expertise in running a commercially and operationally successful hospital

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**Proposed
Operational Models**

Proposed Operational Models

Fee for the design consultancy and project management services

It is proposed that NH is paid a lump sum amount of 1.5% of the total project cost for its support towards on design planning, project management and pre-operative commissioning of the hospital. In addition to this NH would be reimbursed actual costs incurred on travel and stay for its personnel providing support during the project phases. NH will do its best to minimize costs in this regard.

Proposed Operational Model – Model 1 Management Fee model

The promoter would be assisted by the NH group in running the operations of the hospital in return for a management fee.

- NH would provide management expertise to the promoter in operating a super-specialty hospital. Day to day operations of the hospital would be taken care of by NH
- The scope of services and benefits of associating with the NH group such as sourcing and supply chain advantages, talent acquisition, standard operating procedures etc. would be made available to the promoter by NH.
- The promoter would own the responsibility of the profit and loss account of the hospital.
- The payment to Narayana Hrudayalaya would be as follows –

Annuity: 2% of revenues towards costs incurred by NH on corporate overheads.	
Year 1 – Year 2	Fixed payment of INR 4 lacs per month
Year 3 – Year 4	1% of gross revenue plus 15% of the EBITDA.
Year 5 – Year 10	2% of gross revenue plus 15% of the EBITDA.
Year 11 – Year 20	3% of gross revenue plus 15% of the EBITDA.

- The term of the management agreement would be for a minimum period of 20 years with an option to extend further subject to mutual agreement.

Proposed Operational Model – Model 2

Profit & Loss owned by NH

In this model, the P&L responsibility would be owned by the Narayana Hrudayalaya group.

- NH would operate the hospital and own the responsibility for the profit and loss account of the operations.
- The promoter would invest on the capital expenditure incurred on the building, associated utilities and services, architectural finishes and the medical equipments. Any expansion of the infrastructure would also be invested by the promoter.
- All expenditure incurred on the day to day operations and the maintenance would be taken care by NH.
- All future expenditure for replacement/repair of medical equipment for the existing facility would be the responsibility of NH.
- The term of the agreement would be for a minimum of 20 years with a provision to extend further based on the mutual agreement of both parties.
- In return for the promoter's investment in the project, NH proposes a revenue share to the promoter such that there is a return of approximately 8% IRR on the total investment in the first 20 years of contract.
- The revenue share would be paid from the 2nd year onwards with the 1st year being a moratorium towards stabilizing the operations of the new unit.
- In addition, NH would also provide charitable and affordable care to the common man in line with its mission similar to that in its other group hospitals.

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Projected Financials

General Assumptions

1. 300 working days has been considered for revenue calculations.
2. The capacity utilization matrix has been benchmarked based on NH's experience at its hospitals elsewhere and the market dynamics. The same has been considered as per the matrix below –

Year	Capacity Utilization
Year 1	30%
Year 2	50%
Year 3	65%
Year 4	75%
Year 5	78%
Year 6 onwards	80%

3. Price increment year on year has been considered at 5%
4. For the purpose of calculating revenue share to the promoter, revenue from implants has been considered at 10% of the gross revenues for calculating net revenues.

P&L Snapshot

Particulars	Construction Period	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Occupancy		30%	50%	65%	75%	78%	80%
REVENUE :							
<i>Surgical Revenue</i>	-	787	1,404	1,953	2,411	2,683	2,944
<i>Non Surgical Revenue</i>	-	84	150	209	258	287	315
<i>OPD Diagnostic, Pharmacy & Lab Revenue</i>	-	469	836	1,163	1,435	1,597	1,753
TOTAL REVENUE	-	1,340	2,390	3,324	4,104	4,567	5,012
Avg. revenue Per Occupied bed		30	32	34	36	39	42
COST :							
Variable Cost							
<i>Fees To Doctor</i>	-	590	813	997	1,149	1,142	1,253
<i>Medicines & Consumables</i>	-	536	717	997	1,149	1,279	1,403
<i>Other Variable Cost</i>	-	134	191	266	328	274	301
Fixed Cost							
<i>Salaries & Administrative Expenses</i>	-	536	717	898	1,108	1,187	1,303
TOTAL COST	-	1,796	2,438	3,158	3,735	3,882	4,260
EBITDA	-	(456)	(48)	166	369	685	752
EBITDA Margin (%)	-	-34%	-2%	5%	9%	15%	15%

Figure 32: P&L Snapshot (All cost & revenue figures are in INR in lacs)

Some key points to be noted are as below –

- EBITDA break even period – Year 2
- Cumulative cash break even period – Year 4

Cash flows to Narayana Hrudayalaya & promoter

Year	Model 1: Management fee payment to NH		Model 2: Revenue share payout to promoter by NH	
	NH	Promoter	NH	Promoter
All figures are INR in lacs				
Year 1	48	(504)	(515)	-
Year 2	48	(96)	(153)	105
Year 3	58	109	20	146
Year 4	95	274	80	289
Year 5	192	493	364	322
Year 6	211	541	399	353
Year 7	229	636	507	358
Year 8	240	668	532	376
Year 9	252	701	559	395
Year 10	265	736	587	415
TOTAL	1,638	3,558	2,379	2,758

Figure 33: Cash in-flow to promoter & NH in Model 1 & 2

Note:

- Promoter cash flows in Model 2 are estimated assuming net revenue share payout as below –

Year 1 – Year 3	5% net revenue share
Year 4 – Year 10	8% net revenue share
Year 11 – Year 20	10% net revenue share

- In Model 2, where in Profit & Loss is owned by Narayana Hrudayalaya, all replacement CAPEX shall be borne by NH.
- In Model 1, all cash flows to NH exclude the annuity payment of 2% towards its corporate overheads including branding, Information Technology license charges, central marketing support and SCM / procurement support.