Summer Training at
HOSMAC India Pvt. Ltd., Mumbai
(April 3 to June 2, 2017)

Market Assessment Study for an Upcoming Hospital in a Township in Kandivali, Mumbai

By
Shradha Shetty

Under the guidance of
Dr. Anoop Khanna

MBA Hospital & Health Management
2016-2018

Institute of Health Management Research
The IIHMR University, Jaipur
2017

INSTITUTE OF HEALTH
MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

CERTIFICATE

This is to certify that Ms. Shradha Shetty has undergone summer training in HOSMAC Consultancy(Mumbai) from 3rd April to 2nd June 2017.

The candidate herself/himself completed the project assign to his/her during summer training.Her approach to the project was sincere and proactive.This summer training is in partial fulfillment of the course requirement recommended for the award of MBA in Hospital and Health Management.

I wish him/her success in all her future endeavors.

Col. (Dr.) Ashok Kaushik

Dean (Academic & Student Affair)

The IIHMR University, Jaipur

Dr. Anoop Khanna

Professor

The IIHMR University, Jaipur

HOSMAC

INTERNSHIP LETTER

No. HRD/HIPL/2017

Date: 31st March, 2017

Ms. Shradha Shetty
C/o. Institute of Health Management Research (IIHMR)
1,Prabhu Dayal Marg,
Near Sanganer Airport,
Jaipur - 302 029.

Dear **Ms. Shradha**,

This has reference to your application for undertaking project work in our organization as a part of your Internship. Subsequent to the interview that you had with us, we are pleased to inform you that you have been selected to undergo the same. The terms and conditions of your training are as stipulated below:

1. You will report for training on or before 3rd April 2017 and your training will be up to 2nd June 2017. This period can be curtailed entirely at the discretion of the company.

2. You will report for training at our Mumbai office. However, you may be based at any of our locations in India during the course of your assignment.

3. As a part of your training, you will be assigned certain projects/assignments, which you would be required to initiate and complete within the above mentioned period.

4. In case you have to undertake inter-city travel as a part of your projects/assignments, you will be informed of the expenses that you can claim as a part of your lodging/boarding and local conveyance.

HOSMAC

5. The management expects you to complete your projects/assignments with high standards of discipline, initiative and efficiency.

6. During the period of your training, your will submit periodical reports with the details of the assignments carried out by you along-with your observations and suggestions. The contents of these reports shall not be divulged in any form and manner to any external agency/body/person, save with the written permission of the Management. These reports shall also not be put to use for any other purpose.

7. During your training with us and thereafter, you shall not divulge to any person, by word of mouth or otherwise any information regarding our process, systems, business plans or administrative /organizational matters, whether confidential or not, that may come to your knowledge.

8. Since the nature of the project what you will be undertaking is competition sensitive, in order to maintain its confidentiality, you shall not make a presentation on the projects and its contents and also not submit a copy of your report to your Institute or any other external body/agency/person without our formal approval.

In case the above terms and conditions are agreeable to you, please sign the second copy of this letter in token of you having received, understood and accepted the above terms and conditions.

Yours faithfully,
For Hosmac India Pvt. Ltd.

Sonam..
Sonam Popat
Human Resources Department.

ACKNOWLEDGEMENTS

I acknowledge with a profound sense of appreciation the efforts of all the supporters who have in some way or the other contributed to the success and completion of this Summer Internship Project.

I convey my heartfelt thanks to Mr. Vivek Desai, Managing Director, HOSMAC India Pvt. Ltd., for giving me the opportunity to intern with HOSMAC during the Summer Internship Programme.

I sincerely express my heartfelt gratitude Mr. Kaustubh Sardesai, Assistant Manager and Mr. Abhishek Pawar, Principal Consultant, HOSMAC India Pvt. Ltd., for mentoring and guiding me and for their continuous motivation and constant facilitation as well as guidance in ideas, knowledge and execution.

My special thanks to my mentor Dr. Anoop Khanna for his valuable supervision and counselling during the entire phase of the relationship right up till the submission of the report.

I would also like to take this opportunity to thank Mr. Hem Bhargava, General Manager, Corporate (Academics), Dy. Registrar (Academics) and Ms. Preeti Chaudhary, Placement Executive for providing me with the platform to work with one of the biggest organisations in India for planning and management.

Last but not the least I acknowledge the wise counsel, the strength and undying support my parents and my sister have provided.

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OBSERVATIONAL LEARNING

Section 1: INTRODUCTION

HOSMAC PROFILE

Founded in 1996, HOSMAC is Asia and the Middle East's first and largest boutique healthcare consulting, design and build firm. HOSMAC has been involved in designing and building over $200 million worth of healthcare infrastructure. HOSMAC's team of over 120 professionals is composed of Doctors, Architects, Engineers, Hospital Administrators, IT Experts, and Chartered Accountants bring a combined over 800 man years of experience. Hosmac provides a gamut of services in the field of healthcare consultancy, right from Project Conceptualization, Feasibility Analysis, Detailed Project Reports, JV Assistance Design, Project and Construction Management, Equipment Planning and Procurement, Commissioning Assistance, NABH Accreditation Assistance, Operations Management and have been advisors for some of India's most high profile healthcare projects by a pool of multi-disciplinary trained team facilitates, better understanding of the customers' requirements & needs.

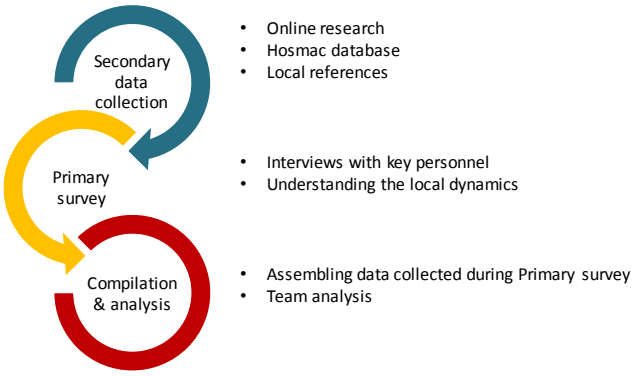
Over its history, HOSMAC has executed 20 million square feet of Hospital Design and 200-man months of Healthcare Consulting. HOSMA has carved a niche for itself in the healthcare industry, ppowered by qualified and experienced consultants has advised many leading hospital groups, governments, private equity firms and multilateral agencies on several issues ranging from making business strategies to improving operational efficiency some of their services include: -

Preparing Detailed Project Reports
Benchmarking Surveys
Business Process Re-engineering
Transaction Advisory
Organizational Assessment Audits
Management Restructuring
Validating Business Plans
Developing SOPs, Policies, Tariffs, etc.
Operational and Retainer Management Consulting
Hospital Management Information System Consulting
Commissioning
Due Diligence Services
Strategy Consulting

Consultancy Services Client List include: -

SECTION 2: MODE OF DATA COLLECTION

The study has been conducted based on primary as well as secondary data collection has been undertaken for purpose of the study.



Primary Survey Methodology:

- A semi-structured questionnaire with open and close ended questions was used for collecting information from Administrators of different specialties. The sample represents data in terms of the following characteristics:
  - ❖ Major localities / hospitals within the area with their service-mix
  - ❖ Broad level tariff and Productivity
  - ❖ Catchment area
  - ❖ Level of care and technology (secondary, tertiary etc.)
  - ❖ Stakeholders perception
- Various healthcare facilities comprising of Multi-Specialty Hospitals and other small healthcare set ups which have a strong presence in and around primary service area like Namaha Healthcare, DNA Hospital, Seven Star Hospital, etc. were visited for conducting the interviews with the Administrators / Consultants.
- Interview & discussion with hospital administrator and/or manager from nursing homes and tertiary care facilities and individual practicing consultants from different clinical specialties were held to collect the relevant data; understand daily operations and impediments faced by them.
- A comprehensive assessment of the healthcare market in Kandivali was undertaken based on the analysis of primary & secondary data by a team of consultants.
- Documented observations and key issues identified during the assessments
  - ❖ **Limitation:**
    - ➢ Content analysis of both primary and secondary data was used to generate perspectives on the healthcare dynamics of the city.
    - ➢ These perspectives were used to forecast the demand need and recommend the facility mix for the proposed facility.
    - ➢ The study is based on the information/data received during the survey and with correlations with secondary data search

PROJECT REPORT

Section 1: INTRODUCTION

Introduction – Overview of Mumbai and its Health Infrastructure

Mumbai is one of the largest cities of India in terms of population and is the financial, commercial and entertainment capital of India. It is also one of the world's top ten centres of commerce in terms of global financial flow, generating 6.16 per cent of India's GDP. Mumbai is one of the most populous cities in the world with a population of over 12 million according to Census 2011. It accounts for about 14 per cent of India's income tax collections and almost 37 per cent of the corporate tax collections in the country. As per the Economic Survey in 2014, per capita income for the city was at Rs 1.67 lakh. Many multinational corporations and Fortune Global 500 companies have their headquarters in the city. In addition, the National Stock Exchange and the Bombay Stock Exchange (BSE) are located there.

Mumbai consists of two distinct regions, namely; Mumbai city district and Mumbai Suburban District, which form two separate revenue districts of Maharashtra. Both these regions are administered by the Municipal Corporation of Greater Mumbai (MCGM).

For administrative purposes, MCGM has divided Mumbai into 24 wards and 6 Zones. Directorate of Census primarily divides Mumbai into 3 sections viz.:

Mumbai City - 9 wards

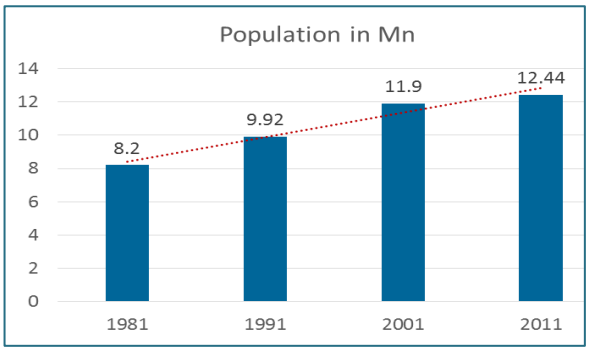
Western Suburbs - 9 wards

Eastern Suburbs - 6 wards

The Western suburbs of Mumbai consist of 3 Zones (zones 3 and 4) and 9 wards (H/E, H/W, K/E, K/W, P/N, P/S, R/C, R/N, R/S)

The city's population, as per the 2011 census, is 12.44 million. Between 2001 and 2011, the population showed a decline of 7% in the island city and grew by only 8% in the suburbs. As per the 2001 census, the population was 11.9 million, in 1991, it was 9.92 million and in 1981, it was 8.2 million. The decadal growth in 1981-91 was 20.41%, in 1991-2001, it was 20.68% and in 2001-11 it was 4.5%

Mumbai Population (census 2011)		
Parameters	**Mumbai**	**Mumbai Suburban**
Actual Population	30,85,411	93,56,962
Decadal Growth Rate (2001-11)	-7.6%	8.3%
Area Sq. Km	157	446
Density/km2	19652	2535
Proportion to State Population	2.7%	8.3%
Average Literacy	89.2%	89.9%



The below table briefs about the demographics of each ward in the western suburbs. Kandivali is located is in R/S ward which is densely populated; wherein the population has grown at the rate of 17% in the last decade, which is thrice the growth rate of the city.

Ward Name	Area sq. km	Population (2011)	Population Density (2011)	Decadal Growth rate (%)	Localities
H/E	18.53	557,239	30072	-4	Santacruz, Parts of CST Road, Ville Parle, Mahim & Dharavi
H/W	11.55	307,581	26630	-9	Bandra, parts of Khar and Santacruz.
K/E	28	823,885	29424	2	Andheri E
K/W	23.28	748,688	32160	7	Andheri W and Oshiwara
P/N	46.67	941,366	20171	18	Malad
P/S	29.56	463,507	15680	6	Goregaon
R/C	50	562,162	11243	10	Borivali
R/N	18	431,368	23965	19	Dahisar
R/S	17.78	691,229	38877	17	Kandivali

Overview Kandivali

Kandivali located in the northern part of the Mumbai suburban district, had originally developed as an industrial hub, with the presence of companies like Mahindra and Mahindra, Tata Steel and Associated Capsules, operating out of this location with proximity to important commercial centers, like BKC (Bandra-Kurla Complex) and Andheri.

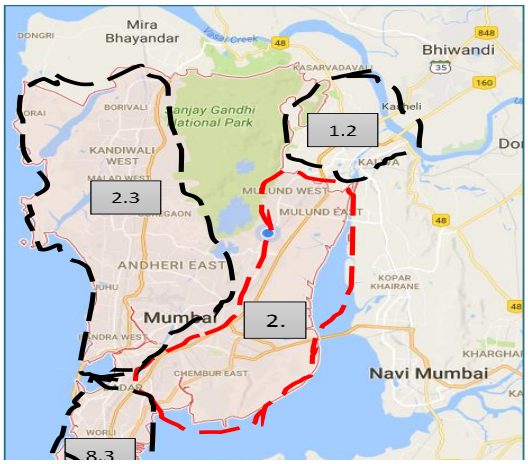
However, in the recent years the area has emerged as flourishing residential hotspots, with quality construction, plush homes and state-of-the-art lifestyle amenities that have been made available by developers. This growth can be attributed to improved infrastructure, mushrooming business centres, availability of open spaces and affordable housing prices and improved connectivity to other parts of the Mumbai has also contributed in increase in population. With the development of schools and colleges, restaurants, theatres and gardens in Kandivali; the area has undergone a complete makeover. Moreover, Kandivali is close to the coastal lines and with the construction of the Western Freeway (completed by 2019) will further improve connectivity to the ports in Mumbai.

Health Infrastructure - Mumbai

The Mumbai private healthcare delivery market is sized at INR 135.3 billion with the top 25 major hospitals together accounting for ~40 % of the market. ~20% of the healthcare delivery market in Mumbai is from outside the city (that includes rest of Maharashtra, parts of southern Gujarat, Rajasthan etc.)

Mumbai's tertiary healthcare market is dominated by trust owned hospitals viz. Hinduja, KDAH, Bombay Hospital, Lilavati etc. However, over the last decade, established players like Fortis, Wockhardt and Global could create a niche for themselves with Apollo joining the league recently by commissioning a 400-bedded hospital in Navi Mumbai. Subsequently, established trust hospitals like Hinduja, KDAH, HN, Jaslok, etc. are upgrading their infrastructure and re-designing operational processes for patient centricity and superior service delivery to meet the aspirational needs of upper and middle income segment.

Mumbai has ~46,000 beds across public and private sector. Private Hospitals, Nursing Homes and Trust Hospitals form the majority composition of the total beds in Mumbai. With 56% of overall bed distribution, South Mumbai region has higher number of hospital beds as compared to Suburbs. With ~25% population of MCGM residing in South Mumbai, it has 8.3 beds per 1000 population which is quite high, whereas the Suburbs with ~75% population has 2.2 beds per 1000 population. Going forward, new hospitals are planned primarily in Suburbs due to availability of suitable land parcel as well as to bridge the demand-supply gap to meet the need of the growing population.



RATIONALE

In the establishment of the hospital, the first step is always a dream or an idea born in mind of an individual. A committee is formed based on the appeal and sound reasoning of the idea after which it is given authority to undertake preliminary work such as feasibility study and/or survey. All successful hospitals, without exception are built on the triad of good planning, superior design and construction and good administration. The absence of any one of those closely related components means building a mediocre hospital or one that is doomed to fail. To be successful, a hospital requires a great deal of preliminary study and planning. It must be designed to meet the needs of the people it is going to serve and be of a size that promotors can afford to build in the first place.

Hence one of the first tasks is to survey the service area of the proposed hospital. The first consideration in the survey is to determine the character, needs and possibilities of the community that the hospital is going to serve, it is based on this knowledge that a decision taken as to whether a hospital should be built or not, and if so type and size. It is important to understand the characteristics of the population to understand the amount and the kind of hospital care that is to be setup. These characteristics include levels of income, age distribution, occupation, etc. A study of the attitude of community, existing hospital facilities to understand both short and long term needs and objective, required staff and services and finally financial planning are the important aspects of preliminary work.

- **OVERALL SCENERIO IN INDIA**

Currently the scenario in India with a population of 1.25 billion, the second most populous country in the world, is one of the fastest growing economic in world at the rate of 8.5%. Healthcare Industry in India is one of the fastest growing industries in India due to the rising income of the population, improved and easier access to the healthcare facilities and greater awareness of personal health and hygiene

The healthcare industry in the country is witnessing a paradigm shift in the last five years driven by greater investment. All sectors in India are undergoing a change from unorganized to an organized capacity and healthcare is experiencing the same. The Indian healthcare sector is expected to reach $ 160 billion by 2017 and $ 280 billion in 2020.

India's demographics are conducive for increasing healthcare spending. Increasing incidence of Life style –related diseases is expected to boost the demand for tertiary care services in India

Healthcare (2015)
Market Size **100 USD**

Hospital Bed Ratio per 1000 population (2014) = **0.9**

Physicians per 1000 population (2014) = **0.7**

(2014)
No. of Hospitals: **184488**
Sub Centers: **152326**
AYUSH Hospitals: **3601**

Eye Banks (2013) **249**

Blood Bank (February 2015) **2760**

Government Medical College (2015): **189**
Total Admission Capacity (2015): **54348**
Post Graduate Students / year (2015) **25346**
Private Medical College (2015) **215**
Medical College for MBBS (2015) : **404**

Research Question/s:

- What is the healthcare market overview and the need gap in Kandivali, Mumbai for setting up a hospital?
- Whether a hospital is to be built?
- If so, what kind, type and size of hospital needs to be built in the area?

Objectives: -

- To study the demand-supply gap in the catchment area.
- Understand the level of healthcare dynamics in and around the primary catchment area.
- Determine existing service providers along with their service-mix and other details.
- Dip stick analysis of the existing healthcare facilities in the proposed area and around, consultants' views, stakeholders' perspective with regards to lacunae's and deficiencies in the current healthcare market.
- Determine the level of care required at the proposed setup
- Identification of critical success and risks associated with this initiative

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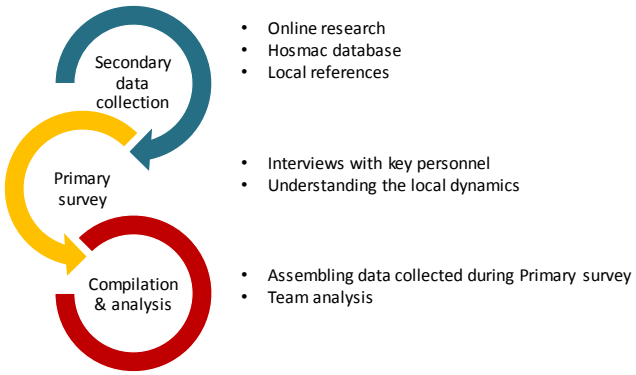

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II) Broad level tariff and Productivity
III) Catchment area
IV) Level of care and technology (secondary, tertiary etc.)
V) Stakeholders perception

- Various healthcare facilities comprising of Multi-Specialty Hospitals and other small healthcare set ups which have a strong presence in and around primary service area like Namaha Healthcare, DNA Hospital, Seven Star Hospital, etc. were visited for conducting the interviews with the Administrators / Consultants.
- Interview & discussion with hospital administrator and/or manager from nursing homes and tertiary care facilities and individual practicing consultants from different clinical specialties were held to collect the relevant data; understand daily operations and impediments faced by them.
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❖ **Limitation:**

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SECTION 3: DATA COMPILATION AND FINDINGS

SURVEY FINDINGS

- **Overview of Healthcare Market in Kandivali**

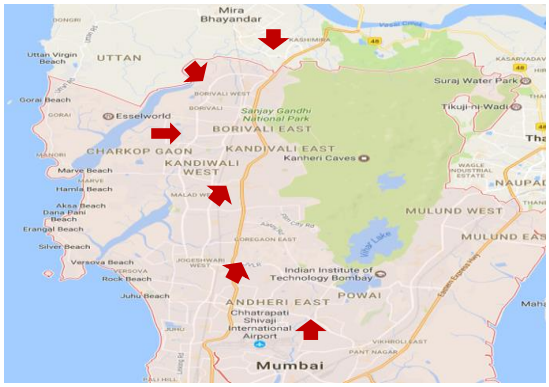
PARTICULARS	
PSA - R/S Ward	
Population (2011)	6,91,229
Beds required Considering 3.5 beds/1000 population	2,419
Beds available#	1,320
Bed deficit	1,099
Population (2017-E)	7,61,734
Beds required Considering 3.5 beds/1000 population	2,666
Bed deficit	1,346
SSA- K/E, P/N, P/S, R/C, R/N	
Considering 50% of the population in SSA (2017-E)	16,91,379
Bed required	5,920
Bed deficit	4,600

The table suggests the hospital bed requirement in the Primary Service Area considering a median of 3.5 beds per 1000 population

In 2011, the R/South ward had about 1320 hospital beds in the private sector. Considering this and the bed requirement, there is a shortfall of about 1340 beds. This shortage is expected to increase considering the growing population

This bed requirement will be higher assuming 50% of the population in the secondary service area will avail healthcare in Kandivali

- **Catchment Area and Patient Referral Pattern**



The primary service area for the proposed hospital is within Kandivali East including Thakur Complex, Thakur Village, Lokhandwala Township, Samata Nagar and Damu Nagar etc Areas between Andheri east to Dahisar is the secondary service area for the proposed hospital. These will also include the east and west regions of Jogeshwari, Goregaon, Malad, Kandivali, Borivali and Dahisar. The picture represents the patient inward pattern.

Due to the poor service delivery and lack of tertiary healthcare services within Kandivali, patients from middle and high income group prefer to travel to hospitals located in various parts of Mumbai. Currently, patients prefer to go to south Mumbai hospitals for availing the medical services. KDAH, Lilavati, Hinduja, Hiranandani, Bombay hospital etc. are the preferred choice of the existing population. Therefore, the proposed hospital needs to focus on providing superior quality tertiary care services to attract patients in and around Kandivali

Captive catchment base + Populous surrounding areas with a high per capita income + Underserved market in the multispecialty tertiary healthcare sector + Good connectivity by all modes and upcoming infrastructure improvement = Large and sustainable potential patient base for the hospital

Patient Outward Pattern which shows which hospitals people go to out of Kandivali and the specialties

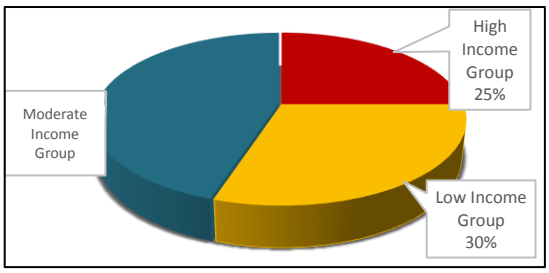
Clinical specialties which are driving local patients to hospitals in other suburbs are as follows:

- Oncology
- Joint replacements
- Cardiac sciences
- Neuro Sciences
- Cosmetic Surgeries
- Gastroenterology
- IVF Care
- Critical Care

Key Referred Hospitals	Distance from Proposed Locations (in Kms)
Dr. L.H. Hiranandani	16
KDAH	13
Hinduja	22
Lilavati	21
Bombay	35

- **Socio-economic status**

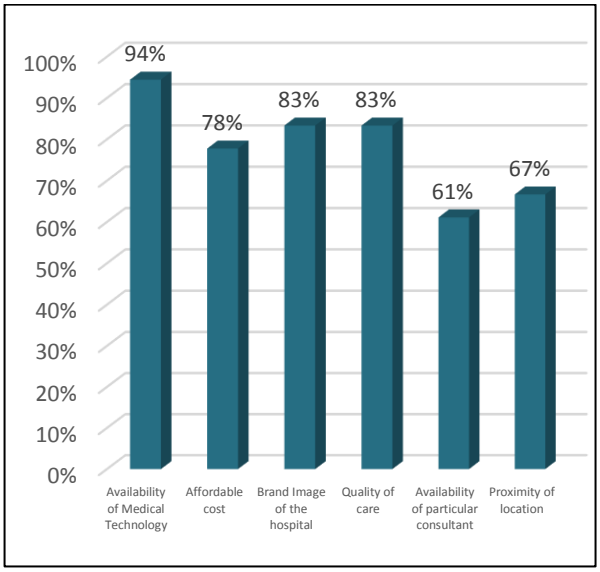
The socio-economic condition of the service area is important to assess the market and identify the target consumer group; understand their paying capacity and design the bed-mix and tariff structure for the proposed hospital accordingly. 30% of the patients visiting hospitals belong to lower income group i.e. earning a monthly income of Rs. 12,000 to Rs. 18,000.



The moderate-income group constitutes to around 45% of the total patient population in city hospitals. While high income group constitutes around 25% of the total patient population availing medical services at doctors and hospitals in and around Kandivali.

- **Factors Influencing Selection Criterion**

Based on the interviews conducted with the consultants, the questionnaire included criterias that influence the patients to seek treatment in a hospital “Availability of Medical technology” is the most crucial factor for patients while considering hospitalization whereas “Quality Care” and “Brand Image” of the hospital were the 2nd most crucial factor to influence selection criterion while availing hospital services. Following which “Affordable cost of treatment is a crucial factor perceived by the doctors. Then “Proximity of the hospital” was the 4th most important criterion in selecting a hospital. Availability of consultants is one of the influencing criterion for selection of hospital.



- **Key competitors profile**

All hospitals have various accommodation facilities. The table below indicates the accommodation tariffs of key players in Kandivali and surrounding areas. Below is a snapshot of the key Players in Primary Service Area.

Name of Hospital	Location	Operational Beds	ICU Beds	Occupancy	Specialty focus	Revenue (Cr.)
D	Kandivali (E)	27	7	60-70%	Multi Super Specialty	3.2
N	Kandivali (W)	65	18	50%	Super-specialty (women and child health)	N/A
C	Andheri(E)	96	22	60%	Multi-specialty Hospital	36
K	Andheri (W)	750	180	80%	Multi-Super Specialty	550
P	Mahim	402	53	80%	Super Specialty	450
H	Powai	240	40	75%	Multi Super Specialty	200

Particulars (in INR)	D Hospital	N Hospital	C Hospital	K Hospital	P Hospital	H Hospital
General Ward	900	1500	900	1400	1,000	2,000
Twin Sharing	1800	2400	1500-1800	3,000	4,000	2,500
Private	2800	NA	4000-4500	3,900	6,500	6,000
Deluxe Room	3500	3000	NA	7000 - 9000	6,500	10,000
Suite	NA	7500	8000	22,000	12,000	30,000
Dialysis	1,500	DNA	1500	1,800	1,950	1,800
ICU	2500	5000	4500	4,500	5,000	5,000
NICU	SNA	4000	SNA	4,000	DNA	DNA

Hospitals derive their bed charges on competitor based pricing. Few hospitals like KDAH, Hinduja, Hiranandani have cost-based tariff structure for selective services such as surgery packages, etc

- **D hospital:**

- DNA Hospital was launched as a Multi-specialty hospital built to provide high end services so as to target and cater to the high-income group (HIG) living in the region.
- However, the hospital was unable to attract patients from the HIG. Typically, patients come to the hospital to seek primary or emergency care before getting transferred to tertiary care hospital in the city.

- The patients that come to seek their services are from Kandivali east mostly from areas like Lokhandwala, Kurar village, Damunagar, Hanuman Nagar, Thakur village/complex.

- Operational Parameters (per month)

OPD numbers	IPD admissions	Total surgeries	Joint replacements	Cardiac volumes	Oncology Volumes (Surgery)
1400	110	80-90	2 - 4	SNA	10 - 12
Rates per patient (INR)					
500-800			1,75,000	NA	60,000

❖ **N hospital:**

- The hospital is first of its kind in the area building a luxury super-specialty hospital with a focus on health of women.
- The hospital functions at an average occupancy of 50% and has an ALOS of 4 days
- Hospital was launched initially as a Mother and child care hospital. However, the promoters broaden its services to cater to other clinical specialties and other patient categories. This was mainly done to improve the overall patient footfalls
- The patients primarily come from Kandivali, it also caters to the population from Borivali and Malad. However, primarily the population living on the western side of the suburbs avail services at Namaha hospital

- Operational Parameters (per month)

OPD numbers	IPD admissions	Total surgeries	Joint replacements	Cardiac volumes	Oncology Volumes	Transplant volumes
~1000	120	120	4 - 5	SNA	SNA	SNA
Rates per patient (INR)						
600-1,000	(Refer slide 31)		1,85,000-2,00,000	NA	NA	NA

❖ **C Hospital**

- Critic are hospital in Andheri east was commissioned in 2014. The group also operates another hospital in Andheri West

- The hospital operates as a multispecialty tertiary care hospital and boasts of having a strong consultant base

- The hospital attracts patients from all income groups mainly from the western suburbs

- Operational parameters (per month)

OPD numbers	IPD admissions	Total surgeries	Joint replacements	Cardiac volumes	Oncology Volumes	Transplant volumes (Heart, Kidney, Liver)
4500	350	320	25 - 30	SNA	SNA	SNA
Rates per patient (INR)						
800-1500	(Refer slide 31)		1,80,000	NA	NA	NA

❖ K Hospital

- KDAH was commissioned in 2009 as a multi-specialty tertiary care hospital spread over 10 lakhs sq. ft. area with 17 floors and 2 basements
- It is a 700-bed hospital, with 604 operational beds and runs on an average occupancy of 80%
- Physical medicine and rehabilitation is one of the major focus area of the hospital. It has established itself as one of the largest referral centers for high end rehab services in Neurology, Pediatric and Sports Medicine in Western India
- Operational parameters (per month)

OPD numbers	IPD admissions	Total surgeries	Joint replacements	Cardiac volumes	Oncology Volumes	Transplant volumes (Heart, Kidney, Liver)
~15000-18000	~3500	~1500	30-35	Angioplasty: 80 CABG: 15	Once Surgeries: 125	12 Liver Transplant
Rates per patient (INR)						
1000	(Refer slide 31)		TKR: 200,000	Angioplasty: 150,000 CABG: 325,000	DNA	Liver: ~24,00,000

❖ H Hospital

- Hinduja hospital was commissioned in 1986 as a multi-specialty tertiary care hospital.
- The hospital has centers of excellence in Neurology and Oncology and is known for providing high end quality care
- The hospital is planning to add 100 new beds in a new upcoming building
- Operational Parameters (per month)

OPD numbers	IPD admissions	Total surgeries	Joint replacements	Cardiac volumes	Oncology Volumes	Transplant volumes (Heart, Kidney, Liver)
~15000-18000	~3500	~1500	30-35	Angioplasty: 50 CABG: 60	Once surgeries: 100	DNA
Rates per patient (INR)						
1000	(Refer slide 31)		TKR: 285,000	Angioplasty: 215,000 CABG: 360,000	DNA	DNA

❖ Dr. L.H. Hiranandani Hospital

- A multi-specialty hospital commissioned in 2004, with thrust on cardiac, gynaecology, orthopaedic and transplants. The hospital started as a 130-bed facility and expanded to 240 beds.
- It is one of the best hospital in central suburbs with good infrastructure and high end technology

- It was the first hospital in Western India to receive NABH Accreditation

OPD numbers	IPD admissions	Total surgeries	Joint replacements	Cardiac volumes	Oncology Volumes	Transplant volumes (Heart, Kidney, Liver)
~15000-18000	~3500	~1500	30	Angioplasty: 80 CABG: 15	Once Surgeries: 14	6 Kidney Transplant
Rates per patient (INR)						
1000	(Refer slide 31)		TKR: 175,000	Angioplasty: 120,000 CABG: 300,000 – 400,000	DNA	Kidney: 500,000

- **Doctor Engagement Model in Mumbai:**

Most of the hospitals in Mumbai operate on visiting and fulltime consultant model. Newer entrants like K Hospital and H hospital have opted to follow the full time salaried model for doctors. Some hospitals have appointed full time consultants for specialty programs like Radiation Oncology, Liver Transplant Program, etc.

To attract key consultants, hospitals with visiting consultant model allow doctors to take 80% – 90% of the total OPD and IPD fee charged by the hospital.

Doctor fee component is variable and the same is discussed and negotiated with the patient in hospitals with the visiting consultant model. However, the new hospitals prefer implementing a uniform tariff structure across all the patients for standardization. Doctors in South Mumbai are usually empanelled with 4 - 5 hospitals and distribute their work as per the convenience of patient and doctors.

Engagement Model	
Full time consultants	• KDAH • Asian Heart Institute • HN
Visiting Consultants	• Hinduja healthcare • Breach Candy • Jaslok • Saifee • Jupiter • Lilavati
Mix Model	• Bombay hospital • Global • P.D. Hinduja • Fortis • Namaha Healthcare • DNA hospital

- **Engagement Models with doctors:**

Most of the progressive hospitals have MOUs with individual doctors which mentions details with regards to non‐practicing zones, service exclusivity and revenue sharing with individual doctors. With regards to paying honorarium to doctors, some common practices that are followed in the industry is as follows:

The professional fees billed to the patient on behalf of the fulltime consultant doctors, for the OPD consultation is shared in certain proportion as 70 -75 % to doctor & 25 - 30 % to hospital as affiliation fee

to provide the hospital infrastructure to the doctor. This is a customary practice wherein hospitals share revenue with the doctors based on their experience and credentials.

Some hospitals like Breach Candy and Bombay Hospital do not have the sharing pattern and give 100% professional fee to the doctors after deducting tax. In such method, the charges of the other services like OT charge, anaesthesia gas charges, consumable etc. are fixed in a way to cover the forgoing of sharing.

It is preferable to have different revenue sharing for part time and full time consultants as per their credentials, work experience, etc. The full-time consultants have an advantage of fixed remuneration, having their own OPD offices and have fixed days allotted to treat Emergency patients and admit them under their care and supervision.

Hospitals like HN and KDA hospital have exclusivity clause wherein practicing consultants are inhibited to practise in other hospitals irrespective of the geographic service area to avoid conflict of interests. Although most of the hospitals follow this policy, the same may be waived off for eminent doctors.

- **Type of Hospital:**

❖ **Charitable Trust Hospital:**

Most of the established hospitals in South Mumbai are charitable hospitals and fall under the purview of charity commissioner. For example: Jaslok hospital, Breach Candy hospital, Hinduja, hospital etc are few charitable trust hospitals established in Mumbai.

Charitable hospitals are governed by Charity Commissioner and have a mandate to provide free and subsidized beds to poor patients under the Bombay Public Trust Act Scheme. The Charitable Trust Hospital have a legal obligation to reserve and earmark 10% of the total number of operational beds for indigent patients and provide medical treatment to the indigent patients free of cost and reserve and earmark 10% of the total number of operational beds at concessional rate to the weaker section patients as per the provisions of section 41AA of the BPT Act.

The Charitable Hospitals also must physically transfer 2% of the total patients' billing (excluding the bill of indigent and weaker section patients) in each month to IPF Account.

❖ **Private Corporate Hospital:**

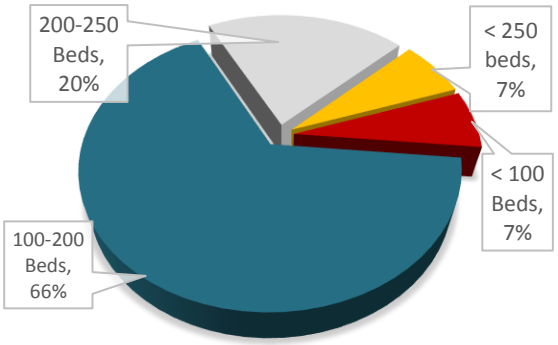
There are Private corporate hospitals such as Asian Heart Institute, Wockhardt hospital, Fortis hospital, etc. These hospitals are managed on proprietor-ship model and have no obligation towards reserving hospitals beds for weaker or indigent section.

The operation of private hospitals is governed by the Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations 2002 and certain legislations which are common to private and charitable hospitals such as

- Registration/Requirement of Hospital license,
- Regulations Related to Employment of Staff - Labor Laws,
- Information to be displayed at the Hospital / Sign Boards,
- Regulations Related to Treatment of Patients
- Submission of Reports to Health Authorities

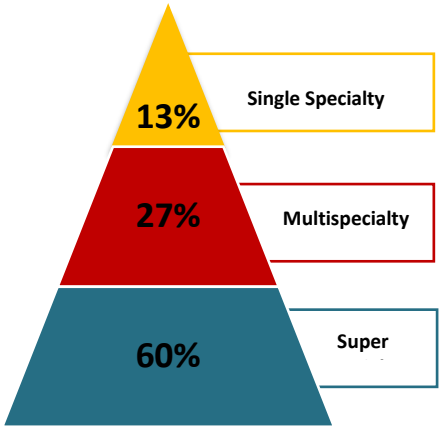
- Drug and Cosmetics Act 1940, Drugs (Control) Act 1950, Narcotic Drugs and Psychotropic Substances Act 1985, Drugs and Magic remedies (Objectionable Advertisements) Act, 1954, Pharmacy Act, 1948.
- Safe disposal of infectious/hazardous waste generated at the clinic (BMW Management Rules, Environment Protection Act 1986, IPC Section 269, 270).
- Prohibition of unethical activities, such as soliciting patients directly or indirectly
- Prohibition of Smoking in Public Places Rules, 2008, Fire Safety Regulations, Financial Regulations
- State laws for prevention of vandalism/violence against medical service staff and institutions.

- **Recommended Size of the Facility**
  - Majority of consultants interviewed, opined that a hospital with 100 – 200 beds is recommended in the primary service area



- **Type of the Facility**

- 60 % of stakeholders interviewed suggested that the proposed area needs a state of the art tertiary care super specialty hospital.
- Considering the above, it is recommended to set up a multi-super specialty hospital with a focus on tertiary care services in the catchment area.



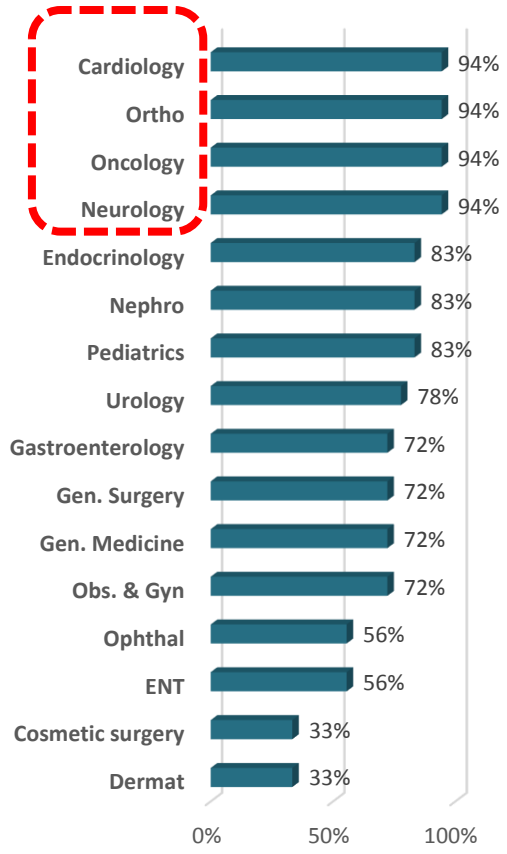
- **Recommended Specialty-mix**

  - Existing hospitals in the service area cater to general specialties like Medicine, Surgery, Gyn. & Obs, etc. Few hospitals like Lifeline hospital offer tertiary care services in clinical specialties like Cardiology, etc

  - Most of the super specialty services like Critical care, interventional cardiology, CVTS, oncology, neurology, etc are not available in primary service area because of which patients travel to established tertiary care hospitals outside Kandivali esp. to South Mumbai.

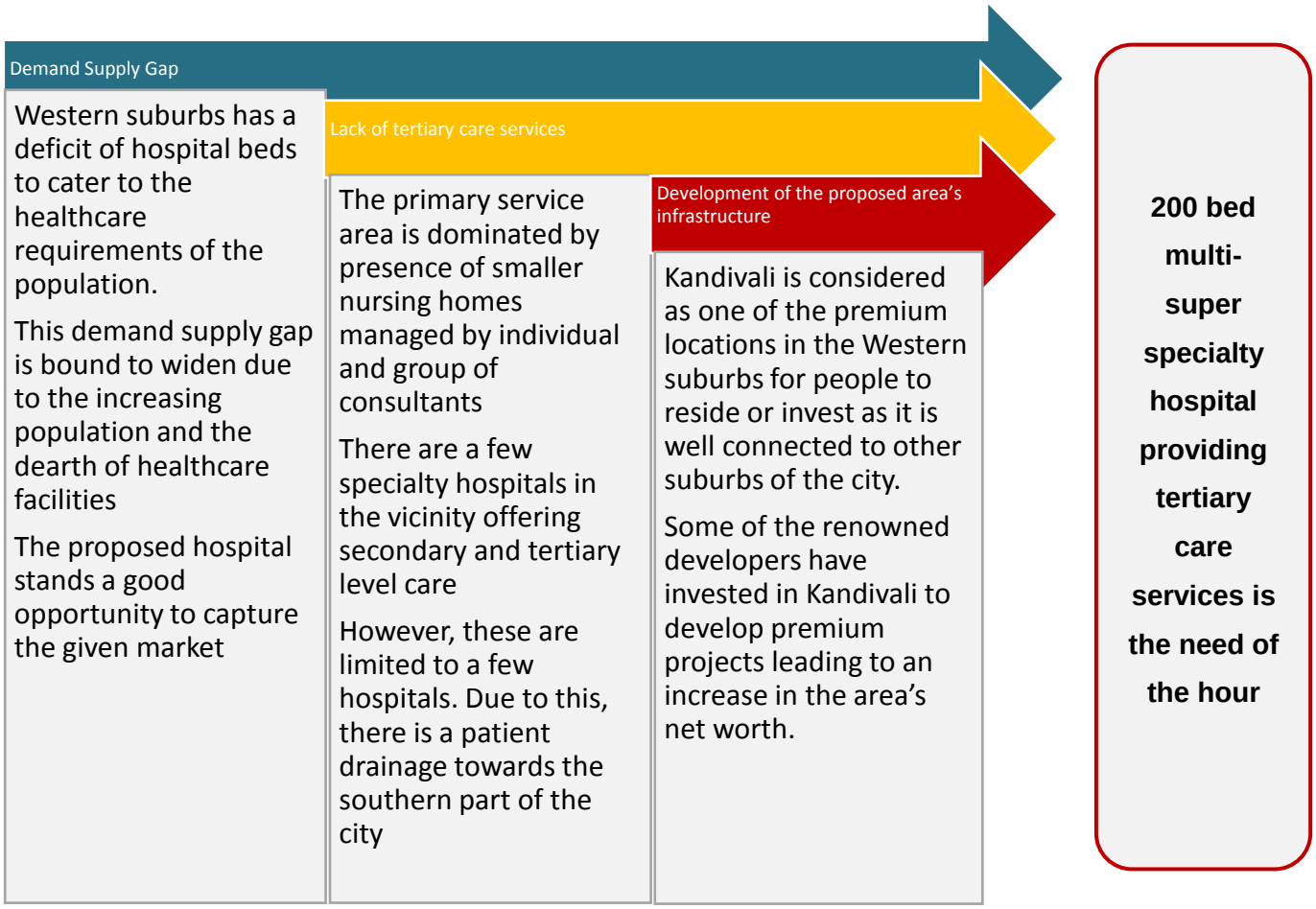
  - Clinical super specialties that needs to be developed are as follows,

  - Cardiology
  - Orthopedic
  - Oncology
  - Neurology



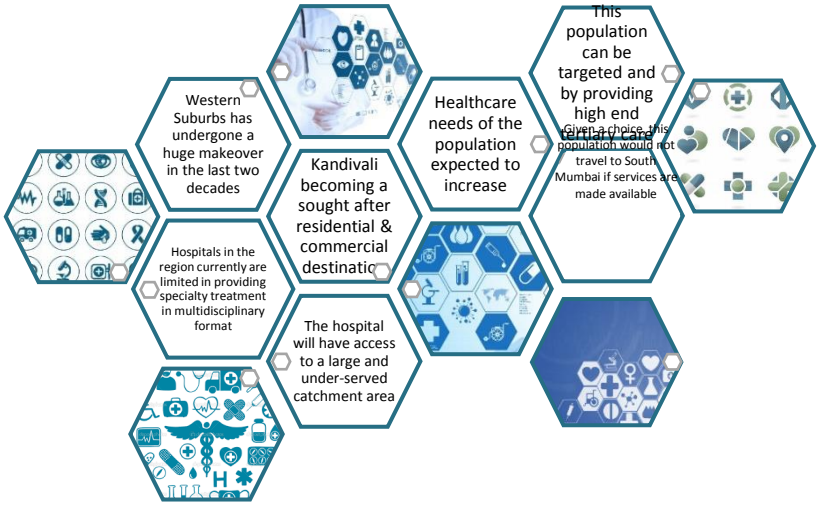
SECTION 4: RECOMMENDATIONS

- **Recommended Facility**



- There is an estimated bed deficit of ~1300 beds in the Primary Service Area I.e. R-South ward alone. Considering the dearth of established hospitals in surrounding wards, the bed deficit is estimated to be approx. 4600 beds. As a result, most of the patients in primary service area visit hospitals in South Mumbai due to their brand image and positive perception.
- There are existing players in the service area such as Lifeline hospital, Namaha hospital which are ~80 – 100 beds in size.
- 200 bed hospital would help in positioning the proposed facility as a major player. Cconsidering the fact that proposed hospital would offer super specialties such as oncology, cardiology, orthopedics and Neurology, it is recommended to set up 200 beds.

- **Healthcare Key Insights**



- **Proposed Hospital**

- At present the existing players cater to general specialties such as Medicine, Surgery, Gynecology, Obstetric, Pediatrics, etc. Super Specialties such Neurology, Neurosurgery, Oncology, Cardiology, Orthopedics, etc. are not provided by these players as a result patient prefer visiting established hospitals such as KDAH, Hiranandani hospital, etc. or travel to established hospitals in South Mumbai for availing these medical services.
- Proposed 200 bed hospital will have the following bed-mix and clinical services. It is recommended that the proposed hospital has super specialties as thrust areas besides offering general specialties. Clinical Support areas proposed are dialysis, physiotherapy, etc. with an objective of providing comprehensive treatment modalities to patients in northern suburbs of the city.
- 200 bed tertiary care hospitals are proposed to cater to thrust areas like Orthopedic, Neurology, Neurosurgery, Oncology, Cardiology, etc. which are deficient and not catered adequately in the existing market
- Besides above super specialties other general specialties such as Gen. Medicine, Gen. Surgery, Pediatrics, Gynecology & Obstetrics, etc. are proposed to offer comprehensive gamut of clinical services.
- Total 150 beds are earmarked as Revenue beds in addition to 48 beds which are reserved for Service Beds.
- Out of the 150 service beds, nearly 25% beds (i.e. 38 Beds) are reserved for Critical Care Beds i.e. ICCU, MICU, SICU, NICU.
- 75% of the service beds are reserved for wards. Out of which 19% are reserved for single rooms, 29% for Twin Sharing beds and 27% for Economy beds

- Oncology
- Orthopedics
- Neurology/Neurosurgery
- Cardiology & CVTS
- Gastroenterology

Thrust Areas

- General Medicine
- General Surgery
- Gynecology & Obstetrics
- Nephrology
- Urology
- Cosmetic Surgery

Other Specialties

Dialysis
Physiotherapy
Pharmacy
Ambulance

Other Services

- Laundry
- Biomedical Waste Management
- Housekeeping
- Security

Outsourced Services

- ICCU – 10 Beds
- MICU – 12 beds
- SICU – 12 beds
- NICU – 4 Beds
- **Total: 38 beds**
- % of total beds: 25%

Critical Care

- Suite Room – 4 beds
- Deluxe Room – 24 beds
- Twin Sharing – 44 beds
- Economy – 40 beds
- **Total: 112 beds**
- % of total beds: 75%

Inpatient Unit

- Ambulatory care – 8 beds
- Pre-op – 6 beds
- Post-op – 6 beds
- Chemotherapy – 10 beds
- Dialysis – 10 beds
- Emergency beds – 8 beds
- **Total – 48 beds**

Service Beds

- Cardiac OT – 1
- Ortho/Neuro OT – 1
- General OT – 3
- C - Section OT - 1
- Labour room- 1

OT Complex

- Cath Lab -1
- ECG
- TMT
- 2 D Echo – 1
- Holter

Cardiology

- Linac (1 Bunker)
- Endoscopy Suite
- EEG & EMG
- Audiometry
- PFT
- Uro-dynamic Lab

Other services

- PET enabled CT Scan
- MRI
- X ray
- USG
- Mammography
- Pathology Laboratory

Radiology & Lab

- OPD rooms – 18
- Procedure room - 2

Outpatient

- THRUST AREAS OF THE HOSPITAL

Cardiology

Cardiac ailments are a leading cause of morbidity and mortality in the city

Incidences of cardiac ailments is expected to increase due to lifestyle changes and stressful environments

Ultimately causing cardiac workload in the existing hospitals

Orthopaedics

While hospitals in the vicinity provide orthopedic care, there is an need to augment infrastructure and service delivery.

In spite of the deficiencies in ancillary services, there has been a rise in the Joint replacement programs

The proposed hospital needs to render end-to-end services and capitalize on this gap in services

Sports medicine is also an un-explored area that can be developed

Oncology

There has been an increase in the population suffering from cancer

The patient load on the existing hospitals is expected to increase in the next few years

With the limited facilities in the primary and surrounding areas, the patients travel to other hospitals in South Mumbai to avail services. The proposed hospital can aim to capitalize on this gap

Neurology

With increasing number of people suffering from stroke, the demand for neuro services is estimated to increase

The hospital needs to create a robust neuro-sciences program and attract patients from Primary as well as surrounding catchment area

The critical success factor would be to engage prominent consultants preferably on full time basis

- **KEY SUCCESS FACTORS**

KEY SUCCESS FACTORS				
Consultant Profile Acquisition and retention of Skilled Manpower Empanelment of prominent consultants by offering excellent remuneration and other fringe benefits. Having specialized qualified doctors and staff will give competitive advantage to the hospital.	**State-of-the-Art Technology and Infrastructure** Medical technology adopted in the hospital needs to provide competitive edge, to help healthcare service delivery in the neighboring areas The infrastructure and the interiors of the hospital needs to be planned considering the target consumer i.e. high and middle income group of patients.	**Right Positioning** The proposed hospital will to be positioned as a centre for quality tertiary care in Kandivali and surrounding areas The cost of the services should be competitive and keeping in consideration the prices of the competitors in the region	**Focused Marketing Communication Strategy** Marketing should be focused on the middle and the high income group who prefer to go to private and corporate set ups for their health care needs. Focus should also be to attract the patient that travel to south Mumbai to seek healthcare	**Accreditation** The proposed hospital needs to be accredited with NABH and JCI. Quality accreditation also ensures safety and security of the patients, staff, and other stakeholders involved in healthcare delivery.

REFERENECES

- Observational Learning:

  - HOSMAC website
  - HOSMAC brochure

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  - Mumbai Suburban". National Informatics Centre (Maharashtra State Centre). Archived from the original (PDF) on 13 May 2012], Ministry of Urban Development (Government of India)
  - MCGM- Municipal Cooperation of Greater Mumbai, India data
  - Economic Survey of Maharashtra
  - G D Kundes – Facilities Planning and Management
  - Press articles: - Times of India, The Hindustan times.
  - HOSMAC database

ANNEXURE

Abbreviations/ Acronyms

ALOS – Average Length of Stay

CABG - Coronary artery bypass graft (Bypass Surgery)

CAGR-Compounded Annual Growth Rate

CAPEX - capital expenditure

DNA-Data Not Available

ECG-Electro Cardiogram

EEG-electroencephalogram

EMG-Electromyography

GDP – Gross Domestic Product

ICU- Intensive Care Unit

INR - Indian Rupee

IPD - In Patient Department

IVF- In Vitro Fertilization

JCI – Joint Commission International

KDAH- Kokilaben Dhirubhai Ambani Hospital

MCGM- Municipal cooperation of Greater Mumbai

MICU-Medicine Intensive Care Unit

MoU - memorandum of understanding

MRI - Magnetic Resonance Imaging

NA – Not Applicable

NABH - National Accreditation Board of Hospital and Healthcare Providers

NICU- Neonatal Intensive Care Unit

OPD - Out Patient Department

OPEX- operational expenditure

OT - Operation Theatre

PICU - Paediatric Intensive Care Unit

PSA – Primary Service Area

R/S ward- Kandivali

SICU- Surgery Intensive Care Unit

SNA- Speciality Not Available

TKR - Total Knee Replacement

TMT - Treadmill Test

USG – Ultrasound Sonography

B) Administrators' Questionnaire

- **General Details**

Hospital's Name	
Address	
Tel & Mail Id	
Average Occupancy	
Comment on periodic occupancy variation	
Number of TPA's empanelled	Get the list
Number of empanelled companies	

- **Departmental Details:**

Category		Units	Number of Beds	Tariff	Occupancy
Single room	1 in 1				
Double room	2 in 1				
Economy	4 in 1				
General	6 or more in 1				
Critical care beds	ICU				
	CCU				
	NICU				
	PICU				
	HDU/Step down ICU				
	Isolation room				

	Deluxe				
	Suites				
	VIP Suite				
	LDRP				
	Nursery				
	Daycare				
Sub-T					

Category		**Units**	**Tariff**
Service	Number of OPD rooms		
	Number of OT's and its bifurcation		
	Labour & Delivery Room		
	Endoscopy		
	Pre - operative beds		
	Post-Operative Beds		
	Recovery Beds		
	Cath Lab / Imaging Beds		
	Emergency care services		
	Artificial Kidney Dialysis		
TOTAL			

Do you have diagnostic set-up?

X-ray	
CT-Scan	
MRI	
Cath Lab	
Lina	
Others	

Percentage of Revenue generated from Diagnostics (both Radiology and Pathology)

Number of ambulances with the hospital?

Type of ambulance	Numbers	Tariff
Cardiac		
Regular		
Cars		

Thrust area for the hospital

Specialty	

- **Productivity Details:**

Particulars	No's	Avg. Tariff Range		Remarks
		From	To	
Total registrations				
OPD patients / month				

(New)				
OPD patients / month (Follow up)				
Average Admissions / month				
ICU Admissions				
Major Operations				

No of Procedures per day or per month					
Particulars	**No's**	**Avg. Tariff Range**		**Level of Technology**	**Remarks**
		From	**To**		
No of Lab Investigations					
X - Rays					
USG					
TMT					
2D ECHO / 4 D ECHO					
CT Scan					
MRI					
Mammography					
Dialysis / Machines					
Angioplasty					
Angioplasty					
CABG					
Endoscopies					
Deliveries					
OPD Consultation					
Special OPD Consultation					

Any Specialized Diagnostic test					
Blood Bag Collection / month Blood Bag Issued Blood bag Stock Products issued No of donor's bleed / year					
OT charges					
Any other					

« **Drainage Areas** (list the areas on % basis)

Within Taluka/City/District	Outside Taluka/City/District

Note: Inquire about % of International Patients visiting hospital

« Percentage of **clients** as per **Socio Economic Status**

LOW	**MIDDLE**	**HIGH**	**Overseas**
< 10,000 / MTh	10,000 to 50,000 / MTh	> 50,000/ MTh	
%	**%**	**%**	**%**

« **Financial Details** (Annual Report for financial assessment)

List is indicative not exhaustive and can be modified as per requirement

Department	IPD	OPD	Diagnostics	Surgery	Day-care	Pharmacy	Others
Income							
Particulars	Manpower	Materials	Marketing	Administration	Power	Water	Maintenance

Expenses							

« Percentage Growth Rate of Organization in comparison to last financial year? (if possible)

Human Resource Details:

Designation	Nos	Salary range
A. Clinical Staff		
HOD Clinical Department		
Registrars.		
Resident Medical Officers		
Sr. Technicians		
Jr. Technicians		
Staff Nurses		
Jr Nurses		
B. Administration Staff		
CEO		
Medical Superintendent		
Administrator		
Jr Admin Staff		
Sr. Admin Staff		
N.B. List is indicative not exhaustive and can be modified as per requirement		

« Comment on arrangement with consultants

« Comment on outsourced departments

Growth Potential

« Given the chance of Expansion, what facility would you like to add

« What niche services do you feel would attract more business?

Thank you!

C) Consultant Questionnaire

CONSULTANT QUESTIONNAIRE for External Doctors

Name	**Dr.**
Specialty	

Hospital Attachments / Private practice.			
Names of hospitals attached			
Type of Attachment			
Since (yrs.)			
Hosp. Positive points			
Hosp. Negative points			

Average OPD	/ Day	Fees: Rs.
Average Admissions	/ Week %	Fees: Rs.
ICU Admissions	/ Week	Fees: Rs.
Major Operations	/ Week	Fees: Rs.

« **Drainage** Areas

Within	**Outside**

« Percentage of patients as per **Socio Economic Status**

LOW	**MIDDLE**	**HIGH**
Income < 10,000/ month	10,000 to 35,000/ month	Income >35,000/ month
%	**%**	**%**

« Percentage of patients regards to **Payments**

INSURANCE/ TPA %	**CORPORATE %**	**OUT-OF-POCKET %**	**Railways %**

« What are the most common ailments / indications for surgery affecting your patients?

« Which hospitals / nursing homes do you **refer** them to? & the **Criteria** for choice:

VED Classification		
Criteria	Consultants Opinion	Remarks
Tech Availability		
Association with that hospital		
Affordable Cost		
Quality of Care		
Availability of Consultant		
Proximity of location		
Brand Name		
Others		
Vital-3, Essential-2, Desirable-1		

« What are the deficiencies in the existing health care system in your area? (In terms of Infrastructure/ Services)

« Please tick type of hospital facility that will be viable?

VED Classification		
Type of facility: Level of care	Consultants opinion	Remarks
Secondary care		
Tertiary care		
Secondary care with focus on only one Super-specialty		
Teaching Hospital		
Retail Healthcare		
Number of beds: Magnitude of facilities		
75 – 100 beds		
100 – 150 beds		
150-200 beds		
Grading: Vital-3, Essential-2, Desirable-1		

Provide details about other healthcare initiatives; which will need to be provided with the institution facilities

- Nursing education
  - Paramedical education (Physiotherapy, DMLT, Optometry, Occupational therapy)
  - Social infrastructure (Banks, Shops, Restaurant, SPAs etc.)
  - Others

Please describe below:

« Do you feel that in your service area, patients are willing to pay for good quality health services? ***Yes / No***

« Any peculiarity regarding Medical Practice in your geographical area?

« What are the hindrances in setting up and sustaining a hospital setup in this region

« Will you like to be associated with the new venture? ***Yes / No***

If **Yes**, the kind of association that would interest you

Full Time ❑ Visiting ❑ Investor ❑

« What according to you should a new venture have; as specialty mix kindly rate

Grade according to the need of this area on a scale of 1-3; least to highest	
Specialty	Rank
Cardiology	
Orthopaedics	
Neurology	
Gen Medicine	
Oncology	
General Surgery	
Urology	
Paediatrics	
Nephrology	
Organ Transplant	
Obstetrics & Gynaecology	
Ophthalmology	
Cosmetic / Plastic surgery	
Dental	
Bariatric surgery	
ENT	

« What niche services should the hospital seek to provide?

Thank you!