Summer Training Report

Submitted By

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MBA (Hospital & Health Management)
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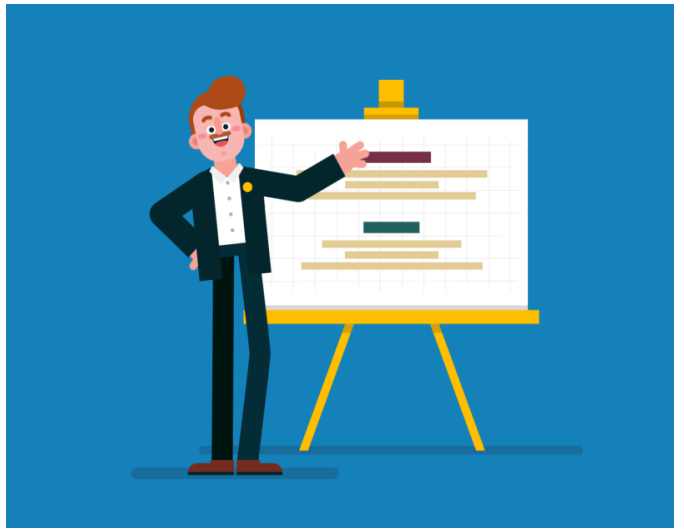

Under the Guidance of

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IIHMR UNIVERSITY

Situation of COVID-19 in Uttar Pradesh-An Observational Study
"The Biggest against The Deadliest"

INTRODUCTION

- Coronavirus disease also called as (COVID-19) is an infectious disease caused by a new virus first reported in Wuhan in December 2019.
- In India first case reported on 30th Jan 2020.
- 6,06,907 confirmed cases and 17,865 fatalities and 360713 people recovered so far as by MOHFW as on 2nd July 2020 .
- In Uttar Pradesh the current situation lies with 24,056 confirmed COVID-19 cases and 718 fatalities and 16,621 recovered cases implying 69.6% recovery rate as reported by MOHFW on 2nd July 2020.
- The Uttar Pradesh government has taken the strict measures to control the spread of this disease in the state which is considered as one of the biggest state of the country with highest population density.
- To understand the situation in a better way a observational study was conducted for the state of Uttar Pradesh by collecting data from various secondary sources like articles, journals, websites and papers to know the mortality, morbidity and recovery indicators in total tested positive and also enlist some of the best practices adopted by the state and the local government to tackle COVID-19 situation in their areas.

LITERATURE REVIEW

Journal & Date	Title	Authors	Main question	Key facts
CDDEP 20 APR 2020	COVID-19 in India : State-wise estimates of current hospital beds, intensive care unit (ICU) beds and ventilators	Geetanjali Kapoor, Aditi Sriram, Jyoti Joshi, Arindam Nandi, Ramanan Laxminarayan	What are the State-wise estimates of current hospital beds, intensive care unit (ICU) beds and ventilators in India	->Most of the beds and ventilators in India are concentrated in seven States - Uttar Pradesh (14.8%), Karnataka (13.8%), Maharashtra (12.2%), Tamil Nadu (8.1%), West Bengal (5.9%), Telangana (5.2%) and Kerala (5.2%). -> In Uttar Pradesh there are 4635 hospital beds available in public sector and 12,468 beds available in private sector totalling 17,103 beds in the state and 1963 ventilators in public sector and 4986 ventilators are available totalling up to approx. 7000 ventilators
ICMR 28 APR 2020	The 2019 novel coronavirus disease (COVID-19) pandemic: A review of the current evidence	Raman R Gangakhedkar, Nazia Nagi, Anup Agarwal, Bhabatosh Das Bhabatosh Das,Sayantan Banerjee, Swarup Sarkar, Nivedita Gupta	Review of 2019 novel Corona Virus Disease	The 2003 SARS outbreak was hypothesized to have originated from a mutated coronavirus from small carnivorous animals sold in a live animalmarket in Guangdong, China the likely source(s) potentially including masked palm civets, raccoon dogs and Chinese ferret badger. Similarly, the 2012 MERS-CoV outbreak was found to have originated from dromedary camels. In anticipation that COVID-19 cases might be linked to the exposure to a live wild animal market, the Chinese Government has banned wild animal business on January 21, 2020

LITERATURE REVIEW

Journal & Date	Title	Authors	Main question	Key facts
THE LANCET 16 JULY 2020	A vulnerability index for the management of and response to COVID-19 epidemic in India: An ecological study	Rajib Acharya, PhD	Which Indian states are more vulnerable to COVID-19 crises in the country?	A number of districts in nine large states—Bihar, Madhya Pradesh, Telangana, Jharkhand, Uttar Pradesh, Maharashtra, West Bengal, Odisha, and Gujarat—located in every region of the country except the northeast, were found to have high overall vulnerability (index value more than 0•75).
LUNG INDIA 04 MAY,2020	COVID-19,Pandemic in India: A clarion call for better preparedness	Parvaiz A Koul, Raja Dhār	COVID-19,Pandemic in India: A clarion call for better preparedness	->The gold standard of diagnosis of COVID-19 is detection of the viral RNA by real-time-polymerase chain reaction from a nasopharyngeal swab or sputum sample, with results within a few hours to 2 days. ->The Indian regulatory agencies went on dynamically changing the criteria for testing and quarantining

LITERATURE REVIEW

Journal & Date	Title	Authors	Main question	Key facts
The Indian Journal Of Paediatrics, IJP 13MAR2020	A Review of Corona Virus Disease -2019 (COVID-19)	Tanu Singhal	Challenges faced by the outbreak	Healthcare professionals should take travel history of all patients suffering from respiratory symptoms and any international travel. People should stop spreading myth and false information about the disease. Efforts should be made to prevent future outbreaks of zoonotic origin
Asian Journal of Psychiatry 10APR2020	COVID-19-Impact of Lockdown on Mental Health and tips to Overcome	Pavan Hiremath, C S Suhas Kowshik, Maitri Manjunath, and Manjunath Shettar	What is the impact of Lockdown on mental health of people and how to overcome it?	Problems like depression, anxiety, and panic disorder have been observed in the people during the lockdown due COVID-19 pandemic. Anxiety and depression can be overcome by planning your day to day routine and indulging in the activites and hobbies the person likes as per his or her own interest

OBJECTIVE

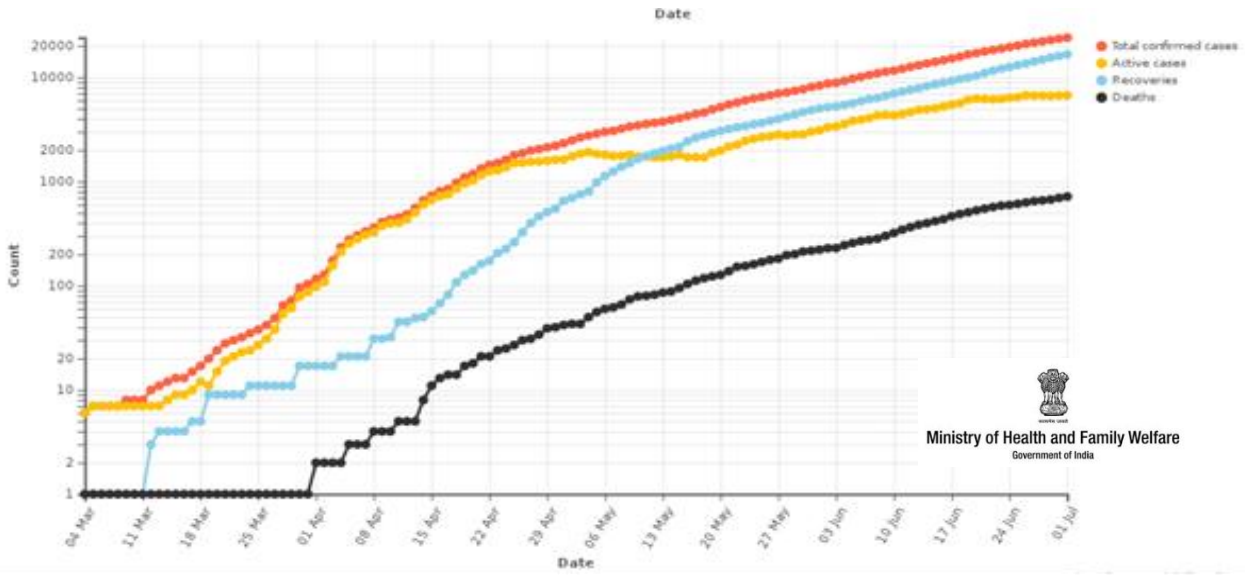
- To know the mortality, morbidity and recovery indicators among total tested positive COVID-19 individuals in Uttar Pradesh, the largest state of India.
- To find out Total number of districts affected by COVID-19 in Uttar Pradesh.
- To find out the Availability of Hospital Beds for COVID-19 patients in Uttar Pradesh with respect to other Indian states.
- To enlist positive steps taken by the UP government to control the spread of COVID-19 in India.

METHODOLOGY

In this study a quantitative research method was used using an observational study design to determine the status of COVID-19 in Uttar Pradesh on various parameters like Mortality ,Morbidity and Recovery indicators in various districts of the state by collecting secondary data from various sources like Newspapers, Journals, Research papers and websites.

Sources from where data has been collected- WHO, John Hopkins School of Public Health, MOHFW, Various Research Papers and Articles

Mortality, Morbidity & Recovery Indicators of COVID-19 in Uttar Pradesh from March 2020-July 2020



- 1ST Case of COVID-19 in Uttar Pradesh was reported on 4th March 2020 in Ghaziabad.
- Uttar Pradesh reached its First 100 cases of COVID-19 cases on 1st April 2020
- By 22nd April 2020 Uttar Pradesh touched the count of 1000 COVID-19 cases in the state.
- By 3rd June this count rose to 10,000 positive COVID-19 cases in the state.
- On 24th June 2020 the state crossed the number of COVID-19 Cases above 20,000 mark
- On 1st July the number stands at 24000 plus COVID-19 cases in the state with 17,221 recoveries and 735 fatalities.

SOURCES AND THE CURRENT TRENDS OF COVID-19

World Health Organisation (WHO): (Updated :2nd July 2020, 23:36 GMT+5:30)

Confirmed cases- 10,51,4028
Confirmed deaths- 512,311
Recovered Cases-60,57,192
Countries, areas or territories with cases- 215

Johns Hopkins School of Public Health (JHSPH): (Updated: 2nd July 2020, 23:36 GMT+5:30)

Coronavirus Cases: 10,719,686
Deaths: 5,16,786
Recovered: 6,125,173
Active Cases: 4,258,189
Closed Cases: 65,81,760

Ministry of Health and Family Welfare (Government of India): https://www.mohfw.gov.in/ (as on: 2nd July 2020, 20:30 GMT+5:30)
Confirmed Cases- 6,26,511
Active Cases-2,27,439
Cured / Discharged- 3,79,902
Deaths- 18,213
Migrated- 01

India Covid-19 Tracker: (By Govt of India)-
https://www.covid19india.org/ (Updated: 2nd July 2020, 20:17 GMT+5:30)
At India Level:
Confirmed: 6,26,378
Active: 6,869
Recovered: 17,221
Deceased: 18,225

Findings on COVID-19 Situation In Uttar Pradesh

As of 2nd July 2020, all 75 districts have been affected from COVID-19 in Uttar Pradesh

According to the data,

Top 6 worst affected districts of Uttar Pradesh are-

Ministry of Health and Family Welfare
Government of India

District Name	Confirmed cases
Noida	2831
Ghaziabad	2283
Lucknow	1488
Kanpur (City)	1412
Agra	1305
Merrut	1226

Top 6 districts of Uttar Pradesh with highest fatalities are

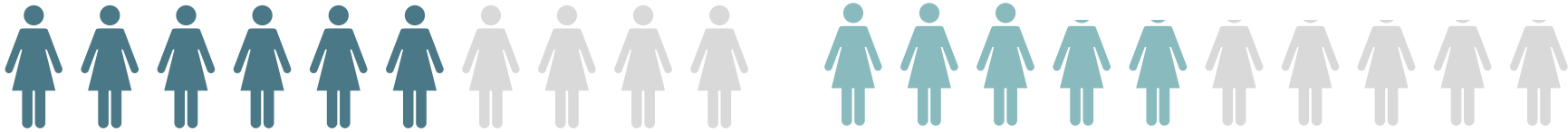
District Name	Fatalities
Agra	93
Merrut	89
Gaziabad	62
Kanpur (City)	59
Noida	28
Lucknow	25

Top 6 Least affected districts of Uttar Pradesh are

District Name	Confirmed cases
Lalitpur	17
Sonbhadra	54
Banda	58
Mahoba	64
Sitapur	66
Kanpur Dehat	70

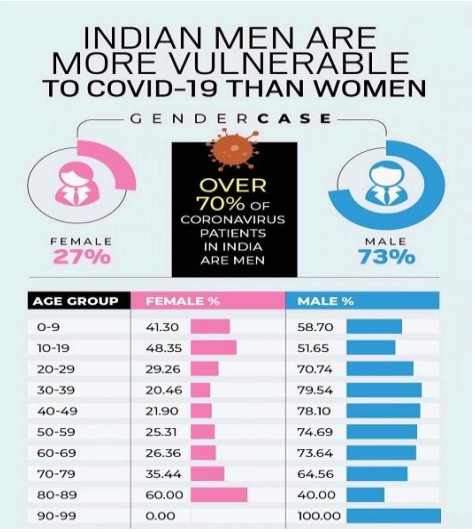
Testing Statistics of COVID-19 in Uttar Pradesh (As on 1st July 2020)

Total samples tested	7,58,915
Sample Tested per million population	3,373
COVID-19 Positive	24,056
Negative	7,34,859
Positive Percentage	3.17%
Awaited Test Results	



FINDINGS

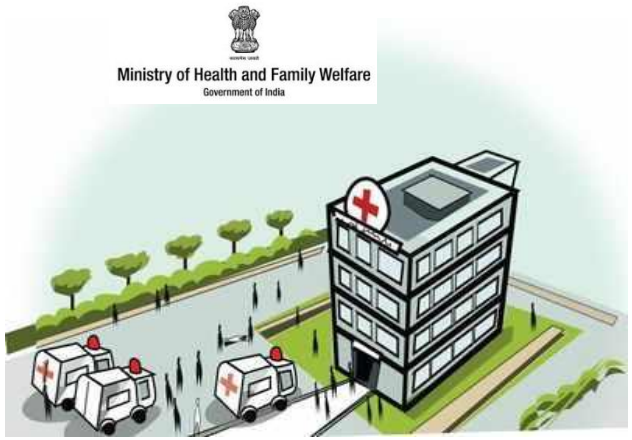
- During the study It was found that around 1,0,51,4028 cases of COVID-19 have been confirmed with 5,19,605 deaths reported worldwide and around 6,057,192 people recovered in 213 countries,
- In India this figure stands at 6,06,907 confirmed cases and 17,865 fatalities reported and 360713 people recovered so far as by MOHFW as on 2nd July 2020
- In Uttar Pradesh the current situation lies with 24,056 confirmed COVID-19 cases and 718 fatalities and 16,621 recovered cases as reported by MOHFW on 2nd July . which is still much lower than other states.
- In the study it was also found that males were more affected than females especially those who are above 60 years old.
- Migration was found to be one of the main reasons in India for the widespread of this disease with the highest number of migrants from Uttar Pradesh.
- . During the course of study it was also found that there is an acute shortage of Hospitals and ventilators in the country to deal with the estimated number of COVID-19 cases in the next few months. As per the study in Uttar Pradesh there are 4635 hospital beds available in public sector and 12,468 beds available in private sector totalling 17,103 beds in state and approximately 7000 ventilators in total



Top destination of migrants from various States

Source	Destination	Share of migrants from source State (%)
North & East		
Uttar Pradesh	Maharashtra	23.00
Bihar	Jharkhand	17.60
West Bengal	Jharkhand	19.80
South		
Karnataka	Maharashtra	56.80
Tamil Nadu	Karnataka	36.90
Andhra Pradesh	Karnataka	43.50
Kerala	Tamil Nadu	36.90
West		
Maharashtra	Gujarat	32.70
Madhya Pradesh	Maharashtra	28.20
Gujarat	Maharashtra	66.60
Rajasthan	Gujarat	20.40

Source: Census 2011



Lockdown Phases and its Impact In Uttar Pradesh

The timeline of 5 phases of lockdown-

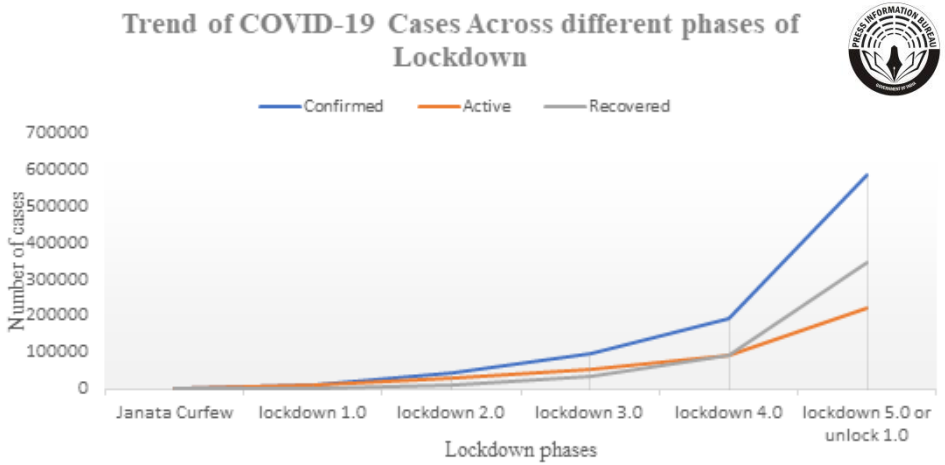
Lockdown 1.0 (25 March 2020 – 14 April 2020) –
Phase one of national lockdown was of 21 days. India reported 11485 confirmed cases, 9721 active cases, 1365 recovered cases, 396 deceased cases and tested a total of 244893 individuals until the 14 April 2020. Cases doubling time were observed as 4.66 days.

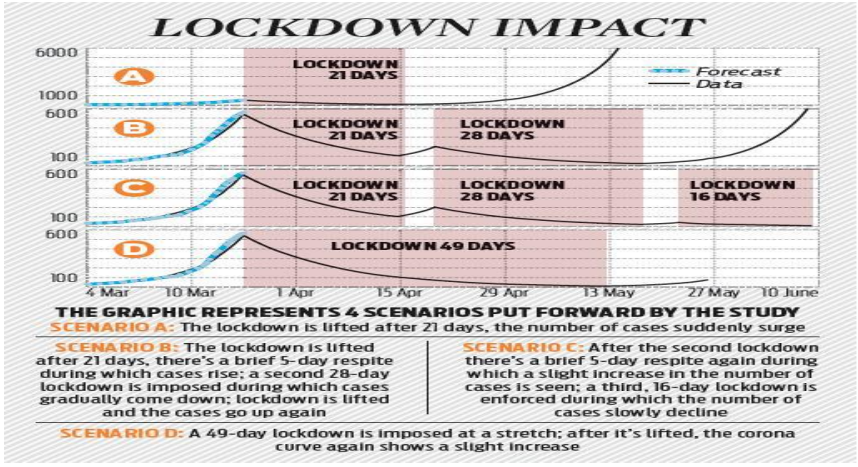
Lockdown 2.0 (15 April 2020 – 3 May 2020) –
Prime Minister Modi extended the nationwide lockdown till 3 May 2020 on 14 April 2020. On 16 April, lockdown areas were classified as "red zone", indicating the presence of infection hotspots, "orange zone" indicating some infection, and "green zone" with no infections. India reported 42779 confirmed, 29549 active, 11763 recovered, 1463 deceased cases and tested a total of 1107233 individuals until the end of phase 2 of lockdown. Cases doubling time were observed as 10.3 days.

Lockdown 3.0 (4 May 2020 - 17 May 2020) –
The Ministry of Home Affairs and the Government of India further extended the lockdown period to two weeks beyond 4 May 2020 on 1 May 2020.
India reported 95699 confirmed cases, 55875 active cases, 36795 recovered cases, 3025 deceased cases and tested a total of 2302792 individuals until the end of lockdown 3.0. Cases doubling time were observed as 12.3 days.

Lockdown 4.0 (18 May 2020 - 31 May 2020) –
On 17 May 2020, the National Disaster Management Authority (NDMA) and the Ministry of Home Affairs (MHA) extended the lockdown for a period for two weeks beyond 18 May 2020.
India reported 190648 confirmed cases, 93368 active cases, 91862 recovered cases, 5405 deceased cases and tested a total of 3837207 individuals until the 31 May 2020. Cases doubling time were observed as 14.7 days.

Lockdown 5.0 or Unlock 1.0 (1 June 2020 – 30 June 2020) –
The Ministry of Home Affairs issued guidelines for the month of June. Lockdown restrictions kept unchanged for containment zones, while activities were permitted in other zones in a phased manner. Large gatherings were still banned but there were no restrictions on inter-state travel. However, night curfews was there in effect from 9 p.m. to 5 a.m. in all areas.



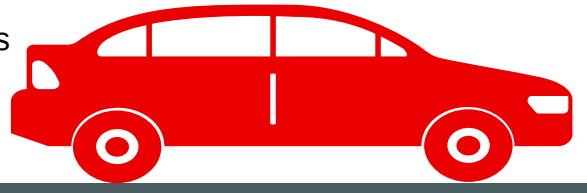


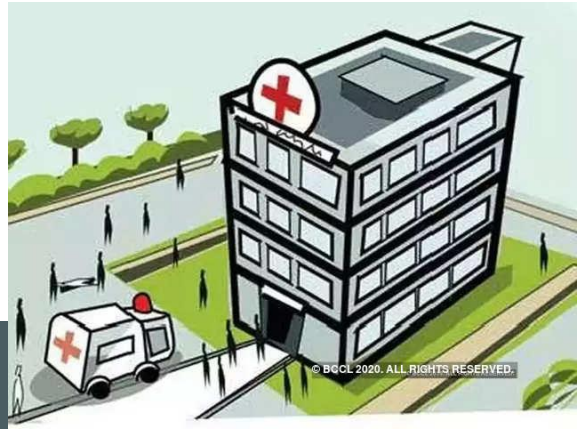
District wise progress and strategy to open/extend Lockdown in Uttar Pradesh

- The containment strategy for combating COVID-19 in Uttar Pradesh is similar to the one employed by China in Wuhan, where the pandemic originated, and is also being implemented in other parts of the country like Maharashtra and Rajasthan.
- The Yogi Adityanath administration **sealed "Covid-19 hotspots**" in 15 districts of Uttar Pradesh, including Noida and Ghaziabad in the National Capital Region (NCR), to check the spread of the pandemic.
- The logic behind this is to **isolate these hotspots to ensure no one visits or steps o**ut, in order to ease detection and isolation of other positive cases to break the chain of transmission.
- The process begins with the hotspots being completely cordoned off. **All vehicular movement is barred in the areas other than to maintain essential services**.
- **Residents are not allowed to step out of their houses** even to buy groceries and other essentials, all of which needs to be home delivered.
- **Drones have been deployed** to keep a strict vigilance in the areas which have been identified as the hotspots.
- The strategy to control the spread of COVID-19 includes **mapping a 3-km radius around the home of a Covid-19 positive case as a containment zone, and a further two kilometres as a buffer zone**.
- People who are violating the norms of Lockdown are being booked under **NSA or National Security Act in Uttar Pradesh** under the lieu to spread COVID-19 and risk the lives of others.

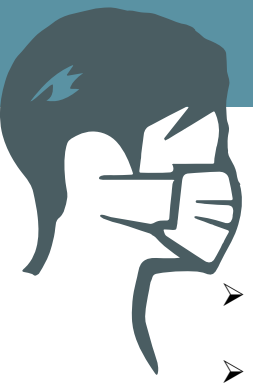
Best Practices taken by Government/Non-Government Organisations to control spread of Covid-19 in Uttar Pradesh

- On 24 March 2020, the Prime Minister announced a **21-day nationwide lockdown**: a complete ban is being imposed on people from stepping out of their homes.
- **Mass gatherings** at public places have been strictly **prohibited**
- People are advised to follow **social distancing** and have been asked to stand at least at a distance of 1 meter from each other while talking or standing at public places and shops.
- **International and domestic travel** of tourists has been **banned** within and outside the countries of the world to prevent the spread of disease from one region to another.
- **Mandatory screening of passengers** and tourists at airports and railway stations.
- Construction of **Quarantine and isolation facilities** for the patients who have been suspected of COVID-19.
- All the flight services and railway services in the country have been stand cancelled till further orders.
- All the **Educational institutes and offices have been closed** and people are advised to remain inside home and not to come outside unless there is an emergency.
- People are advised to **use masks, gloves and hand sanitizers and wash hands** frequently with soaps to control infections.
- **Hospitals and medical services are made to be remain vigilant and alert 24/7** to treat and report any case of COVID-19 with immediate effect.
- In the states which have reported 6 or more cases in particular areas, they have been marked as **hotspots** and have been completely sealed off to prevent the spread of the infection in the society.
- **Regular sanitizations** have been started in the localities which have been identified as the hotspots.
- **Contactless delivery system** have been started by many shopkeepers where shopkeeper will leave your order at your door step and you can collect it once the person has left so to prevent the spread of infection by having minimal or no contact.
- Government of Uttar Pradesh have started **Community kitchen** in the affected areas
- to provide food for the people during the lockdown period





CONCLUSIONS



- Earlier the number of confirmed cases in India is were doubling in every 4 days or less, which is 20.1 days as of now. In Uttar Pradesh the doubling rate has improved to 29 days which was earlier 3 days and recovery rate stands at 70 percent..
- As per the findings from the study it has been seen that the
  - rate of recovery of Covid-19 patients in India is improving with each passing day.
  - the rate of recovery was 11.41% on 15th April 2020, it rose to 12.02% on 16th April 2020 and now the recovery rate stands at 60.96% as on 2nd July 2020

- **In Uttar Pradesh**

- **With stringent measures and promptly identifying the hotspots and sealing them off instantly resulted in slowing down the curve of COVID-19 in some districts.**
- **Lalitpur, Sonbhadra, Banda, Sitapur and Kanpur Dehat have been able to control the spread of COVID-19**
- **.Out of 24,5811 confirmed cases in the state 17,771 patients have already been recovered as of 2nd July 2020.**
- **Recovery rate of COVID-19 patients in UP is at 63.1% as of 2nd July 2020**
- **Ghaziabad, Meerut ,Agra and Noida are among the worst affected districts of Uttar Pradesh.**
- **UP government has started rapid pool testing to keep check on COVID-19.**
- **UP became 7th state in the country to check 7,15,968 COVID-19 samples till 2nd of July**
- **In UP Total of 17,103 beds are reserved for COVID-19 along with 7000 ventilator beds for critically ill patients.**
- **In UP the death Toll due COVID-19 stands at 718 FATALITIES Which is 2.31% of total cases.**
- **With increasing cases of COVID-19 in the state Uttar Pradesh was the first state to initiate weekly lockdown from every Friday night 10.pm to Monday Morning 5am after Unlock Phase-01.**
- **UP was also among the first state to arrange large pool of buses to send the migrant labours back to their homes who were stuck in Lockdown.**

COVID-19

THANK YOU

IIHMR UNIVERSITY

Part-B (Online Course)

Healthcare In India- Strategic Perspectives

Offered By-

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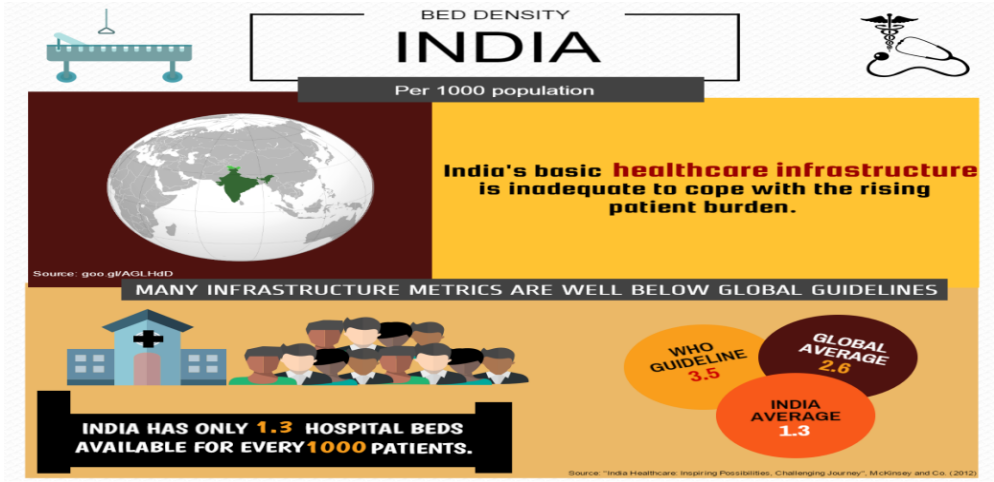
INTRODUCTION

The Indian healthcare sector is garnering global attention. Be it the evolution of Indian pharmaceutical firms, low-cost hospitals or disruptive start-ups, the sector is a laboratory of myriad market forces impacting innovation, choices and societal welfare. At the same time, India continues to battle with an inadequate healthcare infrastructure and a rising disease burden.
This business course applies a strategic lens to the sector's submarkets including hospitals, pharmaceutical firms and diagnostic equipment providers. Through this course we will examine the role of disruptive innovation and the ways in which public policy shapes the evolution of healthcare markets. With this framework, we will be able to evaluate where the exciting business opportunities lie, and what are the unmet needs in this sector that can be addressed by a startup.

OBJECTIVE

- To explore the Indian Healthcare sector from the bird's eye view.
- To understand the current scenario and market trends in the healthcare sector
- To understand the strategic perspectives in the Indian healthcare sector
- To analyse the gap between the consumer demand and healthcare services available in India.
- To understand the role of hospitals, pharmaceutical firms and diagnostic equipment providers in the Indian Healthcare sector.



METHODOLOGY

- Video lectures
- Additional reading materials
- Thought Leader Insights
- Assignments
- Graded Assessment

KEY LEARNINGS

- Basic concepts in strategy applied to sub-markets within the healthcare sector
- Competitive advantage and the role of resources in differentiating the successes from the failures
- Corporate leader perspectives on the evolution of the various sub-markets in the sector

HEALTHCARE IN INDIA-STRATEGIC PRESPECTIVES

*Note: * - number of doctors possessing recognised medical qualifications (Under I.M.C Act) registered with state medical councils/medical council of India*

KEY ISSUES AND CHALLENGES IN INDIAN HEALTHCARE SYSTEM

- Medical Negligence
- Poor sanitation
- Overcrowding
- Lack of Basic Hygiene
- High Cost of Medical Treatment
- Lack of effective health Insurance support system

Strategic Viewpoint of Indian Healthcare Sector

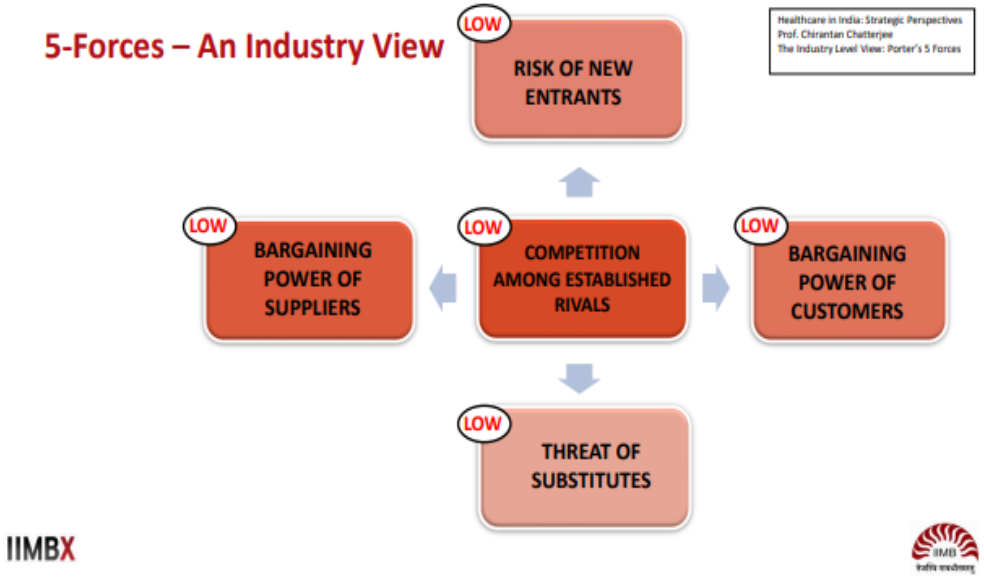
Before discussing the strategic viewpoint let's understand **what is a strategy?**
Strategy is nothing but a common sense or a common approach. It's about diagnosing particular problem and finding a guiding policy in terms of the problem that has been diagnosed, and then finally, carving out coherent actions for the guiding policies that are decided to solve the problem that has been diagnosed.

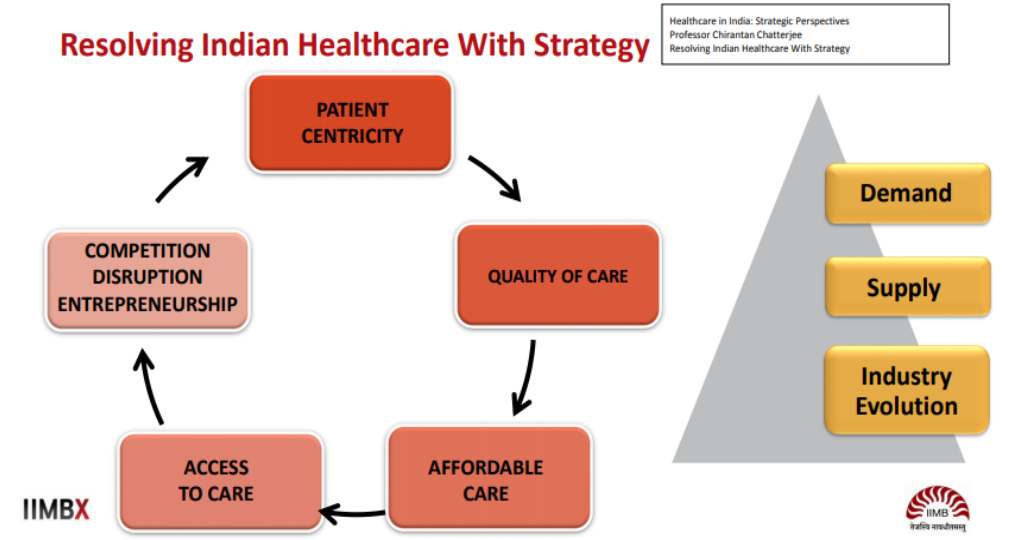
Porter's Analysis

The **first** strategic framework we examine is **Porter's Five Forces,** which operates at the **industry level.** This framework helps you to understand the level of competition within a given industry and the overall profitability of that industry.

Since Healthcare is a very essential commodity so if analyse Porter's 5 forces we can conclude that-

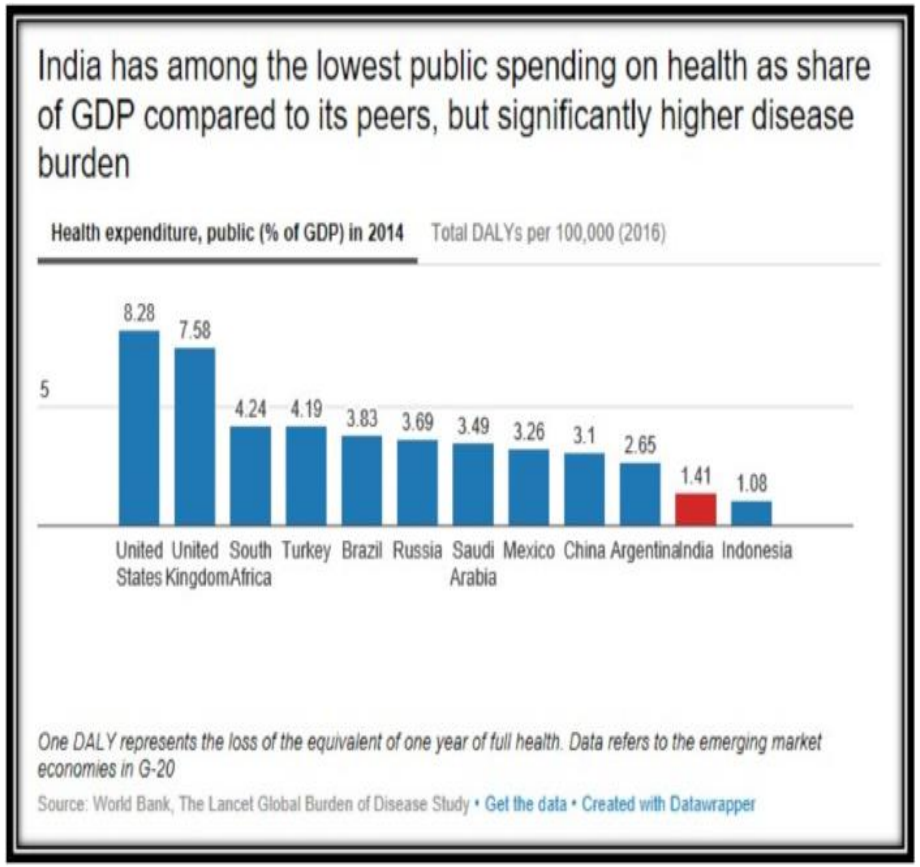
- Entry of New entrants is a lower risk because health will always be a priority.
- The customer has very low bargaining power with hospitals as they are the source which provides the healthcare facilities to the customer.
- In healthcare the supplier has very low bargaining power with you as an organization. And the possibility of new substitutes disrupting what you're offering in healthcare is also low.





THE INDIAN HOSPITAL SECTOR

Did You Know?



India's Total Healthcare Expenditure spend remained stagnant over the past decade with an **average spend of1.4 % of the National GDP**. India's out-of-pocket spend (60%) continues to remain significantly higher than the LMIC average (40%).

Overview of Indian Hospital Sector-

- In India if we look at especially, secondary and tertiary care in the sector, the key presence has been that of missionary hospitals in the country, and secondly, of the public sector. **But in recent times over the last 20 years, what we have seen is entry by a lot of private corporate chains in the Indian hospital market. Some of them have been so successful and have created some interesting business models like Narayana Hrudalaya or HCG oncology**

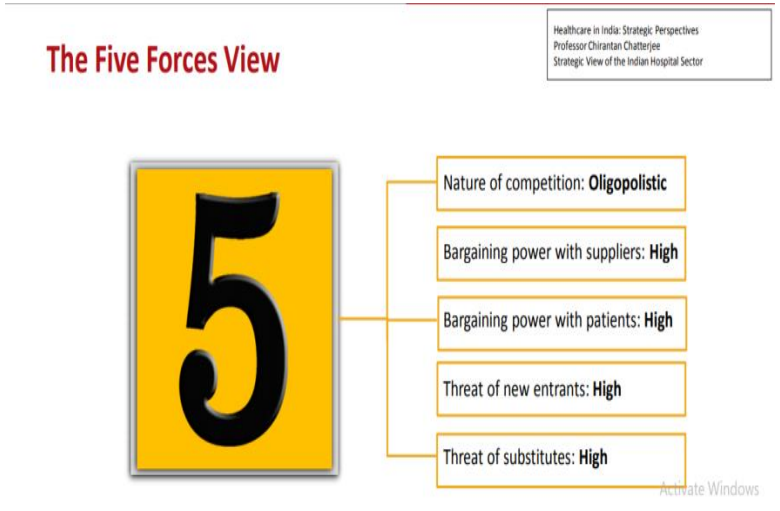
- Coming to recent times, I think the first thing to note about this particular hospital sector is that a bunch of them have either a single unit hospital, which is their **uni-specialty hospital** or a lot of them are **multi-specialty hospital and the element of focus in that is the Product Strategy which makes them successful.**
- **The third thing to note about in recent times is that there is some amount of vertical integration that is happening. So, we see that HCG, which is a cancer hospital, now getting into production of cancer medicines.** So, that's something interesting to note about this hospital.

“LSP” PRINCIPLE OF HOSPITALS

L- localisation- Some of these hospitals are really geographically focused like Aravind Eye Care hospitals are mostly geographically focused in Southern India.

S-Specialisation- the product specialization or the care specialization is something clearly standing out in the context of the Indian hospital sectors. Some of these hospitals, as I noted, are focused on cancer, cardio care, or eye. While some others are more broad-based.

P-Privatisation- So, from missionary to public sector organization of these hospitals, we now see entry like in Arvind or HCG or in Narayana of private medical or otherwise entrepreneurs in delivering secondary and tertiary care at prices which are affordable to the common man, with technologies which are modern and state-of-the-art, improving health outcomes in India.



Strategic View of Indian Hospital Sector

HEALTHCARE INSURANCE IN INDIA

A key component of our discussion in the Indian hospital sector is, "Who pays for a patient's treatment in a hospital?" Until recently, the answer was, "The patient", as evidenced by the fact that India is one of the world leaders in out-of-pocket spending for healthcare. **However, with the growing role of healthcare insurance providers in India, that answer is starting to change**

Facts about Healthcare Insurance Sector in India

According to Mr Bhargavadas Gupta, CEO, MD of ICICI Lombard Insurance, he says While healthcare has grown at its pace insurance has also grown; **it’s grown at about 20% over the last five years**. If you look back ten years, the 20,000 crore number that we have there was only 2,000 crores once upon a time so, the health insurance industry, has grown ten times in the last ten years.

THE INDIAN PHARMACEUTICAL SECTOR

Today India has earned a reputation for being the 'pharmacy of the world'

KEY ISSUES THE INDIAN PHARMACEUTICAL SECTOR

- Issue of the intellectual property.
- Quality issues on medicines coming out from Indian pharmaceutical sector.
- Lack of Innovation and entrepreneurship.
- The arbitrary and unpredictable nature of India's regulatory interventions.
- The government's ban on fixed-dose combination drugs and making prescriptions of medicines by their generic name instead of brand names mandatory remain key threats for the industry.

Current Trends-

- **Today India is among the leading global producers of cost-effective generic medicines and vaccines, supplying 20% of the total global demand by volume.**
- **At present, Indian companies supply over 80 % of the anti-retro-viral drugs used globally to combat AIDS.**
- **Some of the major domestic players in the industry include Sun Pharmaceutical Industries, Cipla, Lupin, Dr. Reddy's**
- **Today India has been identified as a high quality generic manufacturer across the globe; India exports half of its total production of pharmaceuticals to more than 200 countries in the world. In 2017-18, India exported Pharma products worth US$ 17.27 billion. By 2020, the industry estimates the exports to grow by 30 per cent to reach US$ 20 billion.**

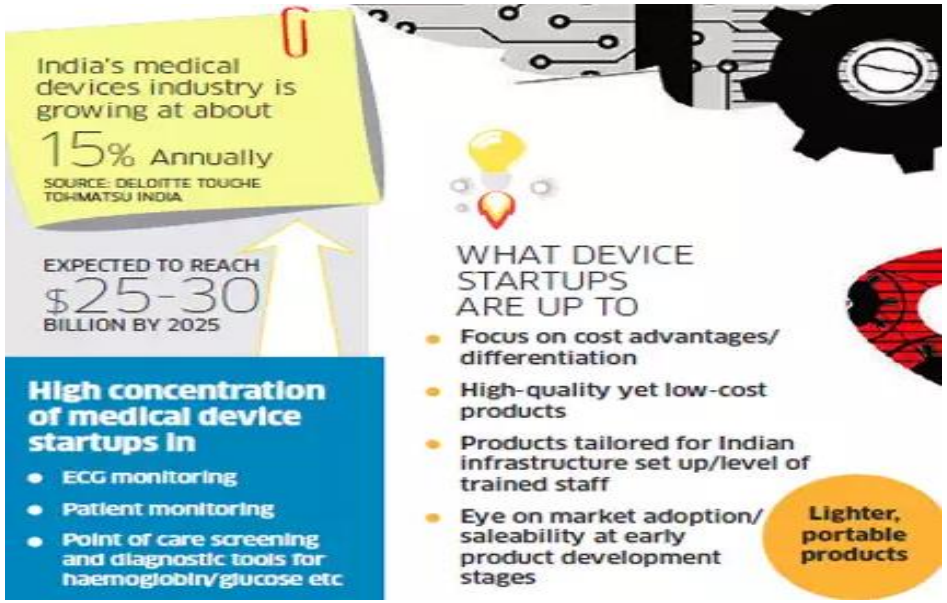
INDIA'S MEDICAL DEVICES AND DIAGNOSTICS SECTOR

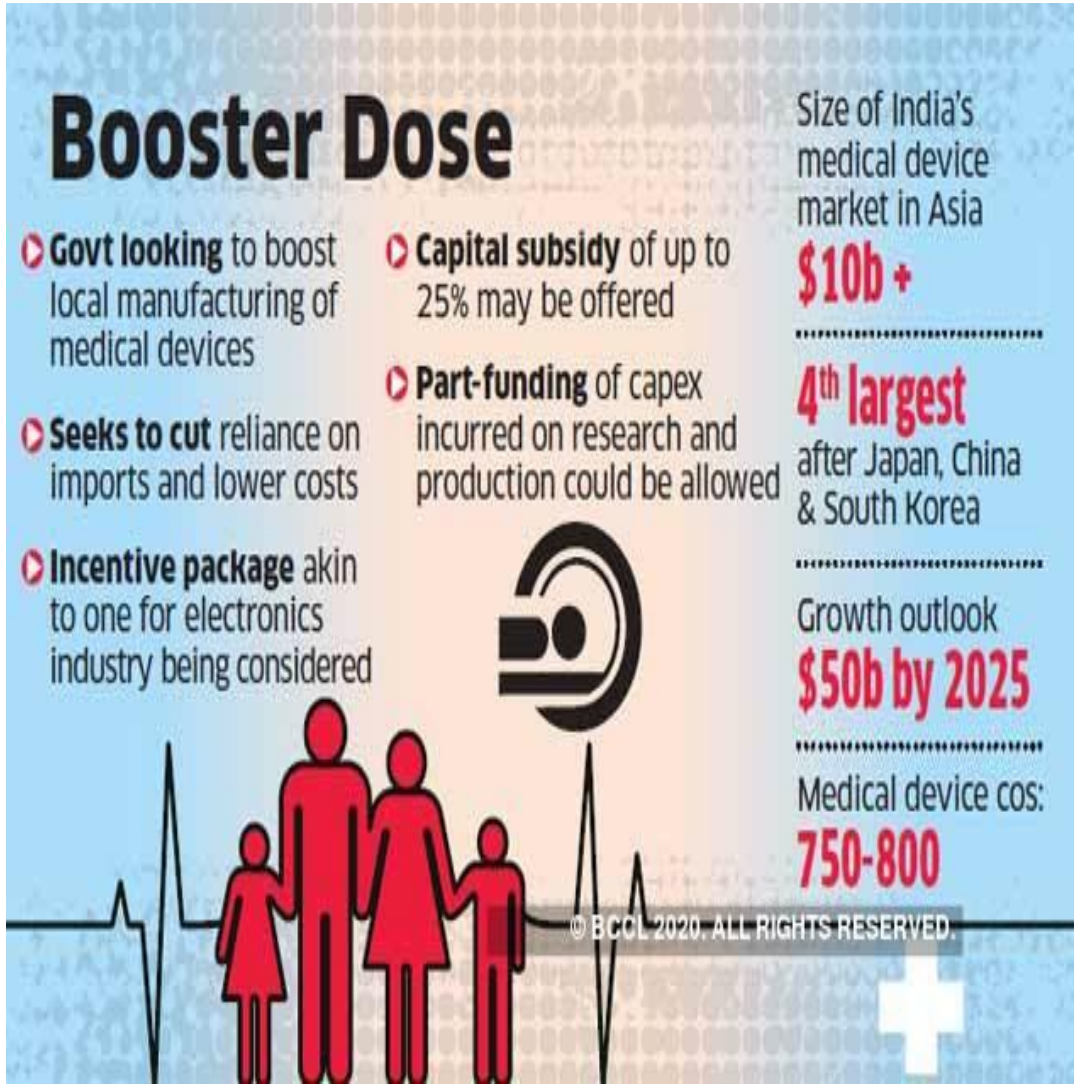
Overview of the Sector-

The Indian Healthcare industry has become one of the largest sectors in terms of **Revenue** and **Employment**. The **Medical Devices and Diagnostics** sub-sector is expected to grow at an annual rate of **7.3%** (CAGR in USD).

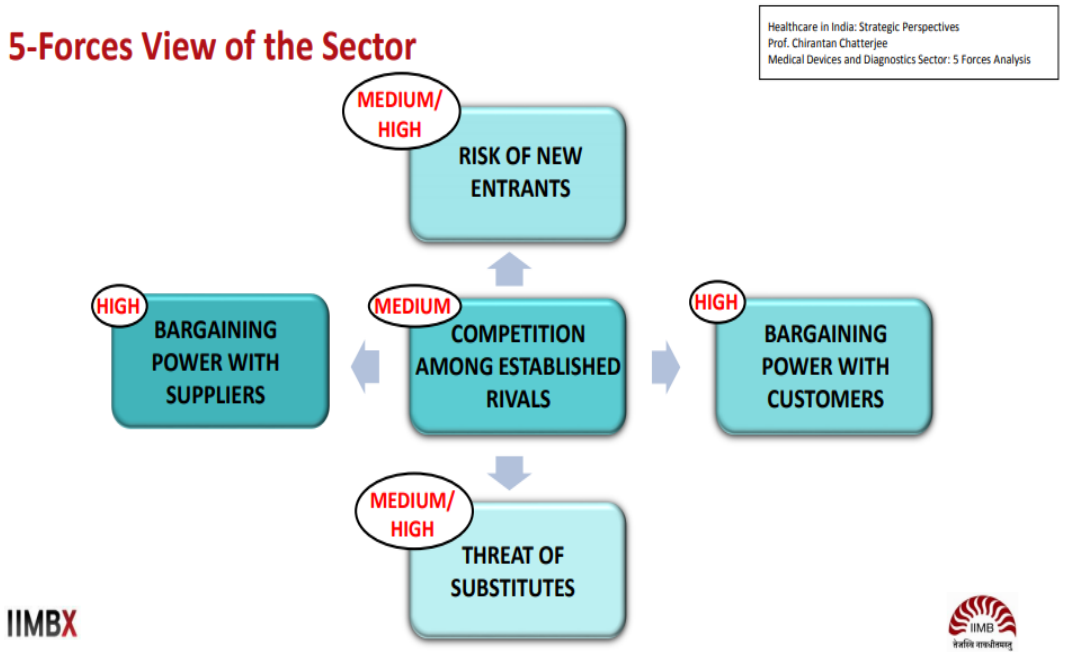
Key issues in The Indian Medical Devices and Diagnostic Sector-

- High price of medical diagnostics equipment .
- A majority of India's population lives in villages and do not have access to sophisticated medical diagnostics and medical care.
- Lack of a structured laboratory to place these high end equipments.
- The central and state government health departments do not have the capability to fund acquisition of large purchases and do not make adequate investments in the diagnostics area





Strategic View of the Sector-



Thought Leader Insight-

Mr Srinivas Prasad, CEO, Philips Innovation Campus,
According to Mr Srinivas there is a tremendous role of frugal innovation and the importance of quality standards for the devices and diagnostics industry, According to him the two big challenges that we have in India, is one is the non-communicable diseases and the second is the mother and child mortality But if you look at it, maternal mortality and infant mortality is probably among the highest in the world for which **Phillips has recently launched a solution to address to the Indian market under the name "Sanjeevani" which uses ANM workers as the tool to help pregnant mothers by monitoring them in the real time using mobile obstetrics monitoring and connecting them with either a hospital or a primary care centre or a OBgynec, sitting anywhere across the country so that high-risk pregnancies can be managed.**

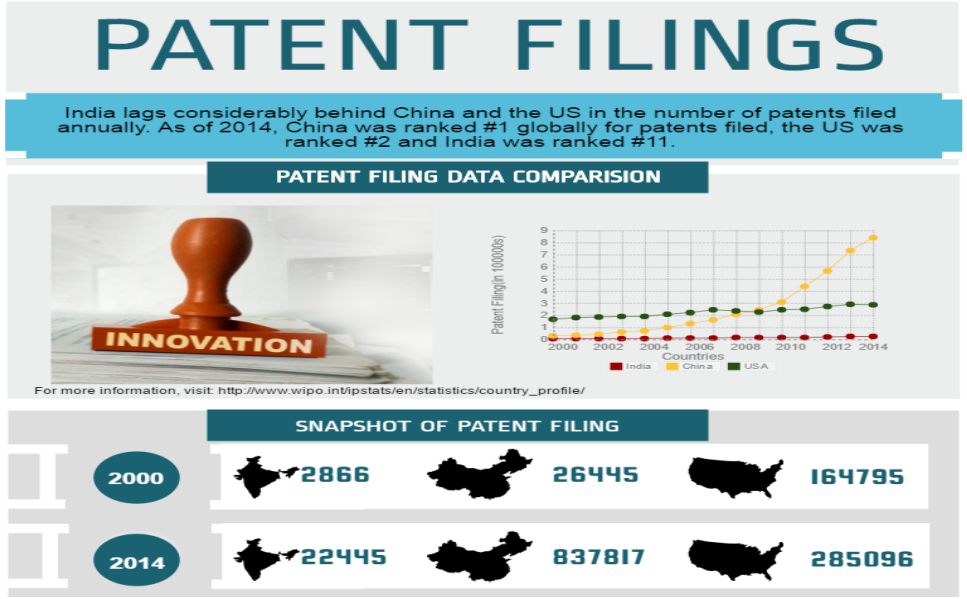
Disruptive Innovation and Regulation in Indian Healthcare

What is Disruptive Innovation?

A disruptive innovation is a low-cost alternative to existing services that arises via market forces when firms focus on "sustaining innovations" that eventually overshoot the needs of average consumers. Technology is often involved in disruption—where it facilitates a lower-cost business model.
Example- **Retail "minute clinics" are a good example of disruptive innovation in health care.** For a patient who just needs an examination, treatment and prescription for a minor illness, or a routine vaccination, physical or screening—a retail clinic is a convenient and low-cost alternative to a doctor's office or urgent care visit.

Regulations In Indian Healthcare System-

The regulation in healthcare in India is very poor as
The private sector dominates health care in India, but inadequate legislation and failure to enforce regulations contribute to poor quality medical services,.
Eighty per cent of spending on health in India is from personal funds, but existing laws do not ensure that private medical services maintain even minimum standards.
Consumer health organisations have long complained about: doctors overprescribing drugs, recommending unnecessary investigations and treatment, and failing to provide appropriate information for patients.
Health sector analysts say the private healthcare system in India should be segmented so that the relation between quality and prices of services can be examined.



CONCLUSION

India is a land full of opportunities for players in the medical devices industry. India’s healthcare industry is one of the fastest growing sectors and it is expected to reach $280 billion by 2020. The country has also become one of the leading destinations for high-end diagnostic services with tremendous capital investment for advanced diagnostic facilities, thus catering to a greater proportion of population. Besides, Indian medical service consumers have become more conscious towards their healthcare upkeep.

The Government of India is planning to increase public health spending to 2.5 per cent of the country's GDP by 2025. India's competitive advantage also lies in the increased success rate of Indian companies in getting Abbreviated New Drug Application (ANDA) approvals. India also offers vast opportunities in R&D as well as medical tourism. To sum up, there are vast opportunities for investment in healthcare infrastructure in both urban and rural India.

CERTIFICATION

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This is to certify that

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successfully completed and received a passing grade in

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