

Feasibility Study for 200 Bed Hospital, Thane

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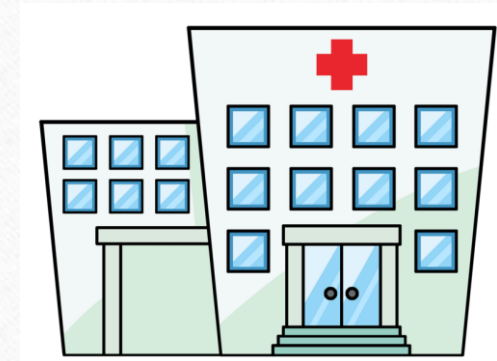
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Introduction

- In Thane, a global healthcare group wants to acquire 200 bedded hospital under construction.
- Client wants PwC to do the feasibility study in Thane market and to understand the market potential for acquiring the hospital.



Problem Statement

Thane has an acute shortage of good corporate hospitals which can cater to the needs of the growing middle class as there is just one premium set up for the entire city. Thus, residents in Thane have to travel to Mumbai in order to avail tertiary healthcare facilities. To address this unmet demand, the client is contemplating the acquisition of an under construction 200 bedded hospital located within a premier residential complex of Thane.

Research Question?

- Is there a feasibility for one more hospital to be setup in Thane, to provide tertiary healthcare facility that caters to the upper middle class population of Thane?



Objectives

➤ **General**

- ❖ To understand the feasibility for a hospital in thane market

➤ **Specific**

- ❖ To assess the need of the area
- ❖ To obtain demographics of the particular area.
- ❖ To assess the Consultant Engagement Model.
- ❖ To identify and analyze competitors market.

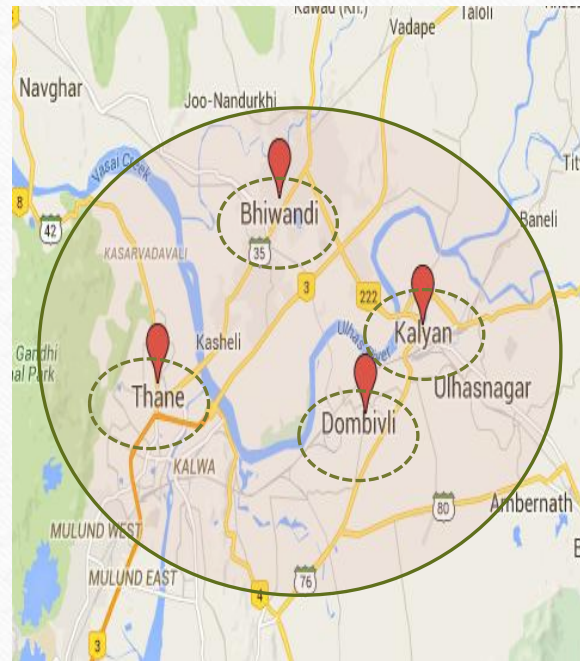
Research methodology

❖ Study Period

15 February-15 May 2016



❖ Area of study



❖ Study Type



Data collection Method

Interviews



Doctors(20)



Administrators(10)



Medical Suppliers(10)

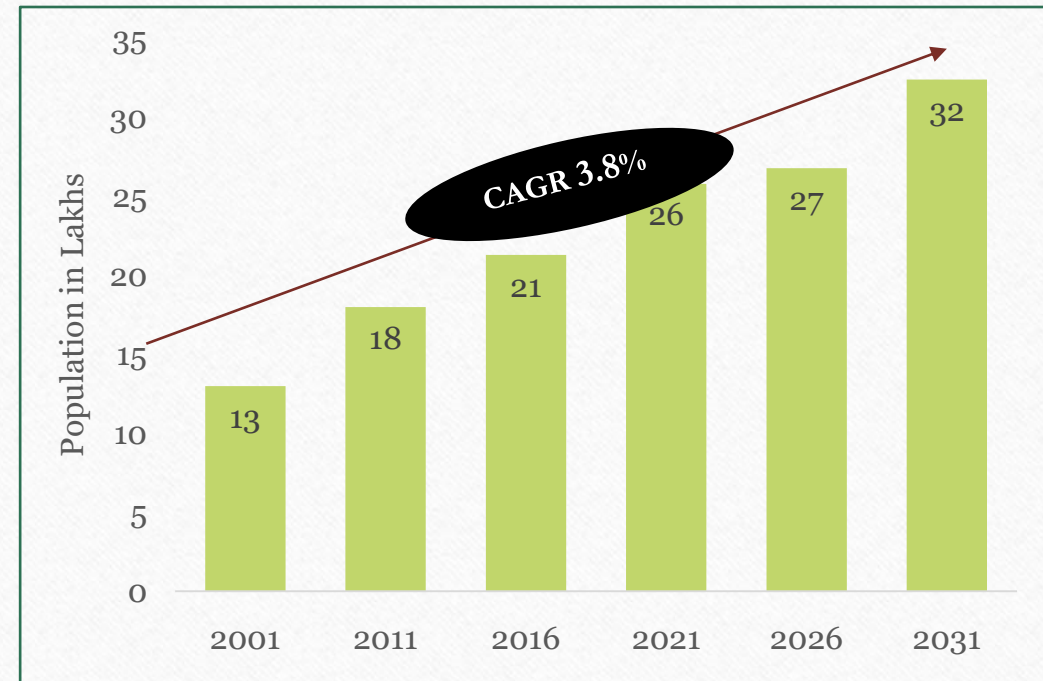
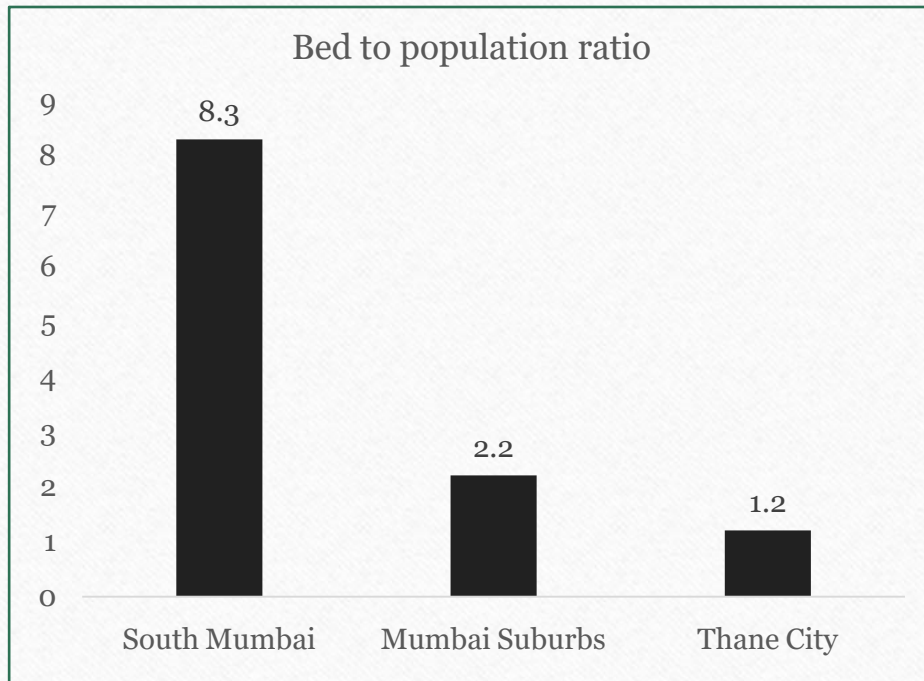


Pre-designed Questionnaire

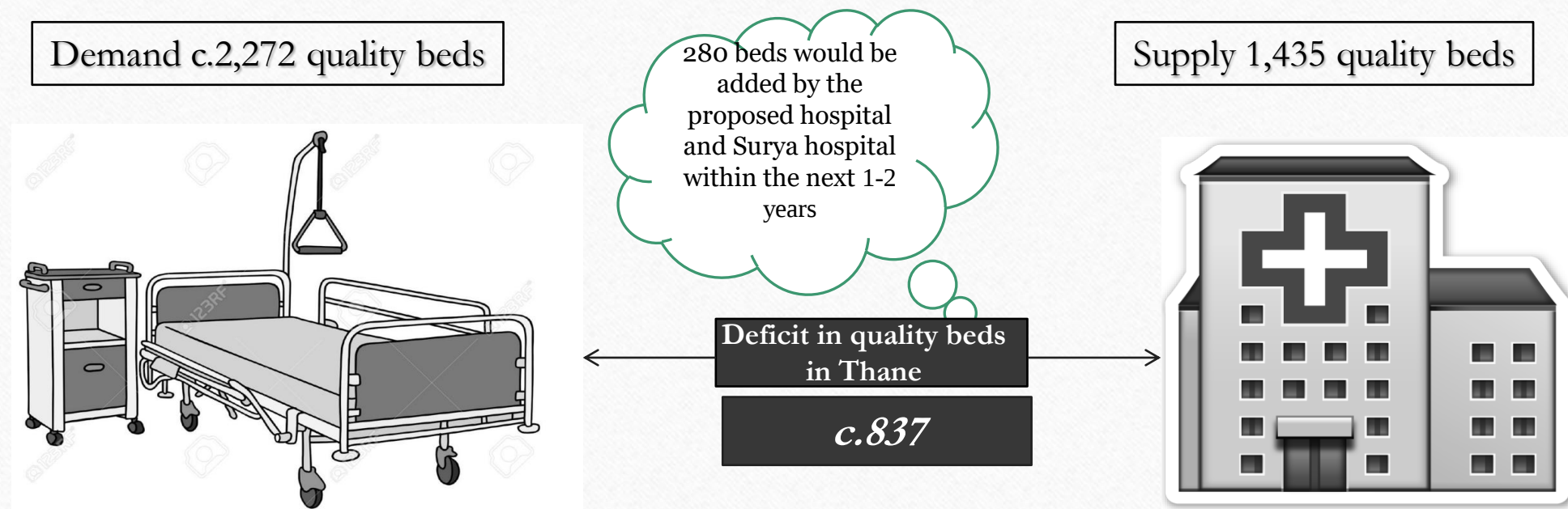
- ❖ Volumes for key procedures in major hospitals – Joint replacements, angiographies, PTCA, CABG, deliveries , Oncology,
- ❖ Key doctors across specialities (Cardiac surgeon, Neurologists, Nephrologists) in the city
- ❖ Bed mix
- ❖ Underserved specialties in the city
- ❖ Patient mix – Cash, Insurance, Corporates, PSU's
- ❖ Drainage area for patients (City, Suburbs of Mumbai and Thane)
- ❖ Flow of patients from Thane to Mumbai hospitals
- ❖ Patient referral system
- ❖ Price points for Key procedures viz. Joint replacements, angiographies, PTCA, CABG, deliveries , bed categories
- ❖ Physician engagement model for key doctors (retainer, fee sharing, retainer+ fee sharing) and doctor payout % in surgeries.
- ❖ Expansion/Upcoming plans for major hospitals in the vicinity
- ❖ Salaries for key personnel Viz Nurses, Technicians, pharmacists, RMO's

Critical Findings

- ❖ Thane city has a high population growth rate and low bed to population ratio as compared to Mumbai, thereby demonstrating a clear unmet demand for healthcare



- ❖ The Thane private healthcare delivery market is sized at c. INR 25.4 billion; the market is dominated by unorganised players with Jupiter Hospital being the only major multispecialty healthcare provider
- ❖ Currently, Thane has a deficiency of c. 837 quality beds, which is poised to increase further considering the growing population of the target areas





- ❖ Ghodbunder Road has been a key factor in changing Thane's landscape, and has become a hub for premium residential complexes which attract upper middle class nuclear families
- ❖ Thane (West) witnessed good activity due to their connectivity and proximity to important commercial and industrial areas in the region..
- ❖ With the selection of Kalyan and Dombivli as smart cities, one may expect significant commercial as well as residential activity in these areas in the coming years.

<u>Road Network</u>	<u>Railway Network</u>
❑ Thane is connected to CST/South Mumbai via 24 km eastern express highway. ❑ Thane is connected to western expressway by 20 km Ghodbunder road	❑ Connected to Navi Mumbai through Thane-Vashi-Nerul-Panvel line ❑ There is proposed Wadala-Ghatkopar-Thane-Kasarvadavali Metro

Prices for room Accommodation

Hospital	Single room *	ICU	MRI – Brain Plain	CT- Brain Plain
KDAH	6000	7000	7800	3400
Hinduja (Mahim)	7850	8800	13500	4000
Bombay	3700	5500	8500	3500
Jupiter	6200	5500	7800	3300
Fortis Mulund	6100	7500	8800	3350
Bethany	5250	4500	6000	2500

- ❖ All the hospitals have various accommodation facilities in Single occupancy, and the tariff mark up from single room economy category to single room deluxe category would be around 50-100%
- ❖ Hinduja hospital (Mahim) has a premium in pricing as compared to its peers which is reflected in their service delivery
- ❖ Jupiter and Fortis, which would be direct competitors to the proposed hospital, more or less have similar pricing mechanism, and are slightly at a discount of around 10-15% as compared to South Mumbai hospitals
- ❖ The mark up from twin sharing accommodation to single room accommodation would be around 30-100%. Hinduja Hospital has a mark up of ~118%

Thane Hospitals

- ❖ Jupiter is the only multispecialty hospital in Thane, which attracts the middle and upper middle segment by offering end to end quality services under one roof.

Name of Hospital	Location	Operational Beds	Specialty Focus	Comment	Rev (INR Mn)
Jupiter Hospital	Eastern Express Highway	272	Multispecialty	- The only corporate hospital in Thane. - Got first mover advantage to create patient base	~2200 Mn
Bethany Hospital	Pokran Road	107	General Medicine, OBGY and Oncology	Earlier known as Lok Hospital. Bethany hospital has good brand name in the middle income group in Thane	~550-600 Mn
Currae Mother & Child	Ghodbunder Road	30	Gyneac, IVF & Birthing	- Up market birthing hospital - Higher price points as compared to typical nursing home in Thane	~96 Mn
Currae Surgical Centre	Majiwada	15	Day care Surgical	Short stay format. Does more of ortho surgeries. Both the centres were commissioned in 2015	~120 Mn
Kaushalya Hospital	Ganeshwadi	100	General Medicine & OBGY	The hospital is a charitable foundation. Focussed more towards women health	~240 Mn
Vedant Hospital	Kasarvadavli	100	Cardiology & Surgical Oncology	In 8 months of new management change, the hospital has performed more than 300 oncology surgeries	~150 Mn

Proposed New Entrants in Thane

- ❖ Thane has four new hospitals which will commission in next couple of years, with two focusing on paediatrics and one multispecialty in Kalwa.

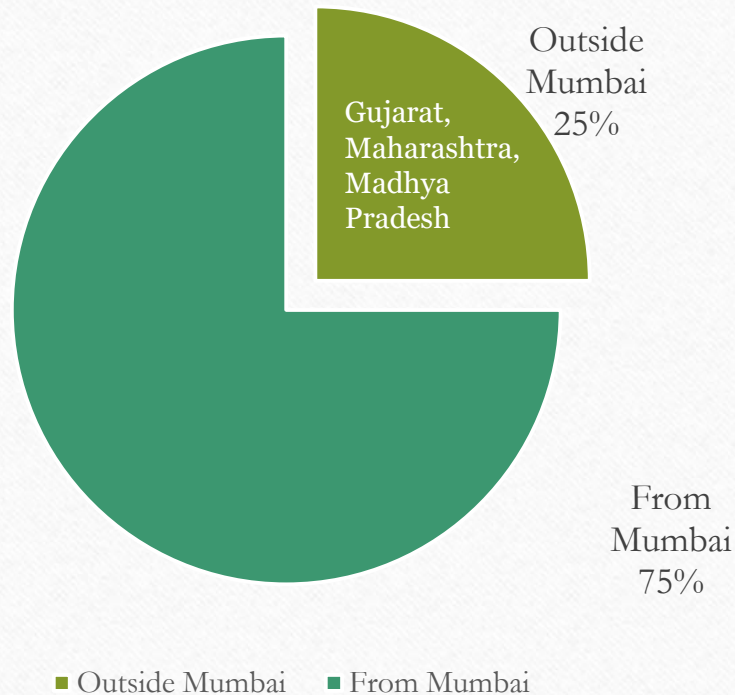
<u>Sapphire Hospital, Kalwa</u>	<u>Surya Hospital</u>	<u>Raptakos Brett & Company</u>	<u>Dr. Rajiv Chabra's</u>
❑ 140 bed hospital in Kalwa. Hospital to commission in 6 months ❑ Marketing of hospital being done on good scale	❑ A dedicated mother and child 60 bedded hospital in Ghodbunder Road, Thane. ❑ Already has presence in Western Suburbs and Pune	❑ Raptakos known for its nutraceuticals and pharmaceutical products, is planning a 100 bed pediatric hospital at Majiwada Junction. ❑ The hospital is in planning phase	❑ Dr. Rajiv Chabra, OBGY surgeon, already has Janam Hospital. ❑ New hospital is under consideration in Thane

Primary Inputs

❖ ~75% of the patient drainage of the major hospitals in Mumbai is from within

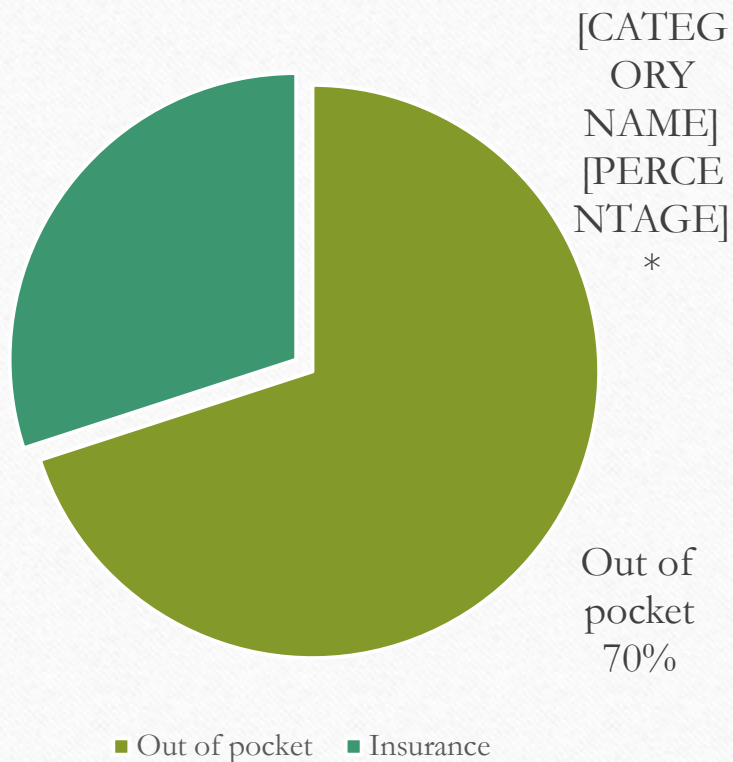
Majority of the patient flow coming into major hospitals is from within the city. 25% of the total patient flow is from outside the city

Patients drainage from Madhya Pradesh, Gujarat, Rajasthan and Chhattisgarh is high to Mumbai hospitals as compared to other states



- Historically, inflow of patients to hospitals in Mumbai was high on account of limited access to good healthcare in other cities. However over time, this scenario has changed
- With Bombay hospital and Shalby hospital in Indore, Wockhardt hospital in Nashik, other multispecialty hospitals in Ahmedabad and Surat, inflow of patients from these cities has declined, since they are able to get services within their cities
- Patients prefer to come to Mumbai for high end tertiary care services like Liver Transplants, Oncology etc.
- Flow of patients to Mumbai is primarily from Madhya Pradesh, Gujarat and Rajasthan
- Hospitals have created centres of excellence for which patients do travel to avail medical treatments. Eg: Bombay Hospital is known for Neurology, Hinduja Hospital (Mahim) for Oncology and Neurology, KDAH for pediatric cardiology and sports medicine, Asian Heart for Cardiac Surgeries

❖ Overall ~70% of the patients pay from out of pocket to meet their healthcare requirements



- The majority (~70%) of patients availing services in the private sector pay out of pockets, demonstrating small proportion insurance penetration
- ~ 30% of patients have some form of insurance including private health insurance, public health insurance, government schemes like Rajiv Gandhi Jeevandayee Yojana, etc
- The pay outs for government schemes vary between 4-8 months with chances of rejections, which hampers the hospitals cash flows
- Rajeev Gandhi Jeevandayee scheme was launched by the state government in 2012 covering the **Below Poverty Line (BPL)** families (Annual income less than 100,000 INR) across state
- Under this scheme, BPL families can avail treatment upto **150,000 INR per year** in empanelled hospitals with a special provision of upto 250,000 INR for kidney transplants
- Seven Hills, Godrej Memorial, Vedant and Bethany are the major hospitals who have empanelled under this scheme primarily to build volumes
- However, other established hospitals of Mumbai viz. Hinduja (Mahim), KDAH, Fortis etc. have shied away from Jeevandayee scheme due to the low tariffs offered

Key insights from industry discussions

“Hospitals in Mumbai with visiting consultant model do not have control on the professional fees charged by doctor as compared to those in full time consultant model. In many hospitals, doctor component fee is negotiated with the patient directly by the doctor”

-Freelance marketing professional

“South Mumbai has high bed to population as compared to Western and Central Suburbs. Hospitals in suburbs will have good potential”

-Cardiac Surgeon

“Patients have been going to South Mumbai hospitals for medical treatments. Given a choice patients would not want to travel a distance, if they have good hospital within vicinity.”

-Head Marketing, Currae Hospital, Thane

“Development of new hospitals in Mumbai has not happened primarily due to high land cost. A project will take time to reach breakeven feasibility if one has to invest in land ”

Mumbai Healthcare

- ❖ Mumbai has ~46,000 hospital beds across public and private sector with overall 56% of bed distribution in South Mumbai 44% in Mumbai suburbs
- ❖ The Mumbai private healthcare delivery market is sized at c. INR 135.3 billion
- ❖ Mumbai's tertiary care healthcare market is dominated by trust based hospitals viz. Hinduja, KDAH, Bombay Hospital, Lilavati etc.
- ❖ In next 2-3 years Mumbai will have commissioning of following hospitals: Khubchandani Hospital, Juhu(400 beds), Suasth Hospital(400 beds), Kalamboli , KDAH, Kharghar(150-200beds) HCG Cancer Centre, Borivali, Nanavati Hospital, Vile Parle, Narayana Health, Mahalaxmi(500 beds).

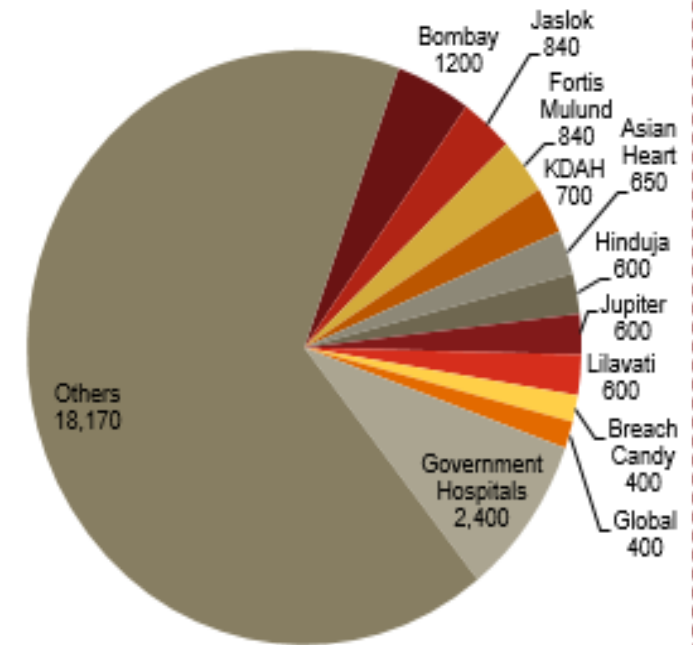
Procedures

Cardiac surgery market in Mumbai PTCA

25,000 PTCA procedures are carried out in Mumbai every year; Bombay hospital & Jaslok are leaders amongst major hospitals. Annually Jupiter performs 600 PTCA procedures and Fortis Mulund performs 960 procedures.

- ❖ Mumbai has ~75-80 cardiac Cath labs. Government hospitals have 5 Cath labs (2 in JJ, 1 each in Nair, KEM and Sion)
- ❖ Public hospitals do around 10% of the total PTCA cases
- ❖ South Mumbai hospitals perform around 7,000 procedures, growing at 5-8% pa
- ❖ Rest of Mumbai performs ~18,000 procedures annually, growing at 10% pa
- ❖ Hospitals like Seven Hills, Godrej, Platinum have high volume base on account of Rajiv Gandhi Jeevandayee Arogya Yojana
- ❖ Asian Heart has higher number of Cardiac surgical procedures as compared to PTCA
- ❖ KDAH is leader in pediatric cardiology cases
- ❖ Hospitals with visiting consultants have 3 components for pricing: Hospital charges (50,000-70,000 INR), Consultant fee (negotiable with the patient) and Stents (60,000 to 200,000). Average bill to patient is 200,000 (in twin sharing with 1 stent)
- ❖ The average ratio of volumes for CAG to PTCA is 2 : 1
- ❖ Number of patients from outside Mumbai have considerably reduced in last 5 years, due to availability of services in other cities

Player-wise market share of PTCA in Mumbai (per annum)



Thane with 5-6 cath labs does close ~1800 PTCA's pa with Jupiter hospital doing ~1/3rd of the total volumes

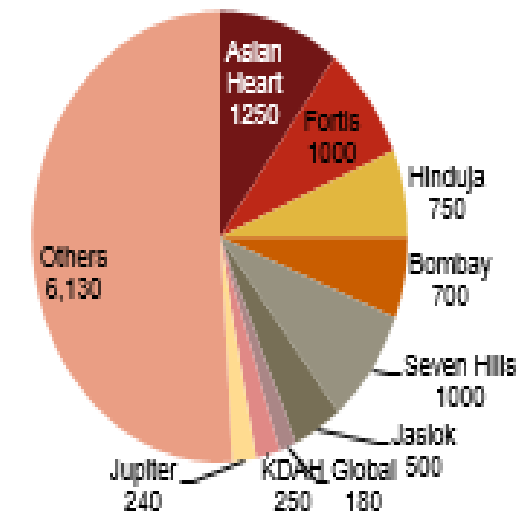
Cardiac surgery market in Mumbai CABG

The volume of CABG's in Mumbai is ~12,000 per annum; Asian Heart Institute is the market leader amongst private players with 10% market share followed by Fortis Mulund

- ❖ South Mumbai hospitals handle ~40% of the work load performing ~4,800 surgeries growing at 6-8% pa and rest of Mumbai does the remaining 60% surgeries
- ❖ Mumbai has around 30 established cardiac surgeons
- ❖ Asian Heart Institute is market the leader in CABG, however their work load has reduced from 125 cases per month to 100 cases per month
- ❖ Public and government hospitals like KEM, Nair and JJ do ~2,000 CABG's pa
- ❖ Godrej Hospital and Seven Hills hospital have higher % of patients from RGJY, Seven Hills in particular has ~70% of their numbers from RGJY scheme
- ❖ Majority of the private and charitable hospitals have not opted for RGJY, as the pay out to the hospitals is low
- ❖ KDAH is the leader in pediatric cardiac surgery cases, doing 150 cases per month, followed by Fortis Mulund, which does around 25-30 cases per month
- ❖ Typical cost for CABG would be 300,000 – 350,000 INR in twin sharing and 500,000 INR in single occupancy room
- ❖ Around 80-85% of the patients undergoing CABG surgeries are from within Mumbai

Total CABG volumes in Mumbai – c. 12,000 p.a.

Player-wise market share of CABG in Mumbai (per annum)



Thane does ~480 CABG's p.a. with Jupiter hospital accounting for ~50% of the surgeries

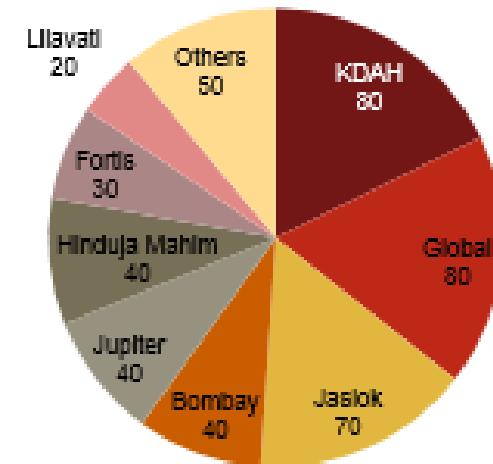
Nephrology and renal transplant market in Mumbai

~450 renal transplants are completed in the Mumbai annually with 19 registered centers among which KDAH, Global and Jaslok hospital lead the way

- ❖ Mumbai has ~50 qualified Nephrologists actively practising within the city
- ❖ ~40 transplants in Mumbai on an average per month
- ❖ Major hospitals for transplants with Leading Consultants:
 - ❖ KDAH: Dr. Niranjan Kulkarni, 12 transplants per month
 - ❖ Global: Dr. Bharat Shah, 8-10 Transplants per month
 - ❖ Jaslok: Dr. Bhupendra Kranti, 8-10 per month
- ❖ Patient flow – 50% local (MMR), remaining 50% from states like Rajasthan, Chhattisgarh, M.P.
 - ❖ Cost of Transplant
 - ❖ Pre transplant check up of Donor – 100,000 INR
 - ❖ Operation cost (Donor and Recipient) – 500,000 to 700,000 INR
 - ❖ Monthly expenditure on Drugs and lab test post transplant – 20000 to 25000 INR, after 5 yrs comes down to 2000 to 5000 INR per month

Total Renal Transplants volumes in Mumbai – c. 450 p.a.

Player-wise market share of Renal Transplants in Mumbai (per annum)



Jupiter is the only hospital undertaking Renal transplants in Thane and does ~40 pa

Radiation Oncology market in Mumbai

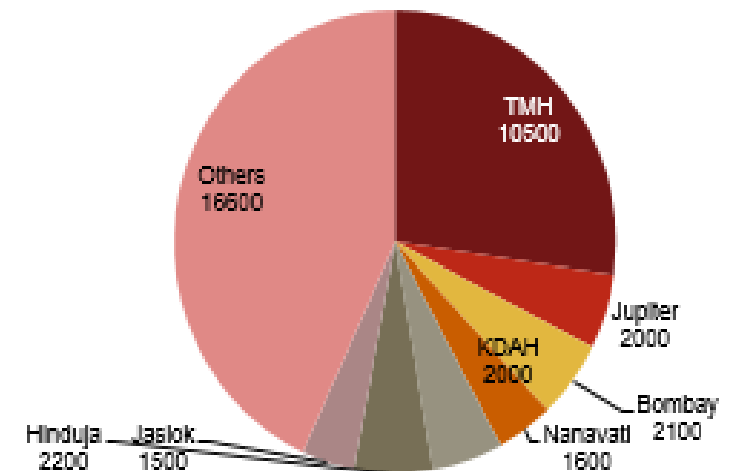
Mumbai with 22 LINACs does ~38,500 fractions per month on an average, TMH does the maximum volumes with 6 LINACs. Jupiter has a strong focus on onco with 2 LINAC's doing 120-140 fractions per day

- ❖ Radiation Oncology in Mumbai is dominated by the two units of TMH with a combined strength of 6 LINAC's covering ~27% of the total market
- ❖ Tata Memorial treats 400 new patients for radiotherapy per month of which 35% are paying patients
- ❖ In private charitable sector; Hinduja (Mahim), KDAH, Bombay Hospital have the best set ups for radiotherapy with two LINAC's each
- ❖ Typically, every radiotherapy cycle has 15 to 20 radiation sessions depending upon the type and stage of cancer
- ❖ Leading Radiation Oncologist:
 - ❖ Dr. Nagaraj – Nanavati, Dr. Dandekar – Reliance HN (recently moved from Hiranandani to HN) and Dr Kaustav Talpatra – KDAH
 - ❖ There are 20 to 22 radiation oncologists practicing in the private sector of Mumbai (Excluding TMH)

Thane has 3 linear accelerators, Jupiter does around 2000 fractions and Bethany does around 1600 fractions per month. Bethany has high number of RGJY patients.

Total radiotherapy fraction volumes in Mumbai – c. 38,500

Player-wise market share of radiotherapy fractions (treatments) in Mumbai (per month)



Prices for PET CT Scan and IMRT therapy in Mumbai

Modality	Price point
PET CT Scan	15,000 to 22,000 INR
IMRT Therapy	~150,000 INR

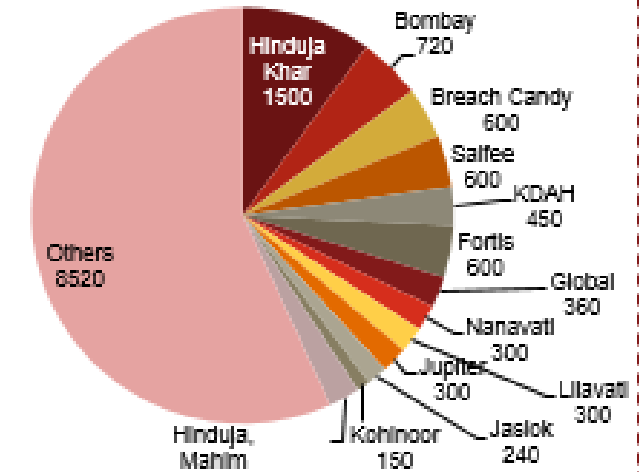
Joint Replacement market in Mumbai

~15,000 Joint Replacement surgeries are carried out in Mumbai every year; private sector does around 85-90% of overall volumes. With 1500 joint surgeries pa, Hinduja Khar is the market leader. Jupiter performs 300 joints annually.

- ❖ Joint replacement market growing at 10-12% in Mumbai, which is lower than cities like Ahmedabad, Pune, etc which are growing at around 20%. It is estimated that Mumbai will perform ~17,000 joints in 2016
- ❖ ~3,500 to 4,000 surgeries are performed in South Mumbai, growing at 17-18%
- ❖ 90% of TKR cases are bilateral, done either in single sitting or multiple depending upon the condition of the patient
- ❖ Of all joint surgeries, 1000 joint procedures are revisions to replace a defective implant
- ❖ Ratio between volumes of TKR and THR is 65: 35
- ❖ Hinduja hospital at Khar is the leader in joints with 1500 cases pa. Considerable workload of Lilavati hospital has drained to Hinduja Khar.
- ❖ Typical cost for a unilateral TKR in Mumbai would be ~250,000 INR plus cost of implant, which would be ~ 70,000 to 100,000 INR. Cost of bilateral TKR would be 1.6 to 1.7 times that of unilateral TKR
- ❖ Doctor component in procedure charge is ~15% of total cost (excluding implant)

Total joint replacement volumes in Mumbai – c. 15,000 p.a.

Player-wise market share of Joints in Mumbai (per annum)



Thane city does ~1500 joints pa with Dr. Milind Patil doing ~1000 joints in three facilities

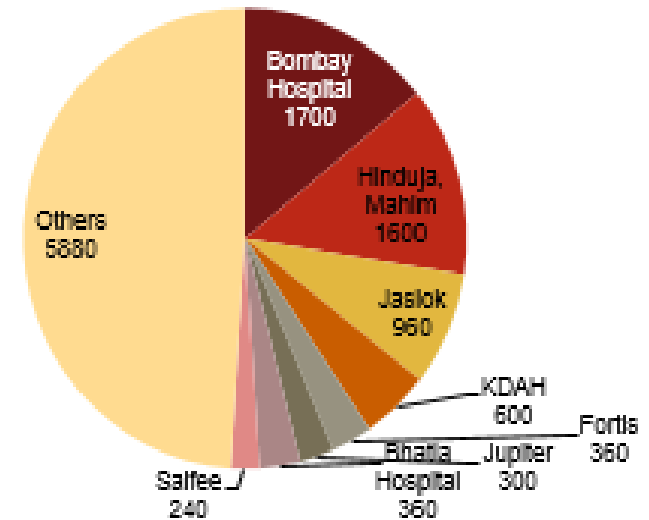
Neuro surgery market in Mumbai

~12,000 to 14,000 neuro surgeries are performed in Mumbai every year. Bombay Hospital and Hinduja hospital are leaders with around 1700-1600 surgeries p.a. each while Jupiter does 300 procedures p.a.

- ❖ Mumbai has around 75 neuro surgeons
- ❖ Majority of the neuro surgical cases are catered to by the private hospitals
- ❖ Neuro surgery market in Mumbai is growing at 5-8% pa
- ❖ At hospitals like Bombay and Hinduja (Mahim), considerable work load comes from outside Mumbai, especially from states like Madhya Pradesh, Rajasthan and Gujarat. Bombay hospital for eg has good patient base from Madhya Pradesh and Chhattisgarh
- ❖ Of all the neuro surgeries, split between brain and spine is estimated to be in a ratio of 80:20
- ❖ Average Length of stay for elective procedure is around a week for trauma and would be more in case of stroke
- ❖ Public hospitals like KEM, Sion, JJ, etc together do around 4000 surgeries. KEM does the highest with 200 surgeries per month
- ❖ Typical package price for a neuro procedure (eg; Craniotomy) would be around 450,000 to 500,000 in single occupancy accommodation (this includes the surgeon fees also). Usually surgeon fee would be 25% of the total bill

Total neuro surgery volumes in Mumbai – c. 12,000 to 14,000 p.a.

Player-wise market share of Neuro surgeries in Mumbai (per annum)



Jupiter has good workload for neuro and trauma related injuries. Jupiter does around 300 cases pa

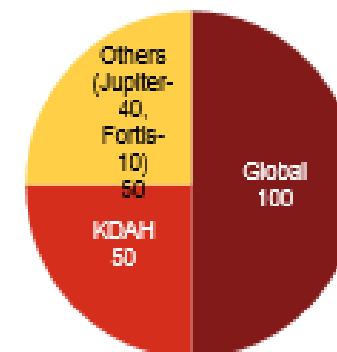
Liver Transplant market in Mumbai

~200 to 240 liver transplants are performed in Mumbai every year, of which Global Hospital does ~50% of the cases

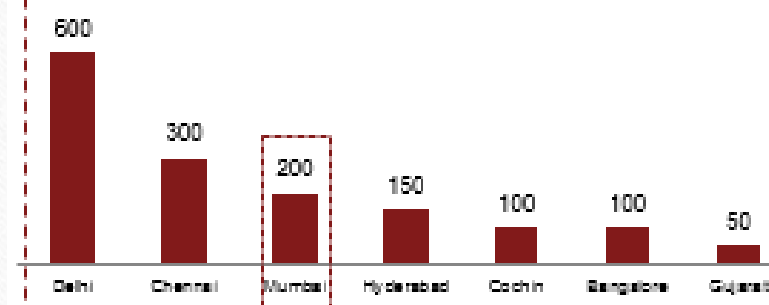
- ❖ At all India level around 1400 liver transplants are performed every year. India requires ~13000 liver transplants, of which only 10% is being serviced currently
- ❖ Delhi has the highest share at around 600-700 liver transplants pa
- ❖ Mumbai at 200-240 transplants pa is third to Delhi and Chennai in terms of volumes
- ❖ As compared to South India, which has high proportion of cadaver donor transplants, Mumbai would have only 15-20% of cadaver donors
- ❖ Typical package prices for liver transplants in Mumbai range from 2 mn. to 2.5 mn INR
- ❖ KDAH charged 1.85 mn INR in first 2 years of introducing the service, however later increased it to 2.5 mn. INR
- ❖ There is a considerable shortage of trained medical, paramedical and nursing staff in Mumbai, which is critical to manage the patient
- ❖ Dr. Soin visits Jupiter hospital monthly, Dr. Rela at Global hospital
- ❖ Dr. Mohanka at Global and Dr. Kumaran at KDAH are full time surgeons

Total liver transplant volumes in Mumbai – c. 200-240 p.a.

Leading players in Mumbai for Liver transplants (per annum)



■ Liver Transplants In India



Consultant Engagement Model

Full time consultants	 
Visiting Consultant	     
Mix Model	   

- ❖ Most of the hospitals in Mumbai operate on visiting consultant model
- ❖ Hinduja hospital (Mahim) operated on a full time model earlier. However, the hospital has had to do away with full time model and allow their doctors to operate at other hospitals
- ❖ Newer entrants like KDAH and HN (Reliance Foundation), have opted to follow the full time salaried model
- ❖ Bombay hospital though operates on a mix model, however they have given admission rights to doctors on full time model
- ❖ Hospitals with visiting consultant model allow doctors to take 90-100% of the OPD charge and the entire IPD doctor fee component to attract key consultants
- ❖ Breach candy hospital, due to its reputation and brand image, has highest doctor fee component as compared to its peers
- ❖ Doctors in South Mumbai are usually empanelled with 4-5 hospitals in South Mumbai and distribute their work load accordingly
- ❖ Hinduja hospital at Khar, allows doctors to negotiate their fees with patients for any class of accommodation

Recommendations

Go to Market Strategy	Consultant Engagement Model	M&A as a business model
✓ The hospital should have aggressive marketing, branding and communication strategies to establish itself. ✓ The hospital could follow a competitive pricing strategy as per market benchmarks in the initial stages. 	✓ The hospital should follow a mixed consultant engagement model, wherein there can be full time primary consultants across key specialities while other prominent doctors can be empanelled as visiting consultants. ✓ The hospital will also have to consider empanelment with independent physicians and consultants with personal clinics for referrals. 	✓ Mumbai typically has a longer incubation period of 4-6 years due to the complicated regulatory compliances prevalent in local governing bodies which inadvertently delays the timelines of a greenfield project. ✓ In such a scenario, acquisition of a newly commissioned facility will drastically reduce the time required for market entry. 

Specialties to Capture Market

- ❖ In Oncology there is a sizeable market opportunity for cancer care in Thane with gap of 2 linear accelerators
- ❖ In transplants there is an untapped opportunity for private sector, Thane has only Jupiter hospital, which does around 40 renal and liver transplants p.a.
- ❖ Thane has around 5-6 Cath labs, around 130-150 PTCA procedures are performed in Thane.
- ❖ Jupiter hospital has the maximum volumes followed by Horizon hospital, Godbole Hospital & Vedant hospital
- ❖ However hospitals in Thane do not perform higher number of cardiac surgical procedures as compared to Mumbai hospitals. There is an untapped market which can be captured by developing cardiac sciences department.

Conclusion

- ❖ Thane has a gap of around 840 quality beds to cater to the healthcare requirements of populace.
- ❖ Thane and in particular Ghodbunder Road have witnessed high growth rate in commercial and residential space. The trend is likely to continue, with high migratory population to the city requiring better access towards health needs.
- ❖ Market study clearly shows feasibility in terms of demand for more beds.
- ❖ The affluent class of Thane has grown at a CAGR of $\sim 13\%$ vis-à-vis that of Mumbai at $\sim 8\%$ over the last 5 years. Per capita income has also increased as compared to Mumbai
- ❖ Looking at the current scenario in Thane, there exists a definite opportunity to exploit demand for medical services of upper middle class families.



Thank You