

Summer Training Report

By

Ayan Lahiri

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Acronyms/Abbreviations

S.No	Acronyms	Abbreviations
1	COVID-19	Novel Coronavirus Disease 2019
2	OR	Outcome Ratio
3	RR	Recovery Ratio
4	MERS	Middle East Respiratory Syndrome
5	SARS	Severe Acute Respiratory Syndrome
6	CB NAAT	Cartridge Based Nucleic Acid Amplification Test
7	NAT	Nucleic Acid Amplification Test

PANDAMIC COVID19: PRECAUTIONARY MEASURES AND RESPONSES

(COMPARATIVE STUDY DURING LOCKDOWN OF STATES NAMELY RAJASTHAN, MAHARASHTRA, DELHI, MP, UP, WEST BENGAL AND GUJARAT, INDIA)

INTRODUCTION:

Coronavirus infections are group of infections which causes diseases in animals and humans. Few viruses of this family were already known which causes mild illness to severe disease like MERS and SARS. The new virus strain which was found in Wuhan china in 2019 causes coronavirus disease called as COVID-19.

The symptoms of COVID-19 are different to person to person but the common symptoms which are fever, dry cough, sleepiness, and fatigue while the other symptoms of disease are headache, loss of sense and taste, diarrhoea, body pain, nasal congestion and reddening of eye. Sometimes person infected from diseases but do not develop any symptoms which are called as Asymptomatic. In India, there are many cases of COVID-19 which are asymptomatic in nature. In around 1 out of 6 people of COVID-19 infected person develops serious illness and feel difficulty in breathing otherwise people recovered easily without special medical treatment. The peoples who have another disease like diabetes mellitus, hypertension, heart issues and etc are more prone towards the serious illness of this disease. (MOHFW)

The disease is communicable, it will transfer from person to person with the means of small droplets from the nose and mouth when infected person coughs and sneezing. Person get infected also by touching the surfaces and objects of infected person and then touch their eyes, nose and mouth. The virus can live up to hours on floors and objects. People also infected if they breathe in the droplets of infected person when they sneezed or coughs that's why, the distance of 6 feet or 2 (Gaj ki duri) is advisable. The person transfers the disease 2 days before of their onset of symptoms of first symptoms.

For latest information, the government health bulletin should be checked on regular basis. There is no treatment of COVID-19 in the market, the only treatment which everyone can follow is prevention because Prevention is Better than Cure. Every country made their own strategy to combat with deadly virus. There are some precautionary measures which are as follows.

- Clean your hand for about 20 seconds with soap and alcohol-based sanitizer because it will kills the virus and prevent you for getting infection.
- Maintain a distance of 6 feet or 2 Gaj ki duri among yourself i.e. Maintain social distancing because if a person sneezing or coughing the droplet didn't enter into your body and 6 feet distance is because the virus can only travel upto 6 feet after that it falls down to the surface.
- Wear mask properly, and make sure around people wear mask as well because it will prevent you from infection. Dispose your mask properly. Don't throw the masks to the roads, rivers and ponds. Use of N-95 masks are mandatory in hospitals and containment areas. Make sure about your respiratory hygiene
- Stay at home if you feel tiredness and illness. If you have fever, cough, sore throat, and trouble in breathing, seek medical care and call on helpline no. for help. Because if you seek medical care on time, they are chances of heal early.
- Keep forward-thinking on the most recent COVID-19 hotspots (urban communities or neighbourhoods COVID-19 is spreading broadly). On the off chance that conceivable, abstain from venturing out to places – particularly if you are a more seasoned individual or have diabetes, heart, or lung infection. Why? You have a higher possibility of getting COVID-19 out of one of these zones.

In India, the first case was detected on 30th January in Kerala. Initially, the case was not increasing rapidly and a tally of 100 cases were completed on 15th March 2020. India is a country of different culture and belief, so

the pattern of disease of state was also different. Some state had fast recovery rate while some have slow recovery rate. To know more about the state response this study was conducted.

The comparison of the different states in countries like India, shows the dynamic pattern of COVID-19 pattern situation, while few states have highest recovery rates, and few are lowest recovery rates and high no in active cases. Maharashtra is the state which have highest no of COVID-19 cases and very much affected by this pandemic while Rajasthan is combating this pandemic in their own way, we conducted this study on seven states which are Maharashtra, Gujarat, Rajasthan, Delhi, Madhya Pradesh, Uttar Pradesh and West Bengal.

RESEARCH OBJECTIVE

To compare the situation of COVID-19 in seven states (Maharashtra, Gujarat, Rajasthan, Delhi, Madhya Pradesh, Uttar Pradesh, and West Bengal) in lockdown period.

RESEARCH QUESTION

What are the precautionary measures taken by the government and compare the situation of covid19 in seven states of India in lockdown period?

RESEARCH DESIGN

Descriptive Study

METHODOLOGY:

Mode of Data Collection: Secondary Sources

Data Source: Websites, Articles and MOHFW website

Study Period: 2 Months

Type of Research: Secondary Research

Timeline of States: (Results & Discussion)

MAHARASHTRA

The principal instance of the coronavirus pandemic in the Indian state of Maharashtra was affirmed on March 9th, 2020. Maharashtra considered one of the greatest hotspots of the country contributing to the 33.33% of the total case in India along with 40% death rate. As of May 31st, the fatality rate of COVID-19 is 4.3%, considered to be much higher amongst the other Indian states but considered much lower globally. With more than 1 lakh cases, Mumbai is the worst hit state. Mumbai Metropolitan Region (MMR) has recorded the highest spike with a figure of 66%.

On March 13th, the state government confirmed nCOV-19 to be an epidemic disease in some parts of Maharashtra such as the Navi Mumbai, Mumbai, Nagpur and Pune, and also implement the Epidemic Disease Act, 1987 which lead to hospitalizing any person who is having such symptoms. Business foundations, for example, film lobbies, shopping centres, pools and exercise centres were closed over the state as a precautionary measure. CM Shri. Uddhav Thackeray, gave a prohibition on every single open assembling and capacities. PMC (Pune Municipal Corporation) considered closing down all the recreational gardens and Rajiv Gandhi Zoological Park, which was quickly tasked and brought into existence from March 14th to contain the spread of the novel coronavirus.

Thackeray reported that the quantity of testing labs and their abilities would be expanded, as will the limit of isolate offices. On March 16th, the state government assigned financial aid of INR 45 Crores to the areas with affirmed cases.

It was observed that many patients fled away from the government quarantine centres and isolation wards within the medical centres. The government taken a step, to stamp the person with permanent ink so it would be easy to identify and trace the person if such incident happens and if happens so that legal actions could be taken.

On March 20th, CM Thackeray declared that all work environments, excluding essential goods and services & public transport, in Mumbai, MMR (Mumbai Metropolitan Region), Pune, Pimpri-Chinchwad and Nagpur will be called off until March 31st. CM asked his citizens not to come out of their house excluding essential goods and services the to stop the spread of disease.

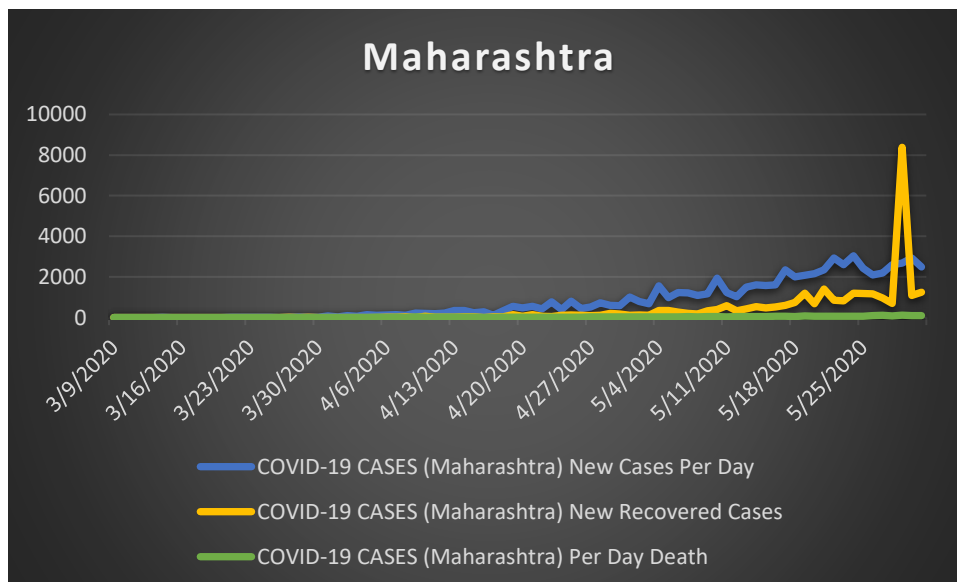
Afterward, CM Thackeray imposed Section 144 of Indian constitution across all the districts of the state sending it into full lockdown to curb the rise of cases. On March 23rd, he declared that all the state borders along with Maharashtra will be closed along with the districts to impose complete lockdown.

On March 26th In order to maintain social-distancing circles were made across all the vegetable market, grocery stores and many other places. This model was first executed in Pune on 24 March.

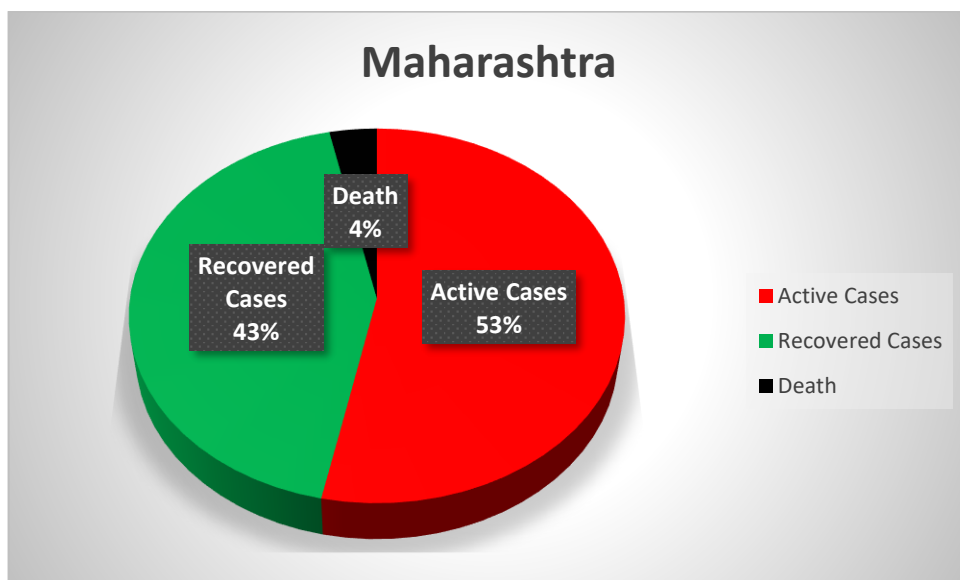
From April 1st, Police began utilizing a system of 5,000 Closed Circuit cameras alongside drones so to screen various pieces of the city and guarantee that the lockdown is maintained. Apart from Mumbai, drones were likewise utilized in thickly populated zones of Thane locale, for example, Mumbra and Bhiwandi for aeronautical reconnaissance and handing-off sound messages and admonitions. Mumbai turned into the principal Indian city to make wearing facemasks openly puts mandatory. On the next day, the state government chose to send State Reserve Police Force in the city for stricter authorization of the lockdown.

On 11 April, Thackeray declared that the lockdown in the state will be reached out until "in any event 30 April". On 14 April, he reported the arrangement of a COVID-19 Task Force, containing driving specialists, to exhort the state government on intends to control the flare-up.

On first May, Govt of India declared lockdown 3.0 till seventeenth may. On seventh June Maharashtra crossed the instances of china. The different parts are straight forwardly influenced by this emergency and the lockdown like Education, the travel industry, transport, and economy of the state.



Graph1: Trend of new cases, recovered cases and death of Maharashtra (till 31st May 2020)



Graph 2: Distribution of Active cases, Recovered cases and deaths of Maharashtra (Till 31st May 2020)

Graph 1 and Graph 2 depicts the trend of the cases and proportion of the cases, Maharashtra have highest number of cases in India and highest number of deaths as well, the outcome ratio (OR) and recovery ratio (RO) are 7.79% and 81.38% respectively.

GUJARAT

In Gujarat, the initial two instances of the COVID-19 were affirmed on 19 March 2020 in Rajkot and Surat. On 15 March, Anil Mukim, Chief Secretary of Gujarat, reported that the closure of schools, universities, instructive foundations, shopping centres, multiplexes, and pools over the state till March 29 as a precautionary measure against COVID-19. Be that as it may, the progressing board assessments for class X and XII could be directed. Additionally, fine of 500 was imposed on open spitting. Shyamal Tikadar, Chief Wildlife Officer of the state, reported that the state's national parks, havens, and protection centres, will stay shut from March 17 to March 29. Gujarat High Court said it will take up those cases considered urgent till March 31. Statue of Unity shut for voyagers till March 25 and it would further extend if needed. Platform ticket rate hiked from 10 to 50 at 12 railroad stations in Gujarat as a preventive measure against COVID-19 by the Western Railway of India.

Atul Pandya, Director of the Sabarmati Ashram, Ahmedabad said that the Ashram will stay closed for guests from March 19 to March 29 to manage the spread of COVID-19 and to guarantee the security of residents. On March 19, Gujarat reports initial two instances of COVID-19. An elderly person of 32 year from Rajkot, who came back from Saudi Arabia, and a person from Surat 21 year, who came back from UK, were positively tested.

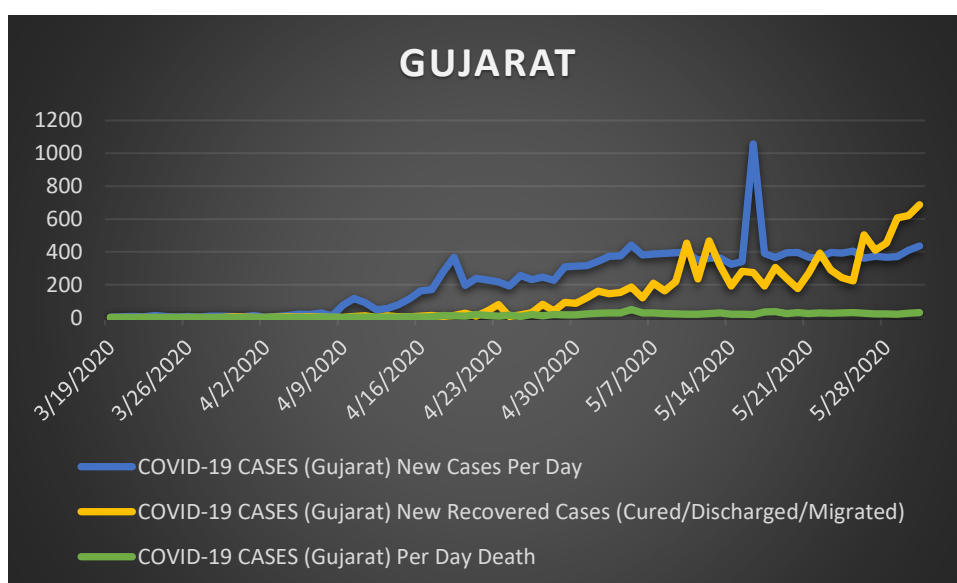
Vijay Rupani, Chief Minister of Gujarat, said no administration transports in the state will be chipping away on March 22 considering the 'Janata Curfew' reported by Prime Minister Narendra Modi. As COVID-19 cases saw an increase in the state, Government of Gujarat partially secures four urban communities - Ahmedabad, Surat, Vadodara, and Rajkot. All general stores selling non-essentials things in the four urban communities will stay shut till March 25 and government workplaces will work at half manpower on rotational manner till March 29. Chief Minister Vijay Rupani sanctioned that the all-new 1,200-bed limit Civil Hospital of Ahmedabad will be kept only for rewarding COVID-19 patients and would fill in as the nodal contamination control hub.

On March 22, Gujarat reports first deceased case of COVID-19. An elderly person of 69-year took last breath in Surat. Administration of Gujarat stretched out the partial lockdown to Gandhinagar. DGP Gujarat Shivanand Jha reported that whole state will be set under full lockdown beginning from 12:00 AM of March 24 till March 31. The Gujarat High Court chose to hear "incredibly pressing issues" through video conferencing, to guarantee social distancing in the midst of the COVID-19 pandemic. Leader Narendra Modi Prime Minister India declared total lockdown in the whole country for 21 days established from the 25th day of march till 14th day of April as a measure to stop the community transmission of Covid-19. The Government of state choose in the field of education to promote all the students of standard I to IX and XI to the next standard without conducting exams. CM Shri. Vijay Rupani declared that Government of state would deliver free food items among the weaker section of the society of that would be 3.25 crores of people from 1st day of April, to those holding ration cards. Administration of Gujarat reported free food doorstep office for old people remaining alone at home during lockdown

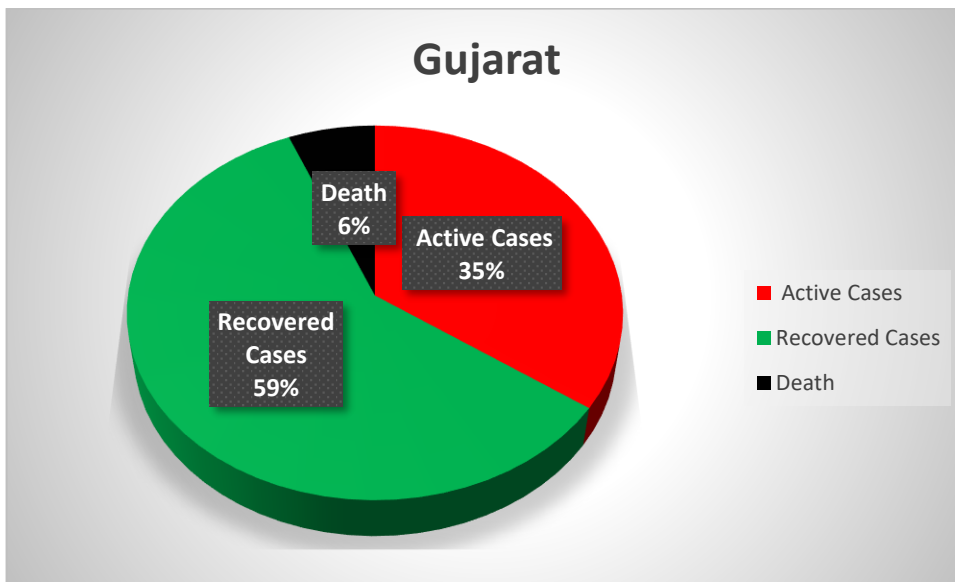
CM Shri. Vijay Rupani sanctioned Rs. 650 crore financial aid to 65 lakh groups of financially poor people, workers, sloppy specialists, development laborers of the state. Administration of Gujarat cautioned industrial facilities, organizations, and bosses by stating that legal actions would be taken under the DMA (Disaster Management Act) against the individuals/organizations, would have taken steps like terminating employees and salary deduction during this crisis.

Ashwani Kumar, Secretary to CM stated that the Government thought of giving 25,000 N95 covers to private specialists in the state so they can give better clinical services to the citizen along with the governmental institutions. Legislature of Gujarat started employing of resigned police work force to send them as extra power to force the lockdown across Gujarat.

Head administrator Narendra Modi reported the augmentation of lockdown in whole nation for 19 days from April 15 to May 3. So as to forestall the spread of COVID-19 in Ahmedabad, Chief Minister Vijay Rupani chose to force time limitation in three hotspot zones - Danilimda, Jamalpur and Dariyapur of Ahmedabad from 6:00 AM of April 15 to 6:00 AM of April 21. Ahmedabad Municipal Commissioner Vijay Nehra said that Ahmedabad Civic Body has prepared the India's biggest COVID-19 Care Center in Ahmedabad with an ability to suit 2000.



Graph 3: Trend of new cases, recovered cases and death of Maharashtra (till 31st May 2020)



Graph 4: Distribution of Active cases, Recovered cases and deaths of Maharashtra (Till 31st May 2020)

Graph 1 and Graph 2 depicts the trend of the cases and proportion of the cases, Gujarat have high case fatality rate, but recovery rate is also good. the outcome ratio (OR) and recovery ratio (RO) are 10.46% and 170.37% respectively.

RAJASTHAN

In Rajasthan, the first case was accounted on 2nd March 2020 in Jaipur. The health department of Rajasthan bulletin affirmed a sum of 8831 cases, including 194 deaths and 6,032 recoveries till 31st May 2020. All regions in the state have revealed affirmed instances of which, Jaipur is the most exceedingly awful influenced.

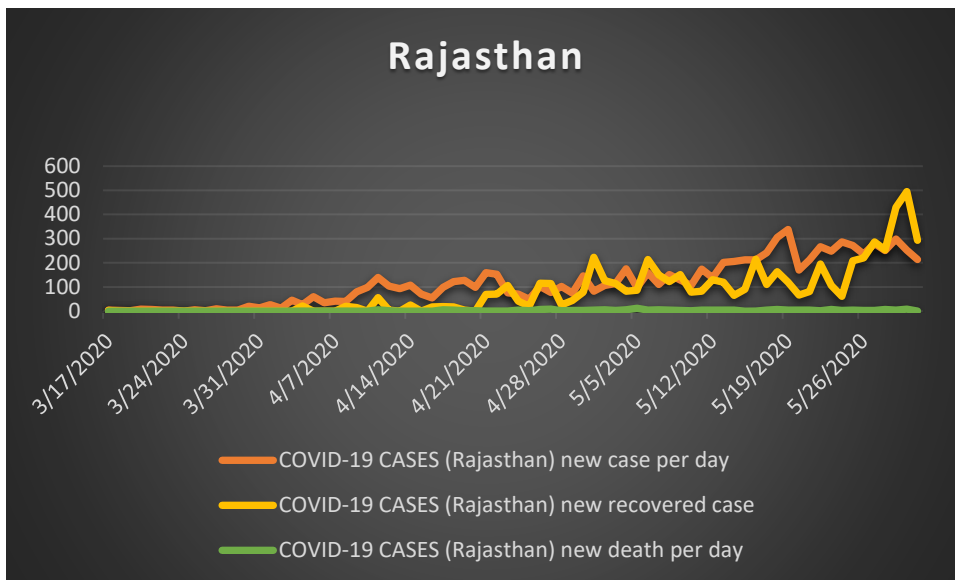
Section 144 was imposed in Rajasthan on 19th March 2020 which confined the gathering of 5 people to prevent the spread of disease. All the security staffs check the temperature of travellers who are coming by international flights and isolate those who have identified some symptoms for 14 days.

Rajasthan is the first state who announced complete lockdown from 22 March 2020, except essential things. In between 22-24 march, the govt first restricted all the public transports and then private vehicles. They announced two months free ration for beneficiaries under the NFSA. The government decided to give financial assistance of 50 lakhs to COVID-19 worriers i.e. health workers, sanitation workers, policemen and other hospital staffs who died due to COVID-19.

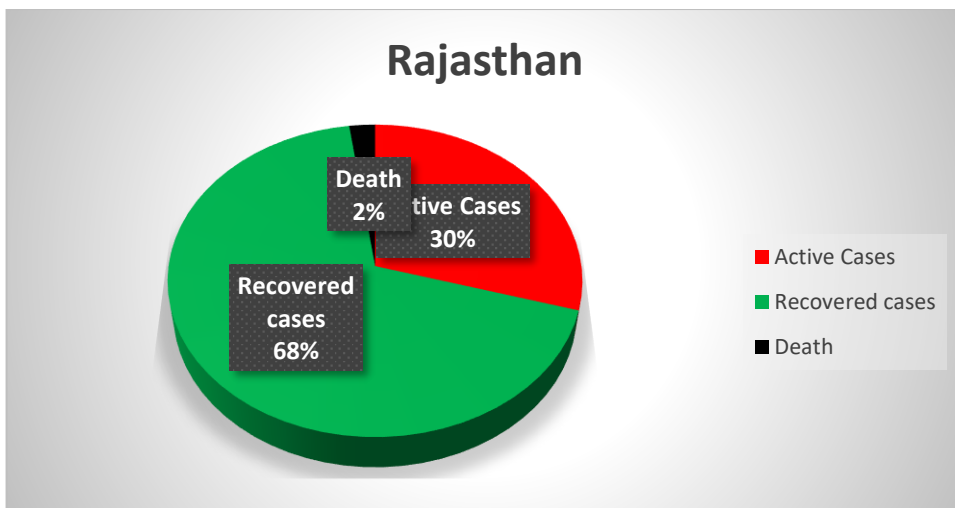
Ministry of Health & Family Welfare were decided to divide the districts in three phases on the basis of the situation, Rajasthan have 8 red zones (Highly containment zone), 19 orange zone (moderate) and 6 green zones (free zone).

Rajasthan government prepared the guidelines for rules and regulations for lockdown 4.0 in the state. The movement of people were restricted between 7:00 Pm to 7:00 Am for non- essential things. All shops except containment zones could open, with states of social separating and just two to five clients permitted at once. The cafes, sweet shops and restaurants can open only for home delivery, no one were allowed to dine in the premises. Cabs and taxi were allowed with a rule of 1+2 in orange zone and green zone. 2/3 staffs were allowed to work in shops in orange zone and ½ staffs allowed in red zone.

On 31st May, Government decided to extend the lockdown till 30th June with more relaxations except containment zones.



Graph 5: Trend of new cases, recovered cases and death of Rajasthan (till 31st May 2020)



Graph 6: Distribution of Active cases, Recovered cases and deaths of Rajasthan (Till 31st May 2020)

Graph 5 and Graph 6 depicts the trend of the cases and proportion of the cases, Rajasthan have highest recovery rate of among states and more than the country, Rajasthan combat this pandemic very well. The outcome ratio (**OR**) and recovery ratio (**RO**) are 3.22% and 231.55% respectively.

DELHI

The first case of the Coronavirus pandemic was reported in the national capital region on March 2nd. The approximate calculation of the COVID-19 disease would be infected people reported as of 15 June 2020 is 42,829 consisting of 1,400 deaths and 16,427 recovery.

March 12th, CM Shri. Arvind Kejriwal announced COVID-19 as a pandemic which made the Epidemic Diseases Act, 1897 relevant in this region. Schools, universities, and multiplex were instructed to stop their operations till March 31st. Government instructed all the workplace administrators and shopping malls which must be hourly disinfected to lower the spread of disease. Kejriwal asked the citizen to avoid social and mass gathering.

On 16th March, Delhi Government restricted the crowding of more than 50 peoples including, religious places, political rallies, educational institute, sports and etc. On 21 March, the restriction was on more than 5 individuals.

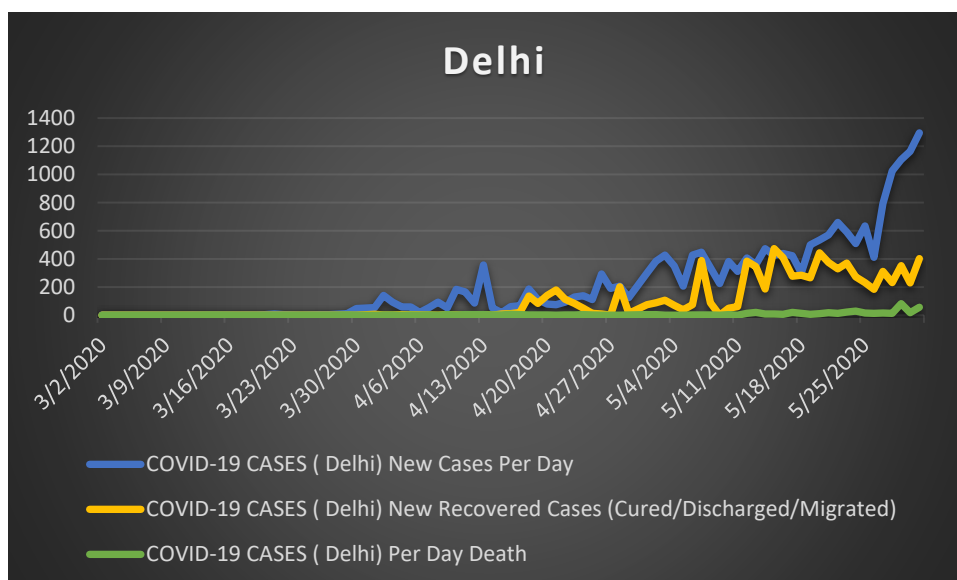
CM Shri. Arvind Kejriwal instructed that from March 23rd to 31st, all household/worldwide flights showing up to Delhi would be suspended.

CM Kejriwal had imposed lockdown from March 23rd to 31st. Only the essential service was kept operational in the national capital region and rest were closed. Adjoining borders with this region were sealed and only allowed trucks of essential goods to enter NCR. CM Kejriwal declared that individuals who do not have ration card can also avail free proportion from reasonable value shops.

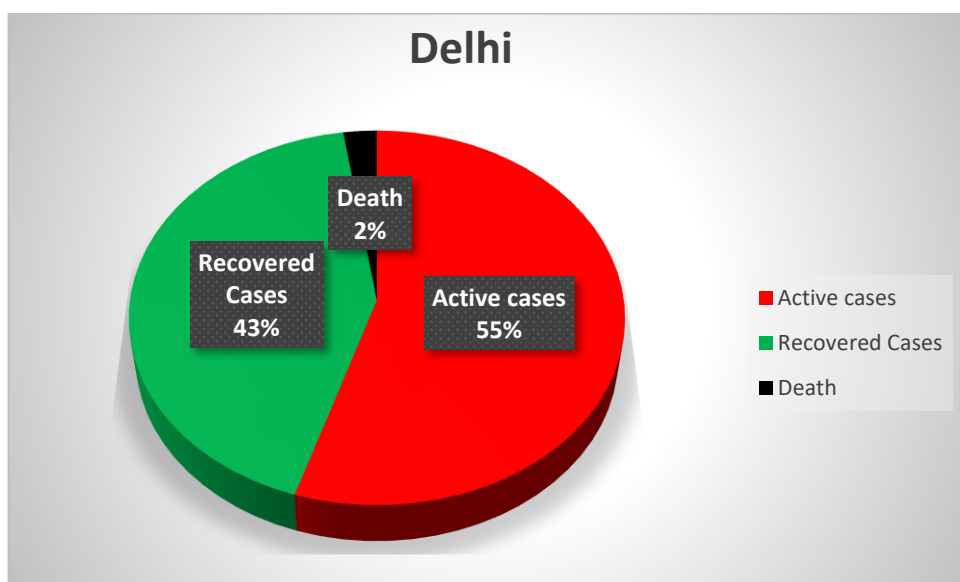
On April 5th out of approximately 71 lakhs ration card holders in Delhi, it was accounted for that 60% had got proportion. As estimated from the government records it has been observed that 50-60 thousand who does not have ration cards have also applied for coupons to avail the service of food items like sugar, rice, and wheat for free of cost. A few people have complained about the mismanagement of the ration service and CM asked all the MLA's to address this issue and help the needy with the daily bread. Issuing of e-coupons for rations was also started. From April 13th the government has started the sanitizing drive across the region. On April 14th, PM expanded lockdown till May 3rd, 2020 after proposal from a few state governments. On 21 April, since 38 lakh individuals who do not have ration card applied for proportion, Govt will give free proportion to 31 lakh individuals. CM announced that all the MLA and MP from the NCR will get food coupons respectively, which could be distributed amongst the citizens of the Union Territory.

Later, Delhi Government had given some unwinding during lockdown period, in following administrations, for example, Health care, Inter and intra state development for social insurance staff including via air if essential, cover homes (for senior residents, down and out, ladies, exceptionally abled), administrations without anyone else utilized individual for family unit need like circuit repairman, handyman and so on, looks for electric fan and textbooks. All these unwinding for the zones which isn't announced as control zone.

As one-time budgetary assistance, Delhi govt had declared to help influenced transport specialist organization like Auto, E-Rickshaw, Rural Vehicle and Gramin Seva of Delhi Rs 5,000/- each to their financial balance who will apply with their present driving permit of Para-Transit vehicles and legitimate identification. Delhi CM had reported a money related help of Rs 1 crore for the group of any perished wellbeing staff who had died while managing coronavirus cases in Delhi. He had referenced them as "at the very least warrior" and this help as tribute to their honourable assistance.



Graph 7: Trend of new cases, recovered cases and death of Delhi (till 31st May 2020)



Graph 8: Distribution of Active cases, Recovered cases and deaths of Delhi (Till 31st May 2020)

Graph 7 and Graph 8 depicts the trends and proportion of the cases, Delhi have higher no of active cases but lower no of deaths which shows lesser fatality rate, the outcome ratio (**OR**) and recovery ratio (**RO**) are 5.5% and 77.8% respectively.

MADHYA PRADESH

The main instances of the COVID-19 pandemic in Madhya Pradesh were affirmed on 20 March 2020. These were the initial four cases in Jabalpur, Madhya Pradesh. Madhya Pradesh has affirmed an aggregate of 8,089 cases, including 350 deaths and 4,842 recoveries, reported as on 31st May 2020.

Lockdown Stage 1 (25 March – 14 April)

There is a restriction of people to come out their home without any essential work. All vehicle administrations – roads, trains and air were restricted with special cases for transportation of basic merchandise, fire, police, and crisis administrations. Instructive organizations, modern foundations and friendliness administrations were likewise suspended. Administrations, for example, food shops, banks and ATMs, petroleum siphons, different basics and their assembling are excluded. The Home Ministry said the any individual who neglects to follow the limitations can look as long as a year in prison.

Stage 2 (15 April – 3 May)

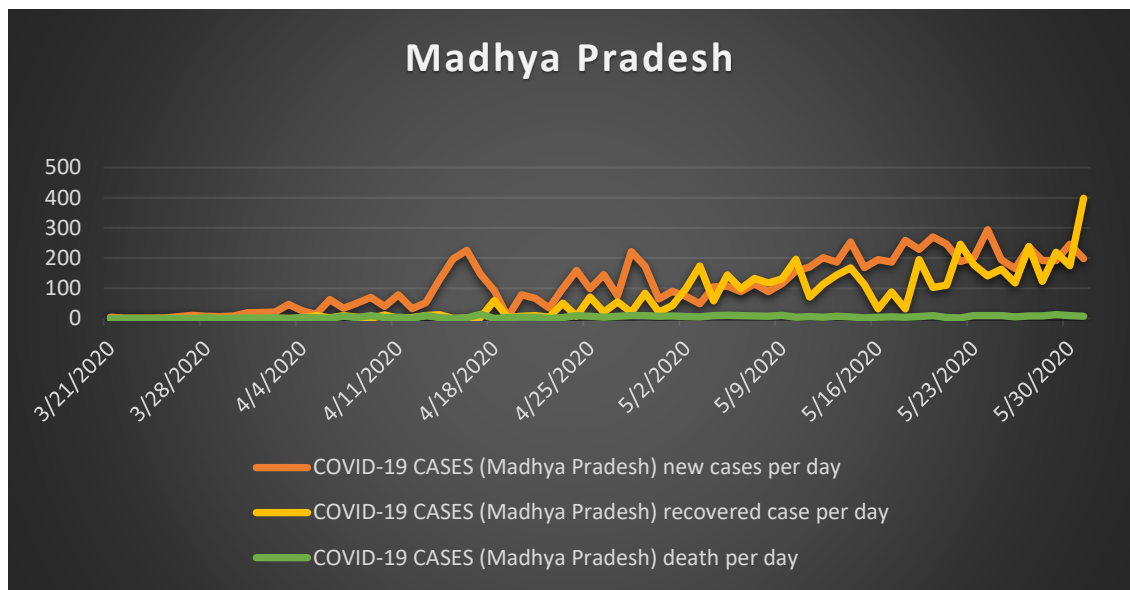
The nation leader, Prime minister while tending to the country, declared that the across the nation Lockdown which should end on 14 April 2020 has now been reached out to 3 May 2020.

Stage 3 (4 May – 17 May)

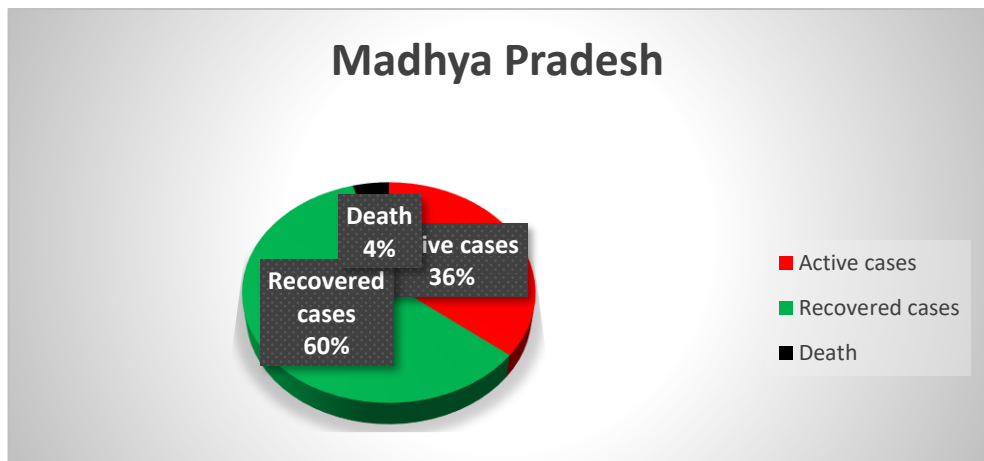
On 1 May, the Ministry of Home Affairs (MHA) and the Government of India (GOI) further stretched out the lockdown time frame to about fourteen days past 4 May, with certain relaxations.

Stage 4 (18 May – 31 May)

On 17 May, the National Disaster Management Authority (NDMA) and the Ministry of Home Affairs (MHA) broadened the lockdown for a period for about fourteen days past 18 May, with extra relaxations.



Graph 9: Trend of new cases, recovered cases and death of Madhya Pradesh (till 31st May 2020)



Graph 10: Distribution of Active cases, Recovered cases and deaths of Madhya Pradesh (Till 31st May 2020)

Graph 9 and **Graph 10** depicts the trends and proportion of the COVID-19 cases in Madhya Pradesh, while Madhya Pradesh have less no of cases and recovery rate is also good, but fatality rate is 4%, the outcome ratio **(OR)** and recovery ratio **(RO)** are 7.22 % and 167.14% respectively.

UTTAR PRADESH

In Uttar Pradesh, the first case was detected in Ghaziabad on 4th March 2020. The state has 8,075 confirmed cases, resulting in 217 deaths and 3,015 recoveries as on 31st May 2020. Case fatality rate in the state stands at 3.05%.

UP government issued a notice for closure of all the college institute, cinemas, malls, pools, gym, and tourist place till 2 April. The authorities in each districts were told to create an strategy to aware the community about viral sickness and restricted the peoples in holy places.

CM Yogi Adityanath declared 1000 rupees help monthly for daily wage worker who were suffered due to pandemic on 21st March 2020. UP government reported the lockdown of fifteen districts from 22-25th March 2020 including Agra, Lucknow, and others.

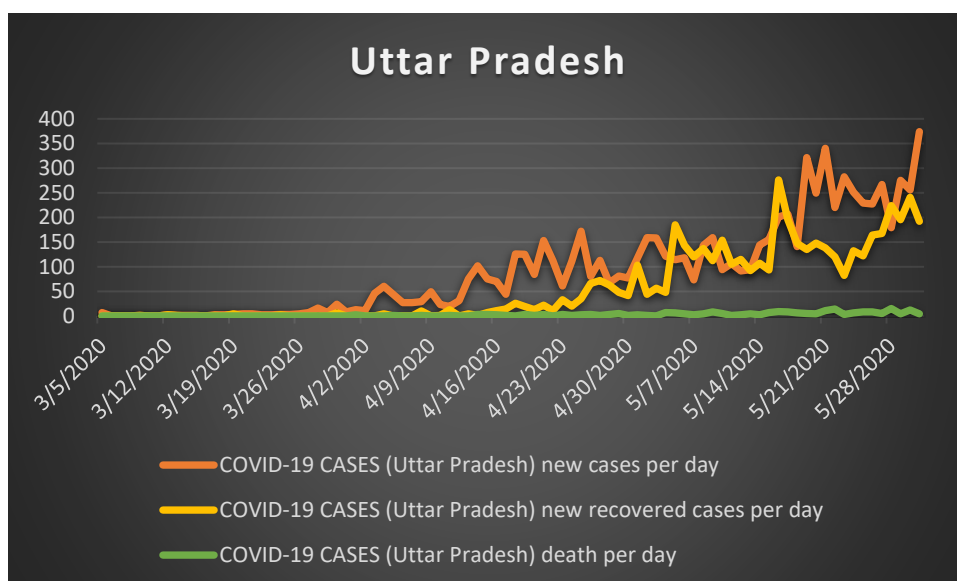
The government official arranged 1000 buses for ferry labourers who were standing out on the borders owing to a country-wise lockdown and absence of food in their shelters on 28th March 2020. After that, the state government also arranged buses for 9000 students who were residing in Kota for their education on 18th April 2020. 250 buses were arranged and only 30 students were allowed to sit in a single bus after thermal screening.

UP Chief minister told their officials to add 52000 beds in the COVID-19 Hospitals in state, which was latterly explained by additional chief secretary, he explained the division of beds into two departments, First 17000 by health department in three type of hospitals i.e. 10,000 beds in level one which are simple isolation beds for mild symptoms patients, and 5000 beds for second level, in which the oxygen kit will be fitted with the beds and lastly 2000 ventilator beds for tertiary care. Secondly, 35000 beds were in the hand of medical educational department in a row of 20,000, 10,000 and 5,000 beds in level one, two and three.

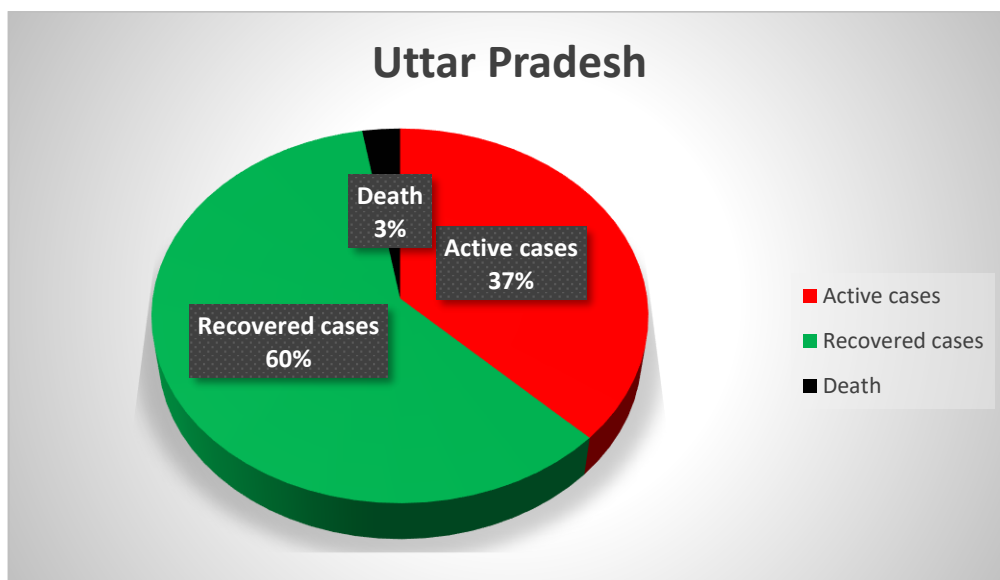
On 1 May, Uttar Pradesh CM Yogi Adityanath coordinated that any specialist or worker of UP who is abandoned in another state because of lockdown, can utilize his/her apportion card number and profit its advantages there. The individuals who do not have an apportion card, at that point under State Disaster Response Fund (SDRF), food bundles are being given. He said that anybody from another state who is abandoned in UP can enrol on 'JANSUNWAI' entryway to look for help. "Individuals from UP abandoned in different states can get themselves enrolled,"

The chief secretary UP informed that around 23 lakhs migrant worker have been taken back to their native places with the help of shramik trains till 24th May 2020 and around 225.39 crores were sent to Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) recipients through direct bank move.

The Uttar Pradesh government has concluded that showing up flight travellers should follow 14-day isolate at their own homes. On 6th day of home isolate, flyers can get themselves tried and end the isolate. Business explorers with return ticket inside 6 days will be excluded yet will not be permitted to enter control zones.



Graph11: Trend of new cases, recovered cases and death of Uttar Pradesh (till 31st May 2020)



Graph 12: Distribution of Active cases, Recovered cases and deaths of Uttar Pradesh (Till 31st May 2020)

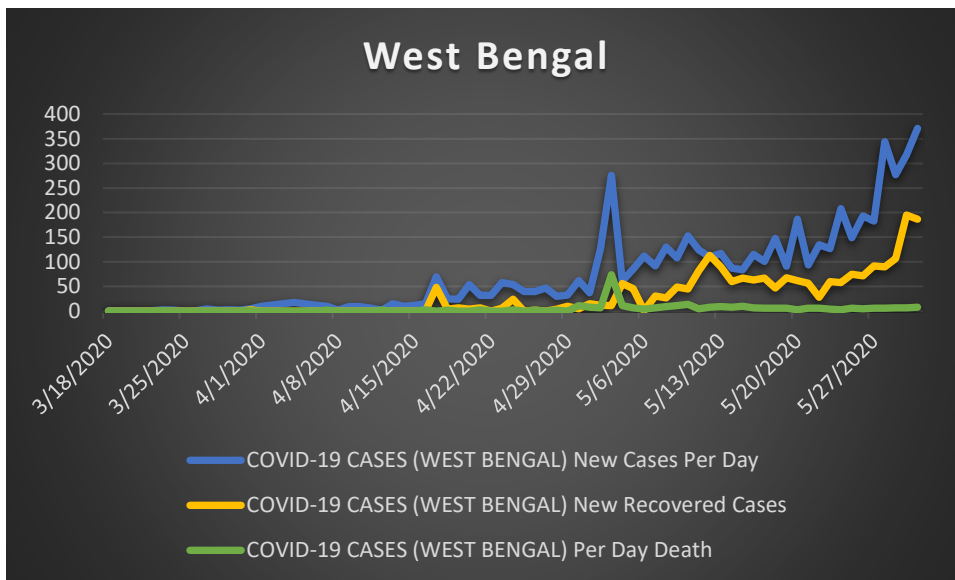
Graph 11 and Graph 12 depicts the trends and proportion of the COVID-19 cases in Uttar Pradesh, while Uttar Pradesh have less no of cases and recovery rate is about to 60 %, and the fatality rate is not as much high (3%), the outcome ratio **(OR)** and recovery ratio **(RO)** are 4.48% and 160.63% respectively.

WEST BENGAL

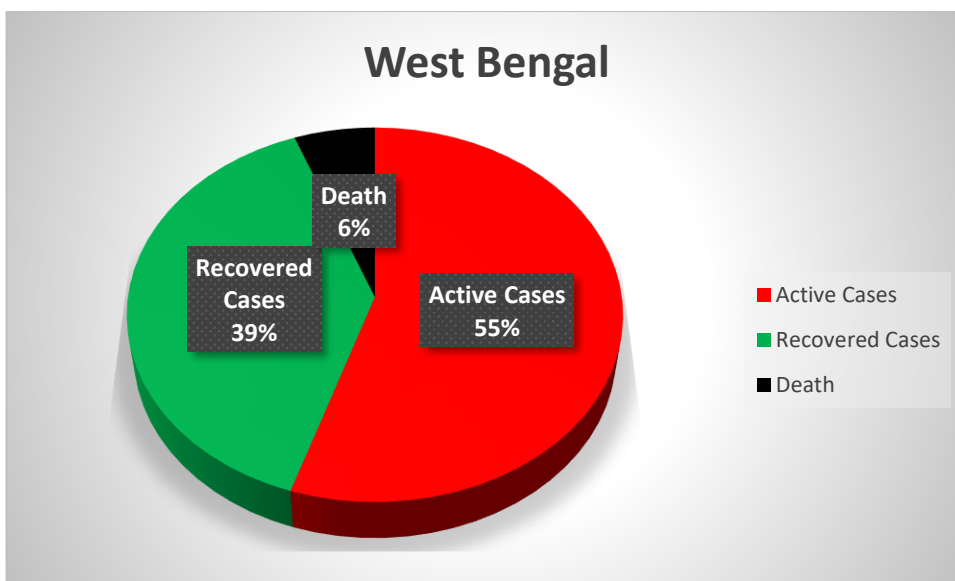
In West Bengal, the first cases were detected in Kolkata on 17th March 2020. The Health and Family Welfare branch of Government of West Bengal has affirmed an aggregate of 5501 COVID-19 positive cases, including 3,027 active cases, 317 Deaths and 2,157 Recoveries, reported as on 31st May 2020

On 14 March, Government of West Bengal declared that all schools, universities, and colleges in the state will stay shut till 31 March, in the perspective on developing circumstance on the spread of COVID-19. State government ventured up its safeguard with boss clergyman Mamata Banerjee reporting the conclusion of instructive organizations till 15 April. She said that even ICDS would be shut till 15 April and two kilograms of rice and potatoes would be sent to the youngsters straightforwardly so the dinners can be cooked at home. The administration has commanded an incomplete work-from-home framework for 7.9 crore individuals who get sponsored proportions. The CM guaranteed that legislature will give free proportion to the poor till September.

West Bengal CM Mamata Banerjee reported Monday that the state government is making a Rs 200 crore reserve to manage the effect of COVID-19. Whole West Bengal was brought under lock down till 31st May. West Bengal Government changes over Medical College and Hospital, Kolkata, for separation of individuals suspected with Coronavirus. West Bengal government issues request to specialists of each locale to set up impermanent courses of action of asylum and food to transients and poor.



Graph 13: Trend of new cases, recovered cases and death of West Bengal (till 31st May 2020)



Graph 14: Distribution of Active cases, Recovered cases and deaths of West Bengal (Till 31st May 2020)

Graph 13 and Graph 14 depicts the trends and proportion of the COVID-19 cases in West Bengal, while West Bengal have less cases, but the recovery rate of the cases is very poor less than the country proportion i.e. 39% and the case fatality is more than country rate i.e. 6% the outcome ratio (**OR**) and recovery ratio (**RO**) are 14.69% and 71.25% respectively.

COMPARISON BETWEEN SEVEN STATES:

Comparing these seven states there are some parameters which differentiate the states situation of the COVID-19

1. **Recovery rate:** Recovery rate is defined as the total no of recovered patients COVID-19 to the total no of cases of COVID-19

$$\text{Recovery rate} = \frac{\text{Total no of recovered patients of COVID-19}}{\text{Total no of cases of COVID-19}}$$

2. **Case Fatality rate:** It is defined as the total no of death due to COVID-19 to the total no of cases of COVID-19.

Case Fatality rate = Total no of recovered cases of COVID-19/
Total no of cases of COVID-19

3. **Outcome ratio:** It is defined as the ratio of Total no of Deaths of COVID-19 to the total no of Recovered cases of COVID-19. The lower in number, the better in situation.

Outcome ratio: Total no deaths of covid-19/ Total no of recovered cases of COVID-19

4. **Recovery ratio:** It is defined as the ratio of Total no of Recovered cases of COVID-19 to the total no of Active cases of COVID-19. The more in number, the better in situation.

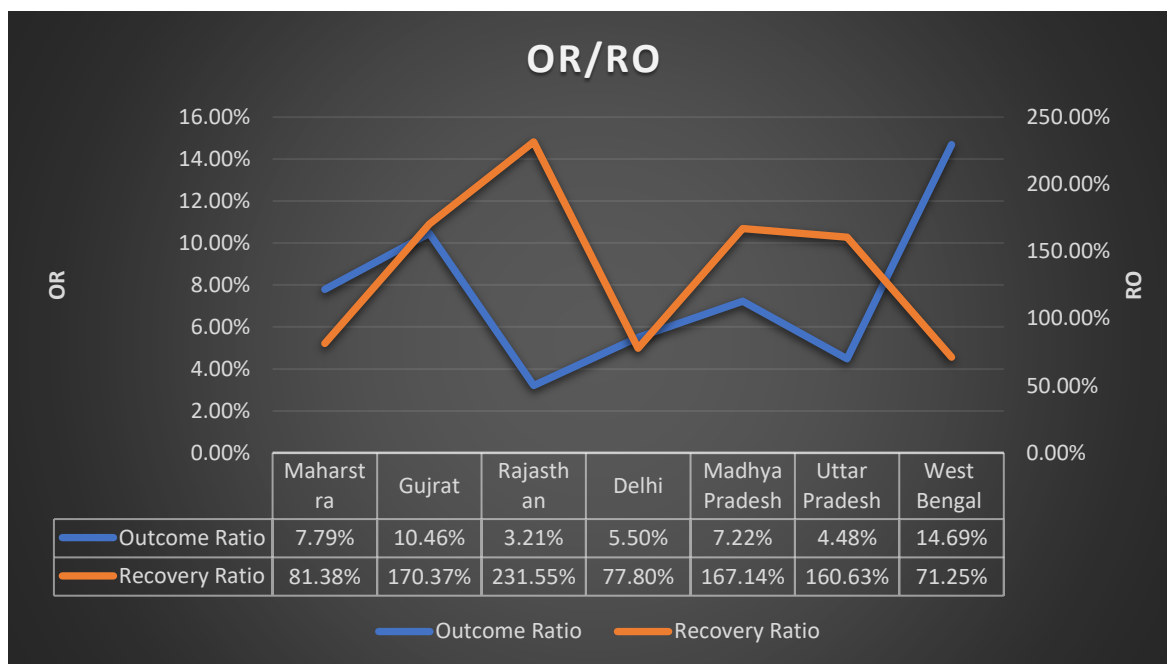
Recovery ratio: Total no Recovered cases of covid-19/ Total no of active cases of COVID-19

Table 1: Parameters of Seven States

Parameters	Maharashtra	Gujarat	Rajasthan	Delhi	Madhya Pradesh	Uttar Pradesh	West Bengal
Total Population	11.42 crore	6.27 crore	6.89 crore	1.9 crore	7.33 crore	20.42 crore	9.03 crore
Date of First case detected	2 nd March 2020	19 th March 2020	2 nd March 2020	2 nd March 2020	20 th March 2020	5 th March 2020	17 th March 2020
Total COVID-19 Cases Till 31 st may	67655	16779	8831	19844	8089	8075	5501
Total COVID-19 Active cases Till 31 st may	36041	5822	2605	10893	2897	3015	3027
Total COVID-19 Recovered cases Till 31 st may	29329	9919	6032	8478	4842	4843	2157
Total COVID-19 Deaths Till 31 st may	2285	1038	194	473	350	217	317
Recovery rate till 31 st may	43.35%	59.11%	68.30%	42.72%	59.86%	59.97%	39.21%
Fatality rate Till 31 st may	3.37%	6.18%	2.19%	2.38%	4.33%	2.68%	5.76%

Recovery ratio (recovered cases to active cases) in %	81.38%	170.37%	231.55%	77.8%	167.14%	160.63%	71.25%							
Outcome ratio (deaths to recovered cases) in %	7.79%	10.46%	3.21%	5.5%	7.22%	4.48%	14.69%							
Total Affected districts	35-40	33	33	11	41	75	20							
Total Red zones	12	9	15	11	9	19	6							
Total Orange zones	16	19	12	0	19	36	10							
Total Green zones	5	5	4 +2 blue zn	0	24	20	7							
Total testing labs (including RT-PCR, True Nat, CB NAAT)	72G 54P	33G 23P	25G 10P	22G 32P	73G 9P	118G 20P	38G 17P							
Total test till 31 st may	4.58 Lakhs	2.38 Lakhs	4.96 Lakhs	2.62 Lakhs	1.95 Lakhs	3.71 Lakhs	2.59 Lakhs							
Test per million till 31 st may	4200	3700	8702	14523	2100	1826	3152							
Highly Affected city	Mumbai	Ahmeda bad	Jaipur	All Districts	Indore	Agra	Kolkata							
Allocation of funds to this crisis	CM Relief Fund Covid-19	CM Relief Fund (CMRF)	RAJ CMRF COVID-19 MITIGATION FUND	Lt. Governor/CM Relief Fund	CM Relief Fund	CM Distress Relief Fund-COVID CARE FUND	West Bengal State Emergency Relief Fund							
Lockdown 1.0 23 march to 14 April (OR, RO)	OR	RR	OR	RR	OR	RR	OR	RR	OR	RR	OR	RR	OR	RR
	68.72%	11.52%	47.45%	10.47%	7.4835%	17.35%	96.77%	2.06%	82.81%	10.25%	16%	8.30%	233.3%	2.5%
Lockdown 2.0 15 April to 3 May (OR, RO)	25.91%	20.51%	27.83%	25.43%	5.23%	92.94%	43.61%	4.69%	19.54%	42.37%	5.70%	40.80%	75.30%	17.7%

Lockdown 3.0 4 th May to 17 May (OR, RO)	15. 58 %	31.8 1%	14. 64 %	72. 31 %	4.28 %	15 1.5 3 %	3.5 %	77. 74 %	10. 32 %	103 .33 %	4.2 4%	153. 61%	24. 81 %	64.7 9%
Lockdown 4.0 18 th May to 31 st May (OR, RO)	7.7 9%	81.3 7%	10. 46 %	17 0.3 7 %	3.21 %	23 1.5 %	5.5 %	77. 82 %	7.2 2 %	167 .13 %	4.4 8%	160. 63%	14. 69 %	71.2 5%



Graph 15: Comparison of seven states in respect of Outcome ratio (OR) and Recovery ratio (RR)

Interpretation: In the comparison of the seven states with respect to outcome ratio and recovery ratio, West Bengal is the state which have highest outcome ratio, and Rajasthan is the state which have lowest outcome ratio, while Rajasthan is the state which have highest Recovery ratio and the West Bengal have lowest RR. By this Graph, Rajasthan is the state which combat the COVID-19 situation very excellently because they have less OR that means, the no of deaths in the state is low and high RR which means the recovery of the patients in the state is very high.

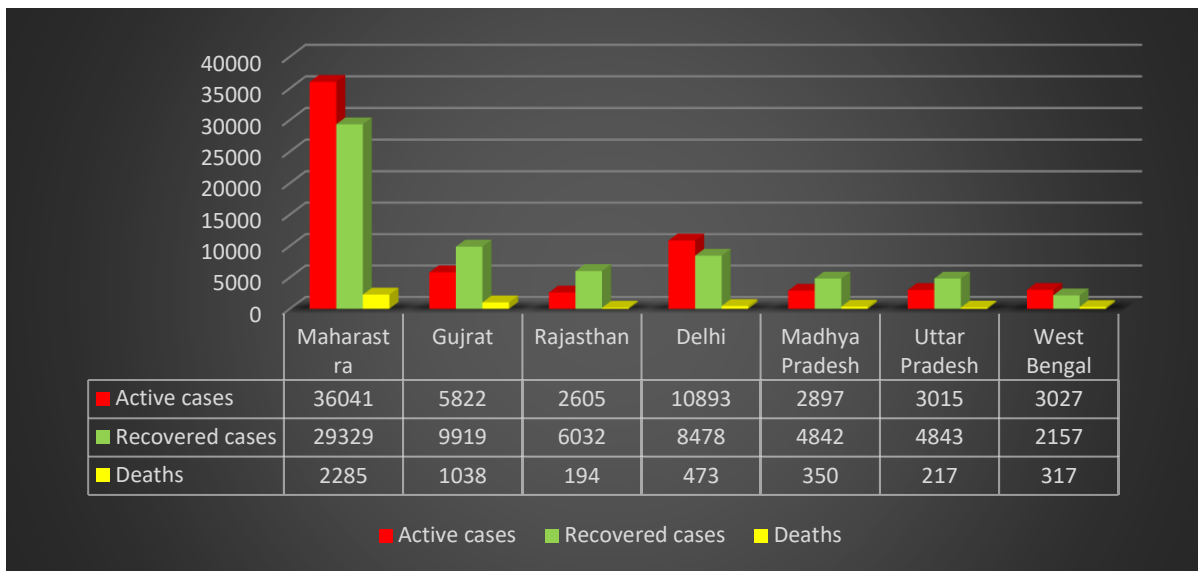
The order of states:

In terms of OR (in increasing order)

Rajasthan < Uttar Pradesh < Delhi < Madhya Pradesh < Maharashtra < Gujarat < West Bengal

In terms of RR (in decreasing order)

Rajasthan > Gujarat > Madhya Pradesh > Uttar Pradesh > Maharashtra > Delhi > West Bengal



Graph 16: Comparison of seven states in respect of Active cases, Recovered cases and Deaths. (till 31st May 2020)

Interpretation: Graph 16, shows the cases of COVID-19 in seven states in respect of Active cases, Recovered cases and Deaths. Maharashtra is highly affected state which have highest no of active cases and also highest no of deaths while Rajasthan is the state which have lowest no of active cases and lower deaths as well.

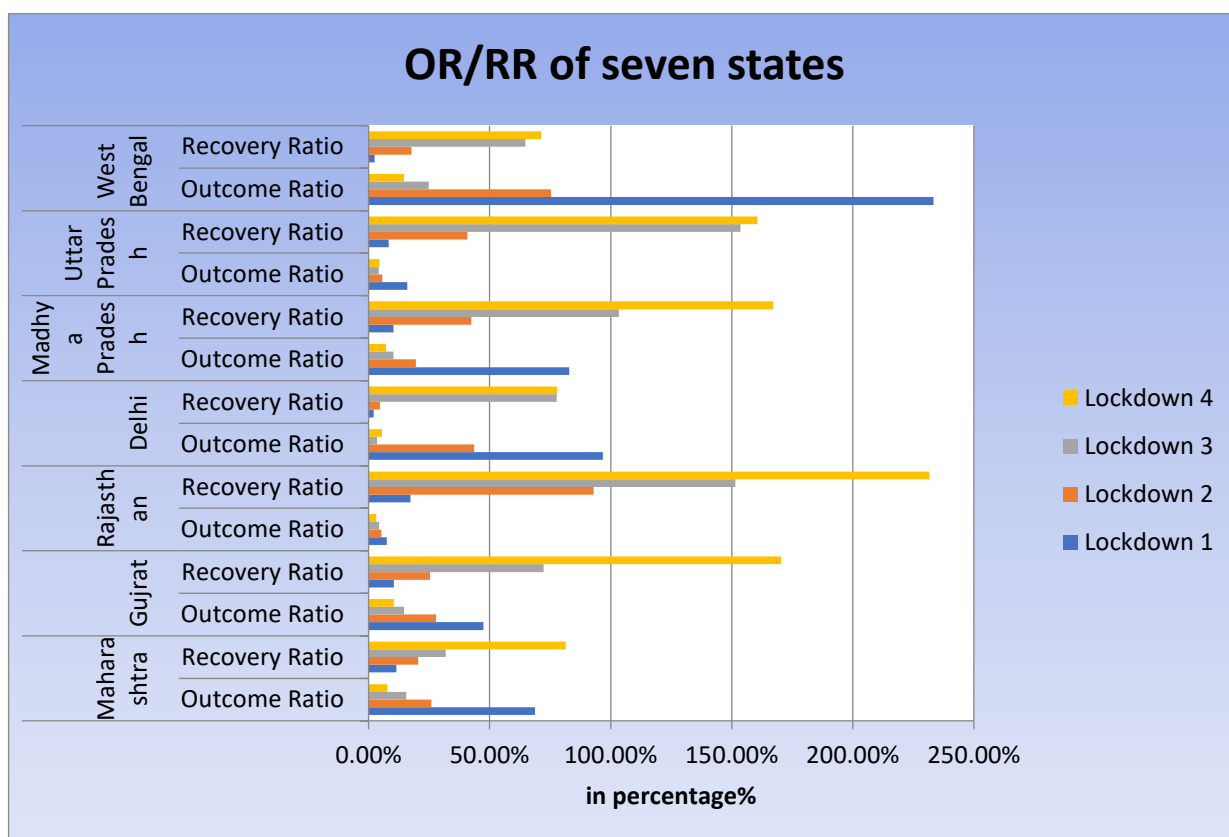
Order of Cases

In terms of active cases:

Maharashtra > Delhi > Gujarat > West Bengal > Uttar Pradesh > Madhya Pradesh > Rajasthan

In terms of deaths:

Maharashtra > Gujarat > Delhi > Madhya Pradesh > West Bengal > Uttar Pradesh > Rajasthan



Graph 17: Comparison of seven states with respect of OR and RR in four phases (lockdown 1.0, lockdown 2.0, lockdown3.0, lockdown 4.0).

Interpretation: Graph 17 depicts the outcome ratio and recovery ratio of seven states in four lockdowns, In first lockdown the outcome ratio of every state is high and the recovery ratio is low while in lockdown 4.0, it get reverse the recovery ratio is high and outcome ratio is high. In lockdown 1.0 West Bengal is the state which have highest Outcome ratio and lowest recovery ratio and Rajasthan is the state which have highest recovery ratio and lowest outcome ratio.

Lockdown 1.0

In terms of OR

Highest

Lowest

West Bengal > Delhi > Madhya Pradesh > Maharashtra > Gujarat > Uttar Pradesh > Rajasthan

In terms of RR

Highest

Lowest

Rajasthan > Maharashtra > Gujarat > Madhya Pradesh > Uttar Pradesh > West Bengal > Delhi

Lockdown 2.0

In terms of OR

West Bengal > Delhi > Gujarat > Maharashtra > Madhya Pradesh > Uttar Pradesh > Rajasthan

In terms of RR

Rajasthan > Madhya Pradesh > Uttar Pradesh > Gujarat > Maharashtra > West Bengal > Delhi

Lockdown 3.0

In terms of OR

West Bengal > Maharashtra > Gujarat > Madhya Pradesh > Rajasthan > Uttar Pradesh > Delhi

In terms of RR

Rajasthan > Uttar Pradesh > Madhya Pradesh > Delhi > Gujarat > West Bengal > Maharashtra

Lockdown 4.0

In terms of OR

West Bengal > Gujarat > Maharashtra > Madhya Pradesh > Delhi > Uttar Pradesh > Rajasthan

In terms of RR

Rajasthan > Gujarat > Madhya Pradesh > Uttar Pradesh > Maharashtra > Delhi > West Bengal

CONCLUSION:

Every state combats their COVID-19 fight with their own ways of precautionary measures and rules & regulations. In comparing of these seven states, the finding suggested that, Rajasthan was the pioneer state in recovery ratio and outcome ratio, while West Bengal was weakened in both the ratios. States took all the precautionary measures to be pioneer, but Rajasthan took in a best way like Bhilwara model and testing ratio was also high. As compared to the cases Maharashtra had highest no. of cases with highest mortality rate. In a period of lockdown1 and lockdown2, Delhi had lowest recovery rate and Rajasthan had highest in all the lockdown period. In end of lockdown 3, Maharashtra had lowest recovery rate because the rate of increasing the case in the state were fast and Mumbai was highly affected with Dharavi case. West Bengal was the consistent state in all the lockdown who have highest Outcome ratio i.e. highest death to recovered cases and in lockdown four, the recovery ratio was very low. The main reason of West Bengal poor results was of not following the guidelines of social distancing, lockdown, awareness among citizens and poor health sanitization.

RECOMMENDATION'S:

- All the states should strictly follow guidelines which were set by the Ministry Of Health And Family Welfare and World Health Organisation for precautionary measures and quality of care and implement the guidelines in the state.
- Implement Awareness program in the society by means of IEC and BCC for hand hygiene and precautionary measures for COVID-19.
- Maintaining Social distancing in the essential areas such as the banks, religious places, parks and crowded places for prevention of further spread.
- Follow the P process that would be the Analyse, Design, Implement, Monitoring and Evaluation of the program.

REFERENCES:

1. Coronavirus Pandemic in India 2020 Wikipedia.
Available from: https://en.wikipedia.org/wiki/2020coronavirus_pandemic_in_India
2. Coronavirus Pandemic in Maharashtra 2020 Wikipedia.
Available from: https://en.wikipedia.org/wiki/COVID-19_pandemic_in_Maharashtra
3. Coronavirus Pandemic in Rajasthan 2020 Wikipedia.
Available from: https://en.wikipedia.org/wiki/2020_coronavirus_pandemic_in_Rajasthan
4. Coronavirus Pandemic in Gujarat 2020 Wikipedia.
Available from: https://en.wikipedia.org/wiki/COVID-19_pandemic_in_Gujarat
5. Coronavirus Pandemic in Delhi 2020 Wikipedia.
Available from: https://en.wikipedia.org/wiki/COVID-19_pandemic_in_Delhi
6. Coronavirus Pandemic in Madhya Pradesh 2020 Wikipedia.

Available from: https://en.wikipedia.org/wiki/COVID19_pandemic_in_Madhya_Pradesh

7. Coronavirus Pandemic in Uttar Pradesh 2020 Wikipedia.

Available from: https://en.wikipedia.org/wiki/COVID19_pandemic_in_Uttar_Pradesh

8. Coronavirus Pandemic in West Bengal 2020 Wikipedia.

Available from: https://en.wikipedia.org/wiki/COVID-19_pandemic_in_West_Bengal

9. COVID-19 Dashboard by Ministry of Health and Family Welfare, Government of India. [cited 2020 May 22].

Available from: www.covid19india.org

10. Red, Orange, Green Zone district-wise list for coronavirus lockdown: Complete classification of areas in India" India Today [Cited 2020 May 22] Available From: <https://www.indiatoday.in/india/story/red-orange-green-zones-full-current-update-list-districts-states-india-coronavirus-1673358-2020-05-01>

11. "List of Private Laboratories to test COVID-19 by Indian council of medical research [Cited 2020 May 22]

Available at: https://www.icmr.gov.in/pdf/covid/labs/COVID_Testing_Labs_24052020.pdf

12. Total Operational (initiated independent testing) Laboratories reporting to ICMR [Cited 2020 May 22]

Available From: https://www.icmr.gov.in/pdf/covid/labs/COVID_Testing_Labs_24052020.pdf

13. India Fights Corona Covid-19 by Government of India. 2020. [cited 2020 May 22]. Available from:

<https://www.mygov.in/covid-19/>

14. Ministry of Health and Family Welfare, Government of India.

Available from: <https://www.mohfw.gov.in/>

15. Coronavirus disease (COVID-19) Pandemic, Emergency; World Health Organisation.

Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

ANNEXURE:

Graph 1	Trend of new cases, recovered cases and death of Maharashtra (till 31 st May 2020)
Graph 2	Distribution of Active cases, Recovered cases and deaths of Maharashtra (Till 31 st May 2020)
Graph 3	Trend of new cases, recovered cases and death of Maharashtra (till 31 st May 2020)
Graph 4	Distribution of Active cases, Recovered cases and deaths of Maharashtra (Till 31 st May 2020)
Graph 5	Trend of new cases, recovered cases and death of Rajasthan (till 31 st May 2020)
Graph 6	Distribution of Active cases, Recovered cases and deaths of Rajasthan (Till 31 st May 2020)
Graph 7	Trend of new cases, recovered cases and death of Delhi (till 31 st May 2020)
Graph 8	Distribution of Active cases, Recovered cases and deaths of Delhi (Till 31 st May 2020)
Graph 9	Trend of new cases, recovered cases and death of Madhya Pradesh (till 31 st May 2020)
Graph 10	Distribution of Active cases, Recovered cases and deaths of Madhya Pradesh (Till 31 st May 2020)
Graph 11	Trend of new cases, recovered cases and death of Uttar Pradesh (till 31 st May 2020)

Graph 12	Distribution of Active cases, Recovered cases and deaths of Uttar Pradesh (Till 31 st May 2020)
Graph 13	Trend of new cases, recovered cases and death of West Bengal (till 31 st May 2020)
Graph 14	Distribution of Active cases, Recovered cases and deaths of West Bengal (Till 31 st May 2020)
Graph 15	Comparison of seven states in respect of Outcome ratio (OR) and Recovery ratio (RR)
Graph 16	Comparison of seven states in respect of Active cases, Recovered cases and Deaths. (till 31 st May 2020)
Table 1	Parameters of Seven States

Online Course Draft Report

Course Title: eHealth: More than just an electronic record.

Hours: 15hrs

Website: Coursera

Organisation: THE UNIVERSITY OF SYDNEY.

Course Mentor: Tim Shaw

Course Description:

This course caters to one of the major topics about healthcare. This course focuses on the eHealth. eHealth is one of the most important subjects that we are looking upon today as well as in the future because it would be one of the most nurtured fields in the future of our country. It is one of the factors which is influencing change in the delivery pattern of our healthcare system. It doesn't only focus on the electronic medical records and few health apps but also, vibrantly encouraging this system into our health system would drastically change with reduced time and cost for the people residing in the rural areas to avail superior health service.

Course Objective:

- Analyse meanings of eHealth from both health consumers and experts.
- Perceive an eHealth model that outlines how key eHealth areas meet to effect on healthcare services.
- Form a knowledge into the major standards of eHealth.
- Assess your attention to eHealth in current practice.
- Decipher the current and future difficulties of eHealth for both health consumers and professionals.

Course Contents:

The course was further divided into Modules and the entire course consists of 5 modules with assigned 3hrs per module where the details about the past, present, and the future description about the structure were presented. I will quickly jot down all the modules and the submodules that were there in this course.

- Module 1 (What is eHealth?)
- Module 2 (Health in our Hands)
- Assignment guide and peer review (40% weightage)
- Module 3 (Data and "Quantified Self")
- Module 4 (Interacting with Health Professionals using New Technologies)
- Assignment guide and peer review (60% weightage)

Methodology:

The course provided learning through video lectures and PowerPoint presentations which was presented by Prof. Tim Shaw, an eHealth specialist from Faculty of Health Sciences, The

University of Sydney, and many more health professionals from that region working with the university for the development of eHealth service.

The lectures presented using data sets, graphs, theories which enables a superior understanding. The data used are authentic and taken from sources such as surveys done by the university along with the different healthcare providers and with the public entities and how it can provide a seamless service to all the healthcare consumers.

At the end of every session, was a set of questions that must be attempted to understand the concept better. The course consists of reading materials that were provided, at the end of every session/module. At the end of module 2 and 5, a graded quiz/assignment was assigned, that need to be completed. The required pass percentage mostly was 80% combined. It was based on the practical implementations of lectures and reading material.

Key Learnings from the Course:

➤ What is eHealth?

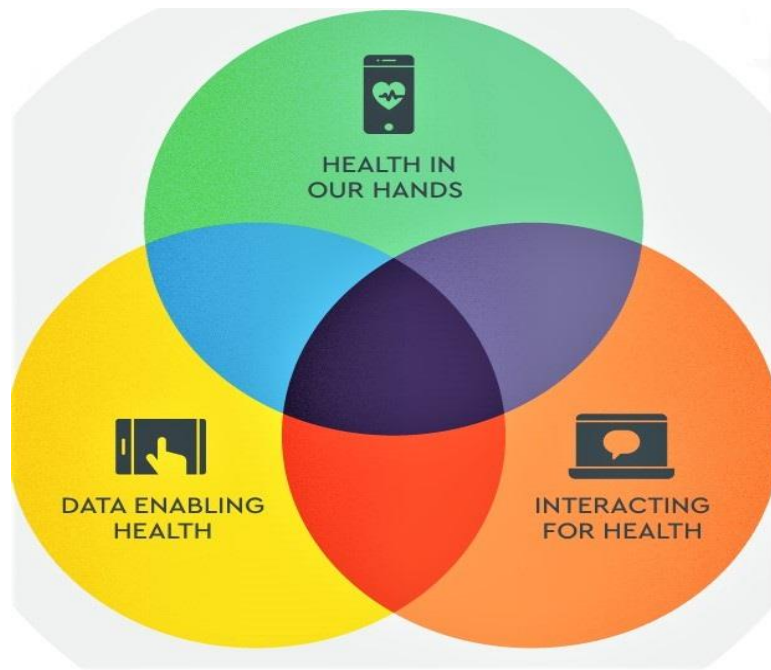
eHealth is a vast term and refers to the use of facts and communications technologies in healthcare. Surely eHealth is already impacting the manner we supply healthcare. However, we are simply at the beginning of a revolution in phrases of what which means for the manner care is delivered. But we have a very blunt idea about electronic health i.e. electronic medical records and few devices attached to it, but this is not the real story. One of the fastest emerging areas of eHealth is that how are we making the utmost use of technology to support the communication between the healthcare providers and consumers. In healthcare developing countries like us, we should ply this sort of technology to reduce the time taken and scaling up the service provided.

Nowadays we are surrounded by the ideas of the various digital platforms via the internet, why not taking advantage of this situation. We can do this by mobile phones and the internet, the idea can give birth to a new set called “Health in Our Hand”. This would include the various programs such as the use of apps, websites, social media, and wearable devices.

Now comes what are the advantages of eHealth. I will jot down some very quickly

1. It is exciting because it encourages us to provide the utmost care to our consumers/patients by empowering all individuals from the care group to have access to patient information wherever they are and at whatever time.
2. eHealth is considered to be the oxygen of health as it is very prevalent in health research and implementation of healthcare services.
3. eHealth is about the use of new technologies to create new models of care. So, here we can see how technology is enabling a new delivery of health services, health efficiencies, and overall improvement to health quality.
4. There is so much untapped potential in eHealth in our country (India) that there is a huge scope for development in the near future because of dense geography of our country.

A Model for eHealth



From the course I have learn that there are 3 overlapping demands

1. Health in our Hands
2. Interacting for Health
3. Data enabling Health

We have identified the 3 domains, first, we are going to take up the first dot that would be the Health in our hands, this includes the growing demand for the wearable devices, apps, social media and internet which helps us to monitor and report health and wellness, and gives us free access to it whenever we want. Secondly, it is the impact of the new growing technology, how the patients and the healthcare providers or the caregivers communicate amongst each other. So, these are referred to as tele-health, which is more than video consulting, it caters to curative care too such as coaching and professional support to maintain good health. Thirdly, the data enabling health where our reach is till the electronic medical record, but the data goes beyond that such as the Big Data, Genome data, and many sorts of data including the demographic data.

Now, if you look at the diagram, you see all the three-circle intersecting each other and forming a point in the “Deep Purple” colour, it is known as the “Sweet Spot” and that is the most important area of the eHealth model. All the developments regarding this model need to be initiated and processed in this spot because any

programme developed will create great maximum health impact keeping all 3 domains together.

Challenges and Future

So, now let us talk about the challenges and the future about the emerging eHealth concepts. I have purposely kept both these topics together because I think these two factors are directly dependent to each other. So now I will point out some challenges about the model

1. **Implementation:** The biggest challenge about this project would be the factor of how to introduce the idea to the table and to carry on with the process without having any sort of glitches and problem as this would be a very technology-driven task.
2. **Cultural Change:** This would also bring the cultural change amongst the healthcare delivery platform, which would be a very difficult task for those people who are not technology- driven. Also, bringing such changes can bring some resistance to change in the organization.
3. **Training & Education:** The whole new concept about the practice needs to be inculcated in the syllabus of the graduates and the professionals so that the process would become very easy to handle and the students would become highly skilled in using it and being able to adapt to what we are expecting in the future.
4. **Profitability & Privacy:** One of the most challenging situations would be, when an entrepreneur is more concerned about the profitability index, rather than the development of such models then it would be very difficult to reach out to a large number. Secondly, while handling such cases in eHealth platform we have to be utmost careful about the medical records of our consumers. And the data that we would be having in our database or in any Big Data platform, any sort of breach/violation is found in this model, would be a complete failure and viable to face legal actions.

So, now we can discuss how the model looks like in the future and how it can make difference in the present market, where the healthcare delivery pattern is different both in provider and consumer point of view and what impact can it create.

1. **Consumer-driven Healthcare:** Nowadays we can see that there is a shift in the pattern of providing healthcare. In most parts of the globe we can see that there is a surge in the pattern of consumer- driven patterns of healthcare model, which brings up the scope of this model to be very efficient and reliable for the majority of the audience. Now, how can we make it to the utmost use? It can be done by developing e-tolls which would help them feed in their daily health data and which could be accessed by them and by their General Practitioner regularly

when needed. This would also bring the revolution in the healthcare system and would allow the consumers to use the healthcare service as per their ease and their need at any point of time without hindrance.

2. Tele-Medicine/Health: The term Tele-Medicine/Health when fully operational is going to bring a huge paradigm shift in the healthcare delivery model or services. The most important part of this model would be how to drive the idea of Tele-Medicine/Health with data, which would enable us to deliver the most efficient outcome of the service while sitting back home and getting a cure from diseases. Suppose, if we talk about the year 2020, we see such a huge spike in the COVID-19 pandemic that has made restrictions for few people from going out of home and some didn't go out due to fear. Don't you think that there wasn't any sort of medical need that any person didn't face in the world. That is the opportunity where Tele-Medicine/Health or eHealth with the help of Big Data would have helped and made us more conscious about the future model of this delivery pattern.
3. Enrolling: This is also one of the most important parts without which eHealth would fail to function would be enrolling. It would be necessary for all the citizen of a country to register under this scheme to avail the enhanced facility of care and can care about their wellbeing. It would be compulsory for the new-born baby to register or the healthcare provider to register under the system from Day 1 from which the baby's data should be recorded with a unique identity code.

➤ Health in Our Hand

Health in our Hands, as I have already given a brief about it in the earlier section. It has made the healthcare more convenient from the consumers point of view. Applications or apps, wearable devices, online health information and social media are all being used to motivate healthy behaviours and monitor existing conditions. We know that this is the fastest growing area of the eHealth model which has the potential to transform the healthcare industry and, On the other hand it's one of the least explored sites in this sector. We can also say that this is going to be the most booming sector of this industry in the coming time. Wearable devices and apps can be used for a wide range of purposes such as monitoring pulses and capturing those data into the database and displaying it to the consumer when needed. It can also combine all credentials and make a final report with the help of technology and present it to the consumers or the care providers so that the future line of treatment could be identified and taken. We will explore more about the wearable devices and apps in details in the upcoming sections. Now, we also have to keep in mind how this technology will help us to shift the pattern of healthcare delivery from curative to preventive manner, and here eHealth would be playing a very big role along with Health in our Hand, as consumers are not looking for healthcare, they are looking for good health.

Now I am going to explain the various ways of collecting data and what sort of data is being collected. Smartphone that we carry can collect ample amount of data such as the blood pressure, my pulse, weight, and BMI. These just need to be connected to their respective instruments and with the help of network connectivity, it will automatically be updated in the mobile apps. The list does not end here, there are many more data that are collected, for example your sleeping pattern data, jogging, running and cycling data such as how many miles did we do the activities and these are calculated using GPS and reflected in the health apps. These data are being collected using different devices such as FitBit, Apple watches etc. All these data when feed under one app with the help of technology, will form a dashboard full of information which later can be converted into report form for the ease of accessibility and development of the consumers health. And the difference between these two technologies at showing where new e-health paradigm is moving toward, a very personalized label of technology. Now another most important thing is the internet, it is the first point of call for most of the people to get information about what might be wrong with them and to make sure that they stay well. So, when we talk about the internet then how could we leave medical & healthcare blog, as this provides immense information to the user across the globe and it's so easy and accessible to everyone.

Designing and evaluating eHealth Solution

Designing any technological module of any programme relies solely upon the effectiveness of the interface that would be used by the health consumers. The interface should be in such a manner that the consumer is highly delighted, and it should meet what they want. The interface should also be clear and crisp to meet the clients demand. The interface should be continuously updated with the reference of the feedback from the consumers. Now, we have to keep in mind when we are developing such an interface which should not harm the psychological wellbeing of a consumer, as these will be used in their day to day life, and this phenomenon is known as the positive computing. We also must keep these factors in mind while developing the system such as the autonomy, compassion, competence, connectedness.

Next comes the most important part of the eHealth app that would be evaluating the app as we can see that there is an exponential growth in the recent years for the market of mobile health apps and the accuracy is must for delivering the best healthcare service. We truly need a solid and target instrument to rate the degree that mHealth applications fulfil quality standards. The scale or instrument should be straightforward and simple to use with negligible preparing. So, to assess this sort of apps there is a 23-item MARS tool. It demonstrates the great internal consistency along with excellent inter-rater reliability. Results too indicate that MARS is simple, objective, and reliable and it can be used as a tool for classifying and assessing the quality of mHealth apps. It can also provide a checklist for the design and development of new high-quality health apps.

You can go through the link how I have assessed an Indian provider with this MARS tool

<D:\OneDrive - IIHMR UNIVERSITY\Health\MARS-Scale-App-Classification-Young-and-Well- CRC Ayan Lahiri.pdf>

➤ Data and “Quantified Self”

Digitalizing paper record is very beneficial. It enables a patient's medical history to be tracked over time. To alert patients for routine or follow up consultations, to monitor patients' vital signs. And overall, to improve the quality of care. The impact that e-health is having on the delivery of healthcare right now is quite dramatic, and in some ways very disruptive. Because we are trying to figure out all sorts of questions in terms of confidentiality of the information that's being transmitted. And trying to figure out how to sift through that information. So, it is a blessing and in some ways a curse that we have more and more facility and ability to get information quickly.

Now, when we connect, hospital to hospital, state to state, patient information should be available across the entire network. This is great for patients as well as the care givers. So, in the future we will see state-wise and nation-wise archiving systems. That connect the pictures, the data, and the radiology results, so that no matter where the patient goes, their history follows them. There are many clinicians are really looking forward to the day when records and information is available electronically. And in real-time, be able to understand the situation of the patient sitting in front of them.

So, now let's talk about one of the important segments of the data that would be the privacy and it is the utmost important part. The data which are collected from the consumers or collected from Big Data needs to be assembled and kept in encrypted manner so that, at any cost breach shouldn't occur because we are dealing with one of the very fragile or delicate part of a human life. And we should ensure our health consumers that their data is secured with us and they do not need to worry about it and without their permission we will not allow this data to go off. So, to do these the advanced techniques of machine learning and data analytics should be used.

Now, why to collect so much of data? The collection of data is done because we need to ensure our consumers that they get a seamless service with the eHealth interface, making life easier for you and that helps us to develop our services as per our consumers need.

➤ eHealth and new technologies

eHealth and technologies can bring a huge change in the system of healthcare delivery system. Starting from the use of mobile devices to social media, starting from going to hospital or not going, your wellbeing would be the utmost important for the eHealth model. This model plays with the technology, algorithms, data and many more things. Using apps for doing consultations which helps to reduce the out of pocket expenditure and would be very economical for the developing countries. Health-centres with referral

polices should not send patients to some other hospitals rather arrange for a video consultation which would lead to ease of accessibility and quick relief to the patient in terms of need. This is how eHealth would take the future of the healthcare delivery pattern of the globe. All sorts of ups and downs needs to be addressed and should be ready for the healthcare delivery at the time of crisis.