APPROACHES TOWARDS COMBATING COVID 19 IN INDIA

SUMMER TRAINING

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INTRODUCTION

- The world was in the grip of a deadly virus, known as the noble corona virus, it became a threat to the world due to its contagious nature and long term harmful effects in human beings even including mortality in few cases.
- As the medical fraternity was struggling to find a cure for the virus, India being one of the populous country posed quite a lot of threat towards the virus.
- The country's challenges are many such as recognizing isolation wards, restricting the movement to reduce human to human spread, empowering hospitals with requisite PPEs, equipment, medicines and many other issues.
- Participation in implementation of the guidelines provided by the Government of India was equally relevant for the State government
- The way to win the war against the virus was the public health workers working along with the state and centre government, multisectoral coordination, good leadership, prompt surveillance and good infrastructure investment towards the public health.

OBJECTIVE

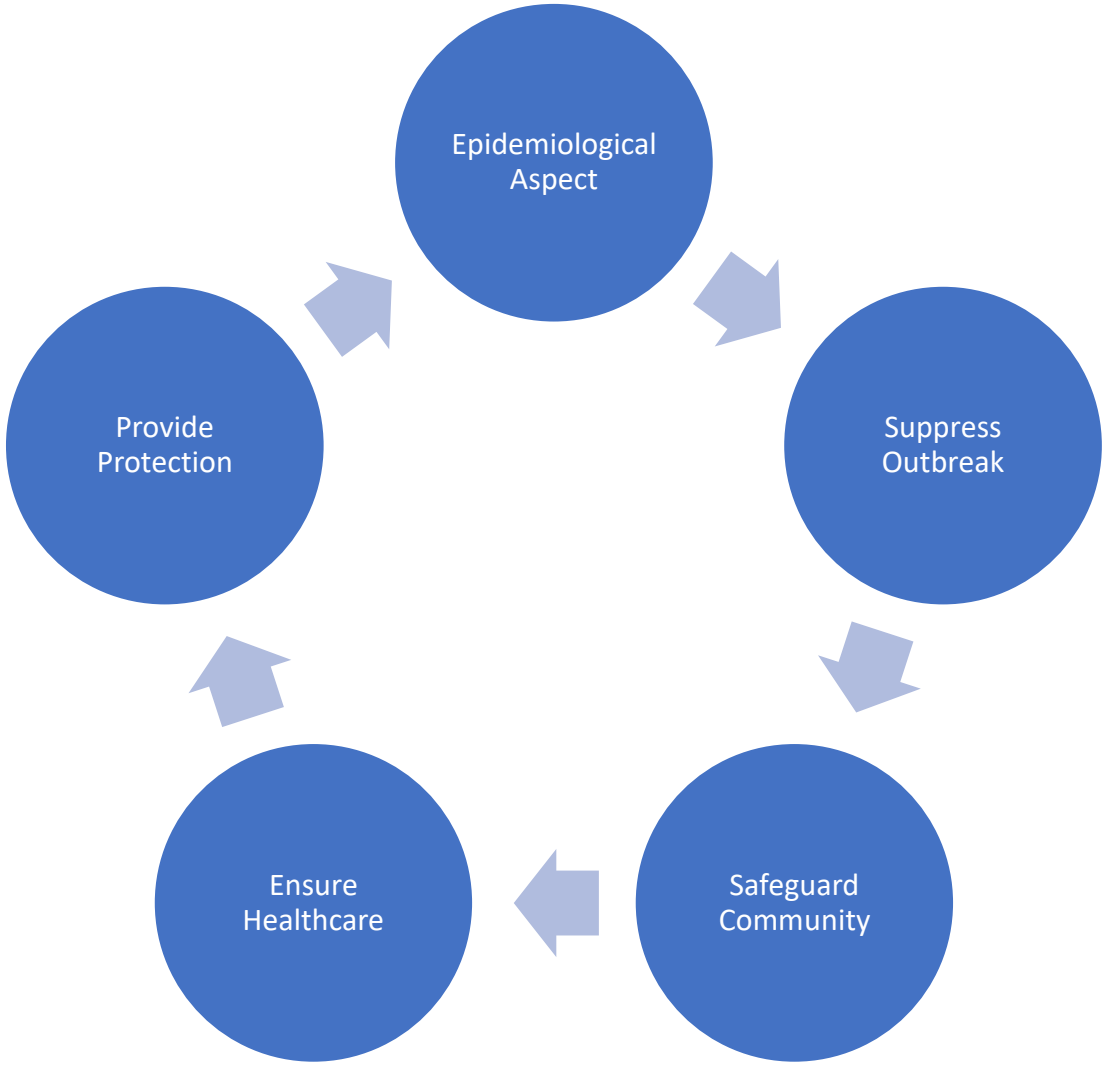
- Review Covid-19 progression in India from 30th January to 14th April 2020.
- Review efforts by the Government of India and State Governments to contain Covid-19.
- Identify best practices to suppress the spread of Covid-19.

METHODOLOGY

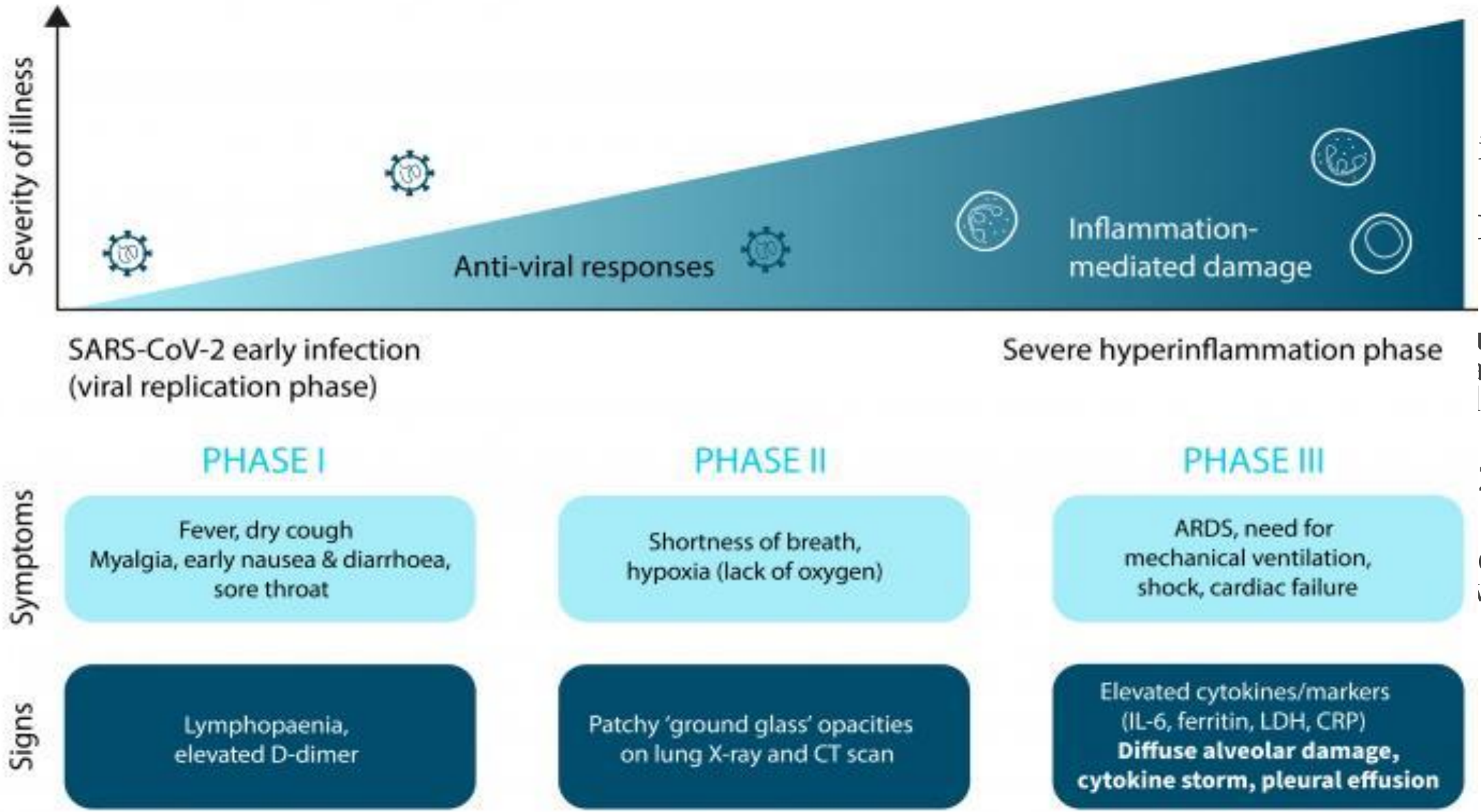
To conduct the study following steps were taken: -

- Step 1: Review the online and available information by using the keywords.
- Step 2: Data study to understand covid 19 progression.
- Step 3: Duration of the study period was decided as 30th January – 14th April 2020, based on the first case that came in India till the first lockdown announced by the GOI.
- Step 4: States in-depth were decided based on the availability of the information.
- Step 5: Indicators were based on progression of the pandemic, measures undertaken to address and to know about the covid-19 disease during a specific period.
- Step 6: The key indicators used for the study were causation of an outbreak of covid-19 in India, majorly affected states, steps taken by the various State Government to curb covid-19.

CONCEPUTAL FRAMEWORK



Growth and Severity of Covid 19 along with Signs and Symptoms



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PROGRESSION OF COVID 19 IN INDIA

State / Time Period	Kerala	Rajasthan	Uttar Pradesh	India
30th January – 14th February 2020	1	0	0	1
15th February – 29th February 2020	2	0	0	4
1st March – 15th March 2020	24	4	13	110
16th March – 31st March 2020	241	93	104	1,397
1st April 2020 – 14th April 2020	387	1076	735	11,933

EFFORTS TO CONTAIN COVID 19 IN INDIA

- The Government of India monitored the covid 19 cases since Jan 20 and its spread and progression towards and within the country.
- Many were steps taken by the Centre and State Government to contain the spread of covid 19.
- Certain steps the district magistrate took to control the covid-19 are listed as follows: -

Trace travel history and contacts of the covid 19 positive patient.

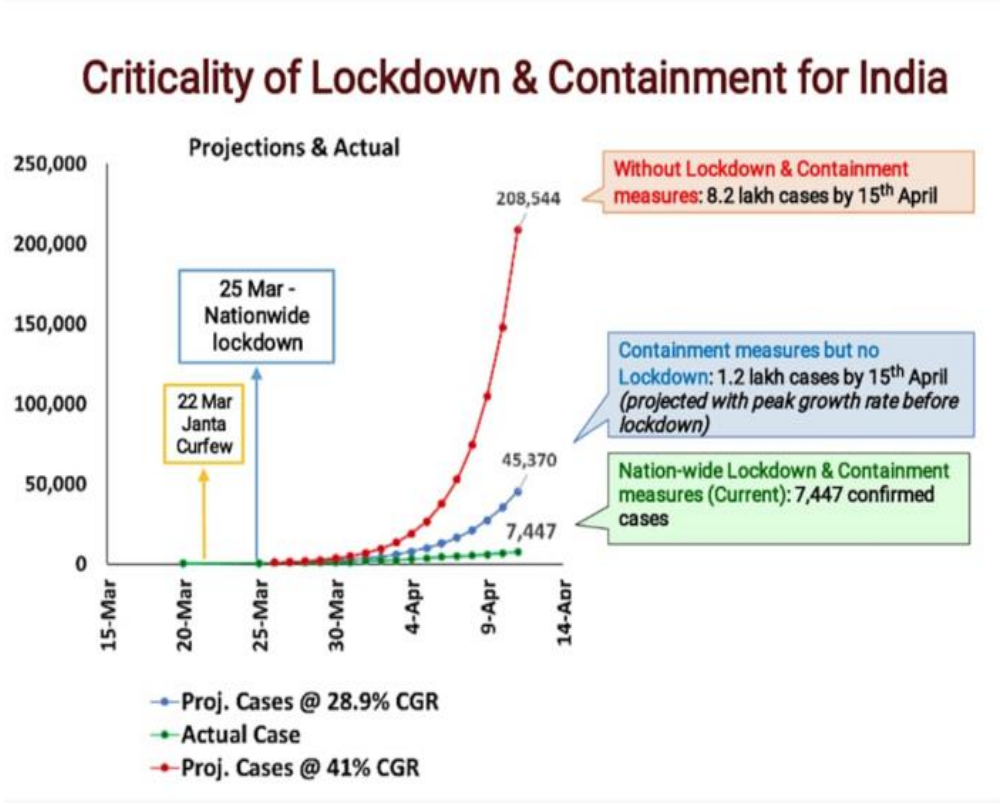
Declare strict curfew in containment zone.

Send patients family and contacts for testing.

Conduct door to door check in containment zone.

The area is sanitized with sodium hypochlorite.

Ensure supply of essentials in containment zone.

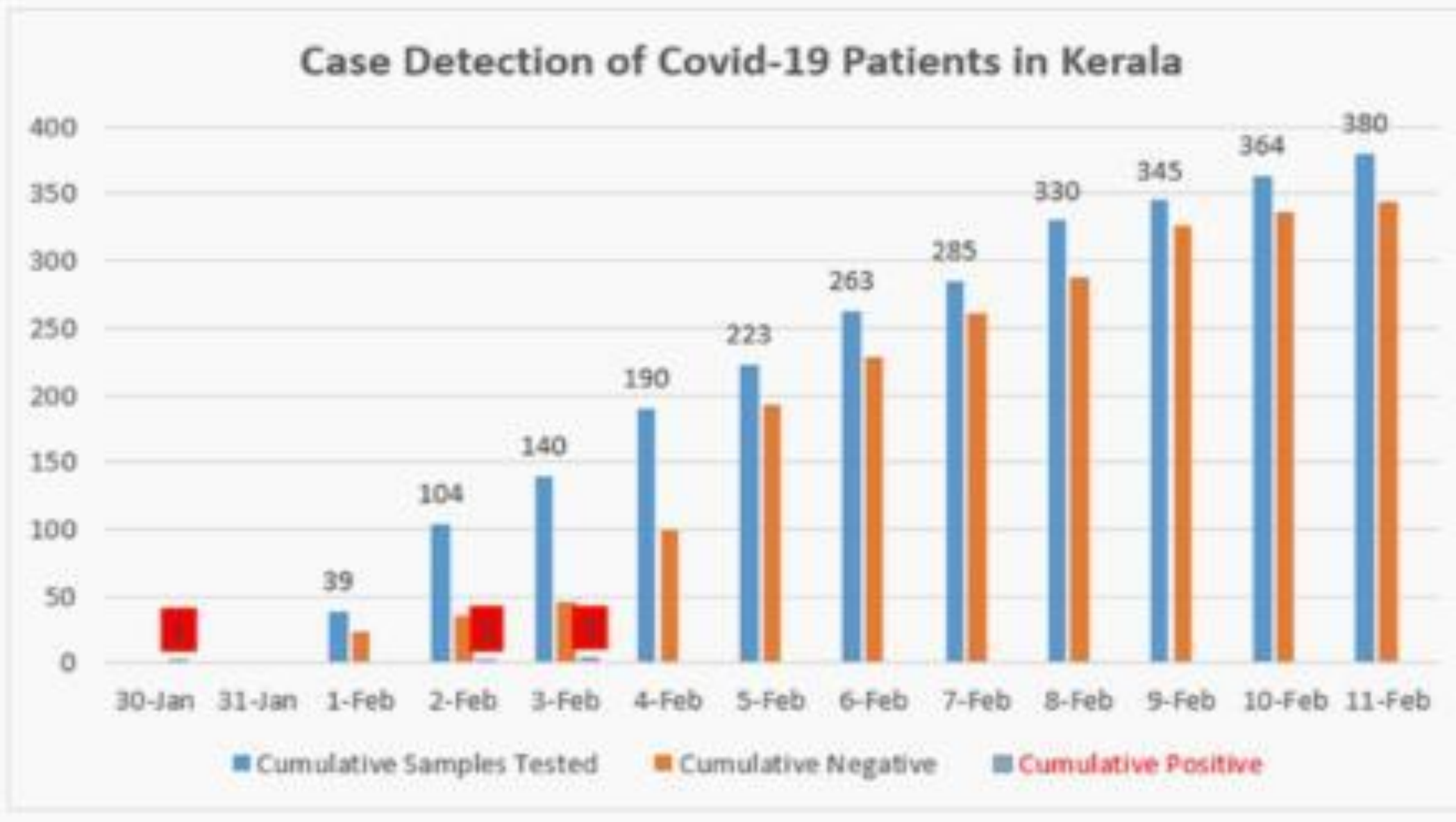


POPULAR MODELS TO DEAL WITH COVID 19

- The only way for the virus to be transmitted in India may have been for the people infected as and when they arrive in various state on India.
- Meanwhile the GOI has conducted various measures to protect the country against covid 19. the interventions include traveller inspection, nation lockdown followed by various containment measures.
- Kerala on 30th January 20, recorded the first case while the other states also formed the strategies to deal with the virus in the meantime.
- The measures taken by the Bhilwara district administration in Rajasthan have been very successful in coping with covid and have covered a lot of news.
- The Agra district is an important tourist destination in Uttar Pradesh, as it is Taj Mahal 's birthplace. The steps developed and implemented for the development of covid at Agra are therefore worth the effort.
- Hence the models of these three places are discussed in this study to analyse India's initial response in dealing with suppressing covid 19 spread.

KERALA MODEL

- The first case in India and Kerala was seen on 30th January 2020.
- Kerala has porous borders, numerous migrant workers and a large population of expatriates traveling back and forth. Kerala is better than other states in battle against coronavirus and in mitigating the difficulties by taking measures to control covid 19.
- Kerala initially had high number of cases compared to the other states and it was quite successful in flattening the curve when the other states were struggling to do the same.
- It followed a family route map, of the first person who contacted the disease and it also gave illustrations which allowed to know about peoples whereabouts .
- It started through a relatively high number of testing, scrutiny, surveillance, quick identification of the affected and infected cases, efficient isolation and quarantine measures and unfailing daily follow up.
- Route maps of virus carriers were prepared diligently, and contacts were traced and isolated or quarantined


Case Detection of Covid-19 Patients in Kerala
400
350
300
250
200
150
100
50
0
39
104
140
190
223
263
285
330
345
364
380
30-Jan
31-Jan
1-Feb
2-Feb
3-Feb
4-Feb
5-Feb
6-Feb
7-Feb
8-Feb
9-Feb
10-Feb
11-Feb
Cumulative Samples Tested
Cumulative Negative
Cumulative Positive

AGRA MODEL

- The Agra model came in to light in the early March 2020.
- Agra's first case was detected on 5th March 2020 in Ghaziabad district.
- Agra followed a localized yet massive combing operation for contacts, it was carried out by the district administration and Integrated Disease Surveillance Programme personnel.
- State district and frontline workers coordinated efforts lead to utilizing the existing smart city integrated with command and control centre as war rooms.
- Hotspots managed through active survey and containment plan.
- Agra identified area of radius 3 km from the epicentre as the containment zone and created an area of 5 km radius as buffer zone.
- The Agra district administration simultaneously worked on other fronts, such as ensuring distribution, chain management and transportation of essential commodities within and outside the city, along with providing food and shelter for the homeless and needy people through a helpline which also arranged animal feeding.

- The model had crucial approach which laid down, the area with high density of people, which had been the earliest case of community transmission.
- It was noticed that quarantine centres were spreading the infection, so the asymptomatic positive were kept under home quarantine .
- The administration arranged for more medical staff to be trained in covid, which resulted in less number of health workers getting infected by the virus and ultimately resulting a drop in the infection rate of Agra.
- Agra’s model was quite successful in combating covid 19 with a effective administration. Agra is a densely populated city and has accessibility to healthcare, still it did pose a few threats like breach of protocols, forgein tourists but it managed quite well.

BHILWARA MODEL

- Bhilwara was termed as the Italy of India due to its sudden outbreak in the number of cases.
- The first case was identified on 19th March 20, and within next three days there were around 27 cases of infection.
- The administration took immediate action to prevent the disease to reach its 3rd stage i.e. community transmission.
- It tackled the disease in three phases.
- A screening strategy was followed where surveys were carried with the specialists, foreign return travellers were screened, screening centres were established, areas were marked to avoid submission and omission, state borders were sealed, home quarantine centres were established.

Bhilwara's Model of tackling Covid 19 is a six -step strategy: -

- The first step was to isolate the district by imposing strict curfew, sealing the borders with check posts at entry and exist points, suspending all the essential services expect healthcare and police.
- The second step was mapping Covid 19 hotspots and keeping strict vigil to ensure zero movement.
- The third step, the local administration carried out door to door screening while identifying people with influenza like illness and sending health workers to visit them, twice daily.
- The fourth step, the administration implemented aggressive contact tracing while pacing all persons who came in contact with infected persons under strict home quarantine.
- The fifth step was increasing the quarantine facilities as the government facilities were unable to handle the strain of increased cases.
- The sixth step was to monitor the rural areas. the monitoring was increased in the rural areas as they tend to be more and expansive compared to urban areas
- In addition to this disinfection drive was conducted all over the town for several days.

CONCLUSION

- Covid-19 is highly contagious with harmful effect. The initiatives taken at an earlier stage was effective to control covid-19 progression.
- Three states Rajasthan, Kerala, and Uttar Pradesh, accounted for 40% of covid-19 cases in India, in the first 45 days.
- The effectiveness of actions by these states from 30th January to 14th April 2020, can be reviewed in context of factual figures.
- The state of Rajasthan in this period had tested a total of 42,578 number of people for covid-19, of these 1076 were found to be active cases, with 147 already recovered cases and 11 deaths, the doubling time in Rajasthan was 5 days.
- The state of Kerala in this period had tested a total of 16,430 number of people for covid-19, of these 387 were found to be active cases, with 218 already recovered cases and 2 deaths, the doubling time in Kerala was 18 days.
- The state of Uttar Pradesh in this period tested people for covid-19 and found 735 to be active cases, with 57 already recovered cases and 11 deaths, the doubling time in Uttar Pradesh was 6 days.
- It can be concluded that all the three models have been very much successful in formulating and implementing steps to combat the covid-19 disease.

EHealthcare
More than just an electronic record

E- HEALTH

- Technologies to support communication between healthcare provider & consumers.
- ‘‘e-health is an emerging field in the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the Internet and related technologies.’’
- The 10 E’s of E-Health
    1. Efficiency
    2. Enhancing
    3. Evidence-based
    4. Empowerment
    5. Encouragement
    6. Education
    7. Enabling
    8. Extending
    9. Ethics
    10. Equity

MODULE 1 AND 2

- **A Model of eHealth**
  1. Health in the hands of consumers (Wearable devices, apps, internet/ online health information & social media)
  2. Interacting with & between health professionals (Telehealth, shared care, Rehab, coaching, & professional support)
  3. Data records and quantified self (EMR, Big data, Genomics, Predictive & precision healthcare)
- **The Future**
  1. Consumer & Data driven healthcare
  2. Virtual Reality
  3. Reduced Administrative burden
  4. Personalised tailored service
  5. Connected Healthcare
  6. Health not Healthcare

- **Mobile-health or mHealth**
  - Includes apps, mobile devices & censors
  - Helpful in-
    1. Remote monitoring & data collection
    2. Disease and outbreak tracking
    3. Self-monitoring/ quantified self movement
  - Often used to measure
    - Calories burned
    - Oxygen saturation
    - Distance & terrain covered
    - Sleep cycles
    - Moods
  - In-app Emergency card with important health information
- **Social Media for health-** Blogs, social networking, collaborations, content communities
- **Online Health Information-** Health portals

MODULE 3 AND 4

- **Healthcare reformation-** link data from all the devices & apps used with mainstream data, stored & shared with healthcare professionals, organisations that deliver healthcare, patients, consumer of information.
  - Big data, Precision & predictive medicine, genomics
- **Data & digital Health records**
  - Digitalizing paper records
  - Real time, patient centred, efficiency
- **State-wide & nationwide archiving system-** Creation of a secure health network, which connects hospital to hospital, state to state where patient health information will be available across the network.

- **Improving access to healthcare-**
  - Telehealth
  - Electronic records supporting remote care
  - E-consultation
  - Virtual Reality
- **Three domains of health**
  1. Clinical practice/ decision making
  2. Quality improvement
  3. Professional development

CONCLUSION

It gave me a opportunity to understand:-

1. Identify digital health innovations, health data sources and health workforces changing positions in the digital health environment.

2. Understand key principles and terminology in health data including the importance of data privacy and stakeholder positions in the data life cycle

3. Using clinical data and an overview of basic data to inform and improve decision-making and practice.

4.Using efficient methods of health data exchange to promote healthy and high quality patient care.

THANK YOU