

Analysis of the Response of India and South Korea to contain COVID-19

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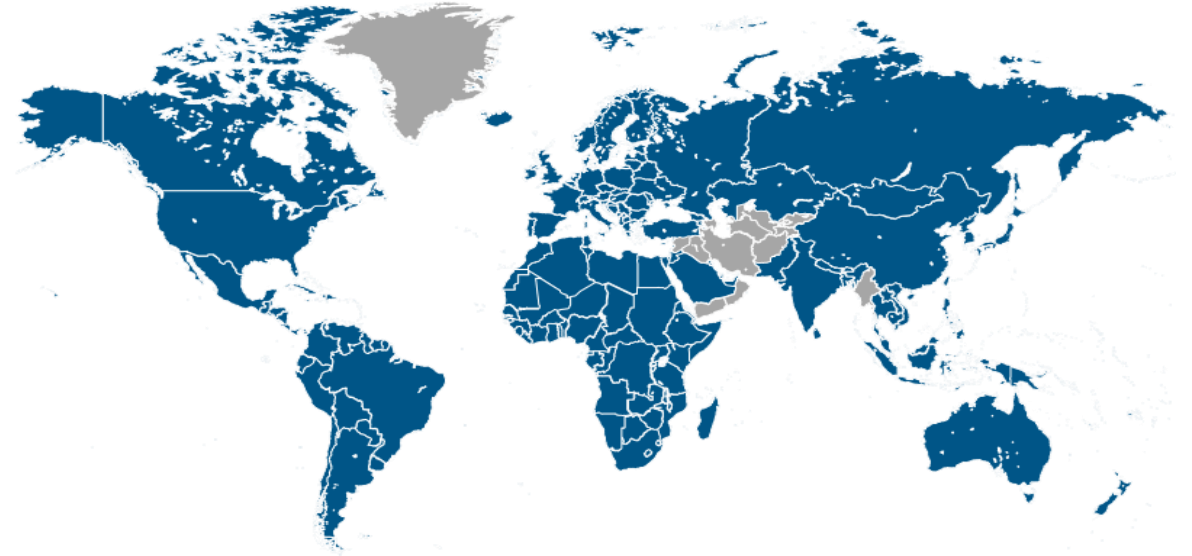
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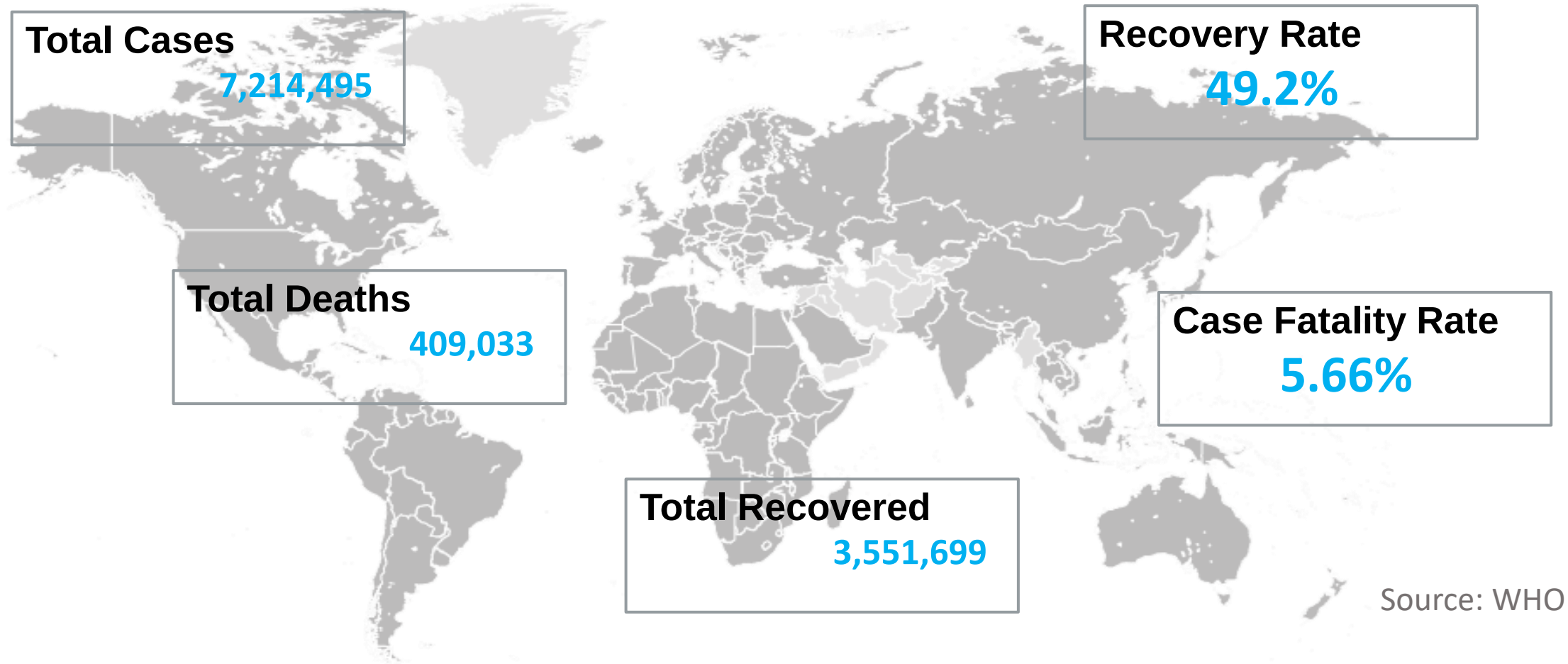
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Improved
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Overview- Around the world

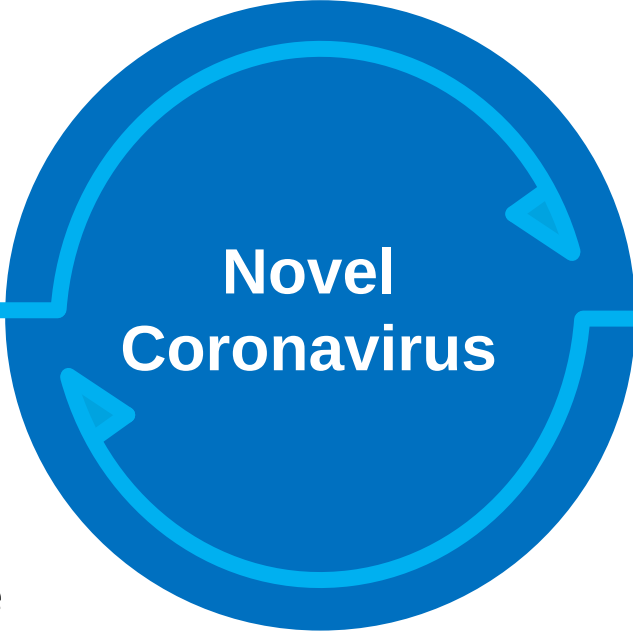
- Global COVID-19 is having unprecedented impact worldwide. Everyone is affected. Healthcare systems are struggling to keep up, while patients and communities are facing a once in a generation trauma.
- The virus was 1st reported on 31st December 2019 in the sea food market of Wuhan city Hubei province, China.



Epidemiology of COVID-19

What is n-COV-19?

- **COVID-19** : COVID-19 is the infectious disease caused by the most recently discovered corona virus.
- **Transmission:** The disease can spread from person to person through small droplets from the nose or mouth which are spread when a person infected with COVID-19 coughs or exhales, personal contact, inanimate objects.

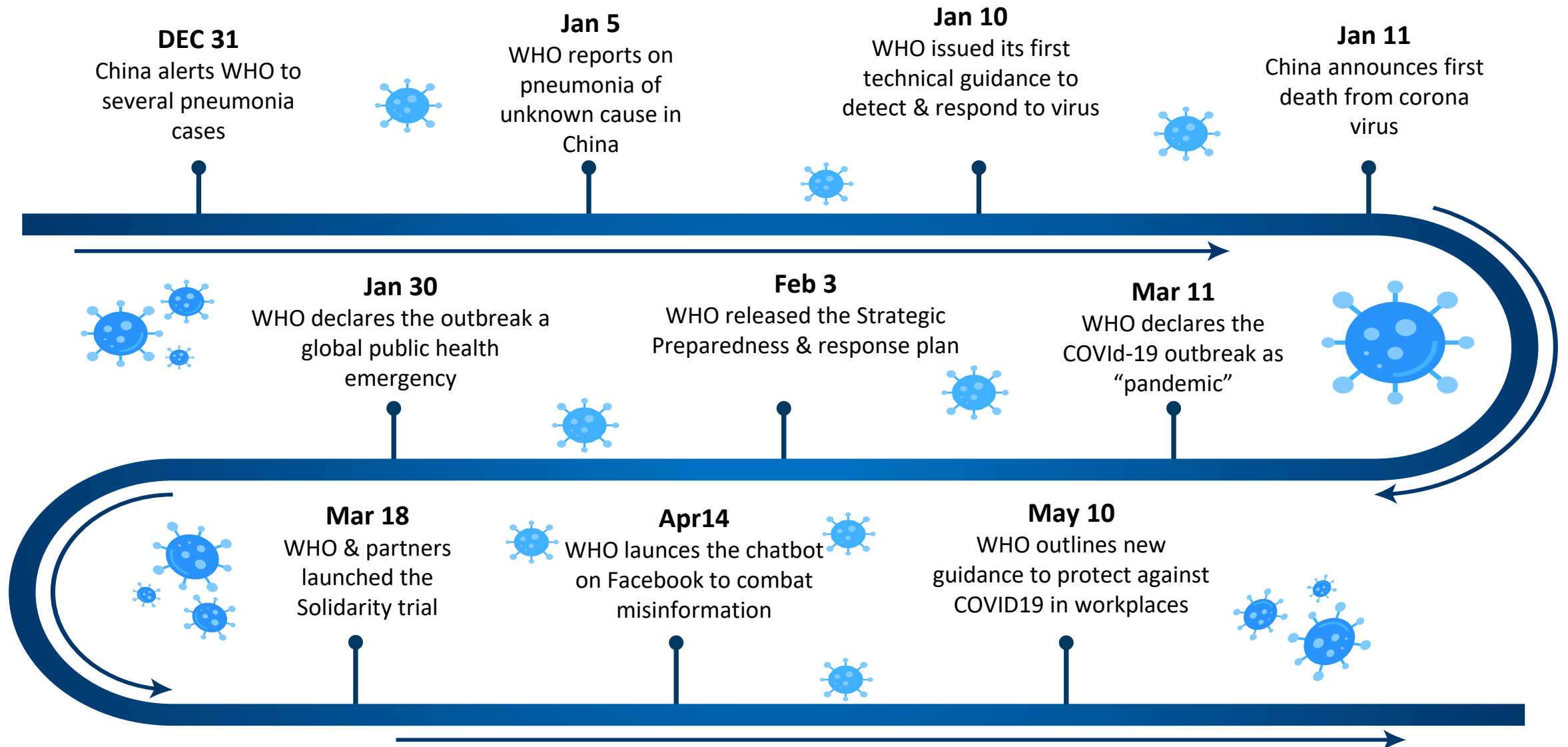


Novel Coronavirus

Symptoms

- Dry Cough
- High Fever
- Sore Throat
- Difficulty in breathing
- Some patients are asymptomatic and the individuals with predispose conditions are at greater risk.

COVID-19 Progress



Objective of the Study

1. To understand the situation of COVID-19 in India and its response towards flattening the curve of coronavirus.
2. To compare the India's and South Korea response to halt the spread of the coronavirus and find out the gaps and challenges
3. To provide the recommendations that can be implemented/ adopted for strengthening the India's fight against COVID-19

Research Methodology

Study Design: Descriptive cross sectional study

Study setting: India & South Korea

Data Collection: Publically available COVID-19 data have been collected from various websites

Data Sources:

India: official websites & Social media handles-WHO,MOHFW, ICMR, My gov.

South Korea: official websites & Social media handles- MOH , KCDC.

Data have been collected under 5 categories according to IHR, 2005

- 1) Response & preparedness
- 2) Disease Surveillance
- 3) Laboratory capacity
- 4) HR capacity & training
- 5) Risk communication

Time Period: 1 January 2020 to 20th May 2020.

WHO Response to COVID-19

Preparedness & Response

- Activated the Incident management response.
- Guidelines for lab diagnosis, IPC, risk communication etc.
- Coordination with global experts for mathematical modelling, case management.
- Response to rumors via social media & websites.
- WHO working with IATA to develop guidelines for airport workers & cabin crew.

Disease Surveillance

- Situation report for reporting of surveillance data country wise
- Guidelines for global surveillance with release of case definitions, detection of cases at airports.
- WHO is also working with notational authorities with Egypt and many countries to scale up the isolation, Quarantine and referral mech.
- WHO in collaboration with technology companies release update on dashboard

Laboratory capacity

- Interim guidelines- strategic use of testing kits, rationalization of testing, transportation, packaging of specimen
- Supply of medical equipment's, PPE kits to the various countries
- WHO solidarity flight – shipped lifesaving medical equipment's to 95 countries.
- Solidarity trial- To accelerate R&D 90+ countries
- WHO is working closely with OIE and FAO to develop guidance on safe operations of markets that sell sea food or animal based products

HR capacity & Training

- WHO launched the free online introductory course on COVID-19
- WHO has launched Open WHO Massive online open courses – it has more than 32,000 learners enrolled.
- Activated global expert networks
- Till now WHO has provided training to more than 2.5 million health care workers.

Risk Communication

- WHO, ITU and telecommunication companies uses digital platform to provide correct information on COVID-19(chatbot, WhatsApp etc.)
- WHO have created a free children's book on COVID19 to increase their level of knowledge and awareness
- WHO has created a database on COVID-19 which consists of latest international and multilingual scientific findings and global literature on regarding information about the disease

Situation Analysis of COVID-19- India

Total Cases

267,249

Total Deaths

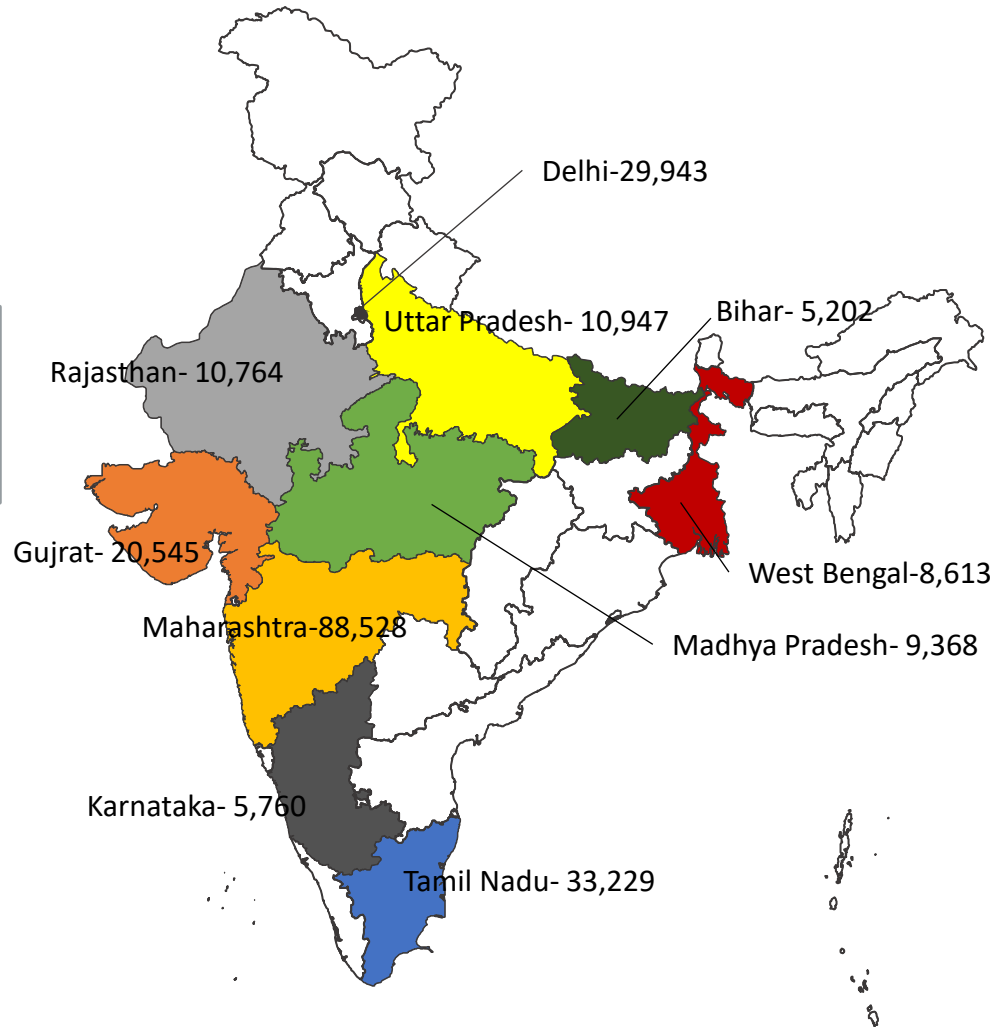
7,478

District zone wise

Red 130

Orange 284

Green 319



Case Fatality Rate

2.8%

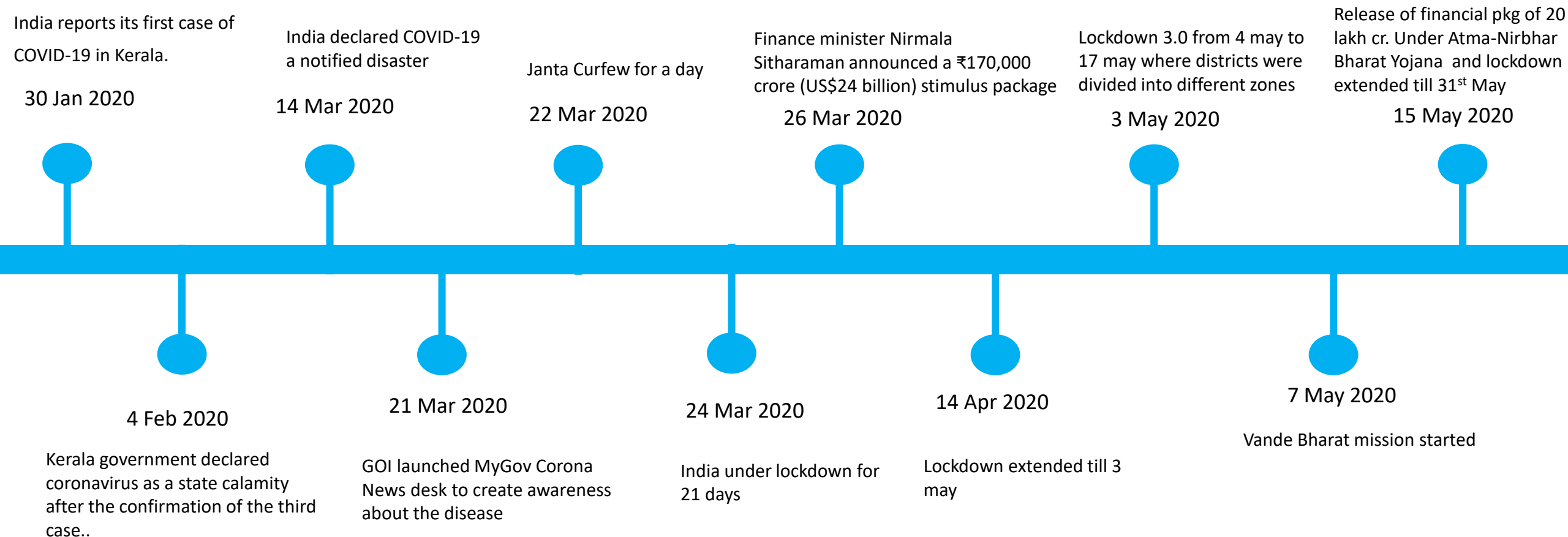
Recovery Rate

48.4%

Tested/1M pop.

3565

India Response to COVID-19



India Response to COVID-19

Preparedness & Response

- Screening of passengers at airports coming from china & other countries.
- Earlier, National institute of virology (NIV), initiated the sample testing for COVID-19.
- Distribution of IEC
- 24*7 control room and helpline number.
- Collaboration of inter ministries & WHO.
- Deployment of rapid response teams to states & districts.
- Janta curfew
- Assessment of health facilities by MOHFW
- Lockdown
- PM-Relief fund(INR 15,000 crores)
- Launched Aarogya setu app for contact tracing.

Disease Surveillance

- Thermal screening at airports.
 - Integrated disease surveillance response has started the surveillance system, with decentralized data reporting from 37 states and 734 districts
 - Dashboards with real time data reporting
- State Response:**
- RRTs conduct house to house search, identify the cases, isolate them and send them to quarantine centers/ hospitals for treatment and management.
 - Containment zones listing.
 - COVID-19 control rooms.
 - Formation of six Inter-Ministerial Central Teams(IMCTs)
 - Lockdown
 - Strict penalty under Section 35(1), 35(2)(a), 35(2)(e) and 35(2)(i) of the Disaster Management Act 2005.

Laboratory capacity

- ICMR serves as a reference laboratory for testing of COVID-19 cases
 - sentinel surveillance to detect the transmission of virus in the community.
 - Guidelines have also been issued for private sector laboratories who are performing COVID-19 testing including sample collection, packaging and transportation.
 - Today around 472 public labs are conducting testing for COVID-19 with 204 private labs in 7 states are functional.
- R&D:**
- DST & MOHFW contributing towards various R&D initiatives to combat this pandemic.
 - Council of Scientific Research(CSIR) is working with private sector to develop solutions for COVID-19

HR capacity & Training

- MOHFW in partnership with WHO has conducted orientation on COVID-19 preparedness & response and containment of virus for all the official members in states/UTs.
- NHSRC has been appointed as a designated center to facilitate training of frontline health workers with respect to their role in management of COVID-19.
- Empowered Group-4 has been setup specially for COVID-19 at national level for augmenting human resource and capacity building.
- Online training courses & webinar are being conducted by AIIMS, Delhi on clinical management of COVID-19.
- Diksha Platform
- Dashboard

Risk Communication

- WHO, ITU and telecommunication companies uses digital platform to provide correct information on COVID-19(chatbot, WhatsApp etc.)
- WHO is supporting UNICEF, MOHFW and various other partners in order to establish Interfaith Corona Coalition to engage different religious communities in steps against Novel Coronavirus.
- UNICEF with MOHFW working towards Social Mobilization Network
- IEC, press conferences held regularly by ministries.
- Use of social media platforms etc.

India Response to COVID-19

Lockdown Stages in India

- 1** Lockdown 1.0 came effective from 23rd March 2020. Its for 15 days where people were urged to stay at homes except people working for essential services.
- 2** On 14 April, PM Modi extended the nationwide lockdown till 3 May. **Relaxations:** agricultural businesses, including dairy, aquaculture and plantations, as well as shops selling farming supplies, to open
- 3** India has extended its second lockdown for another 15 days from starting from 4th May. To provide the certain relaxations states and districts are divided into zones which are green, orange, red and containment zones so as to start the economy activities and side by side control the spread of virus.
- 4** The nation-wide 3rd lockdown in India ended on 17 May-20 till 31st May 20, marking the beginning of lockdown 4.0 The delineation of red, orange and green zones will now be decided by state governments and Union Territories
- 5** Unlock 1.0 started from 1st June 2020

Zones	Definition
Green	Districts with zero confirmed cases till date or the district with no confirmed case from past 21 days.
Red/ hotspots	Based on no. of active cases, doubling rate of confirmed cases, extent of testing and surveillance districts will be identified by GOI and MOHFW
Orange	Districts which are neither red nor green zones shall be considered as orange zones

Source: MOHFW

Situation Analysis of COVID-19- South Korea

Total Cases

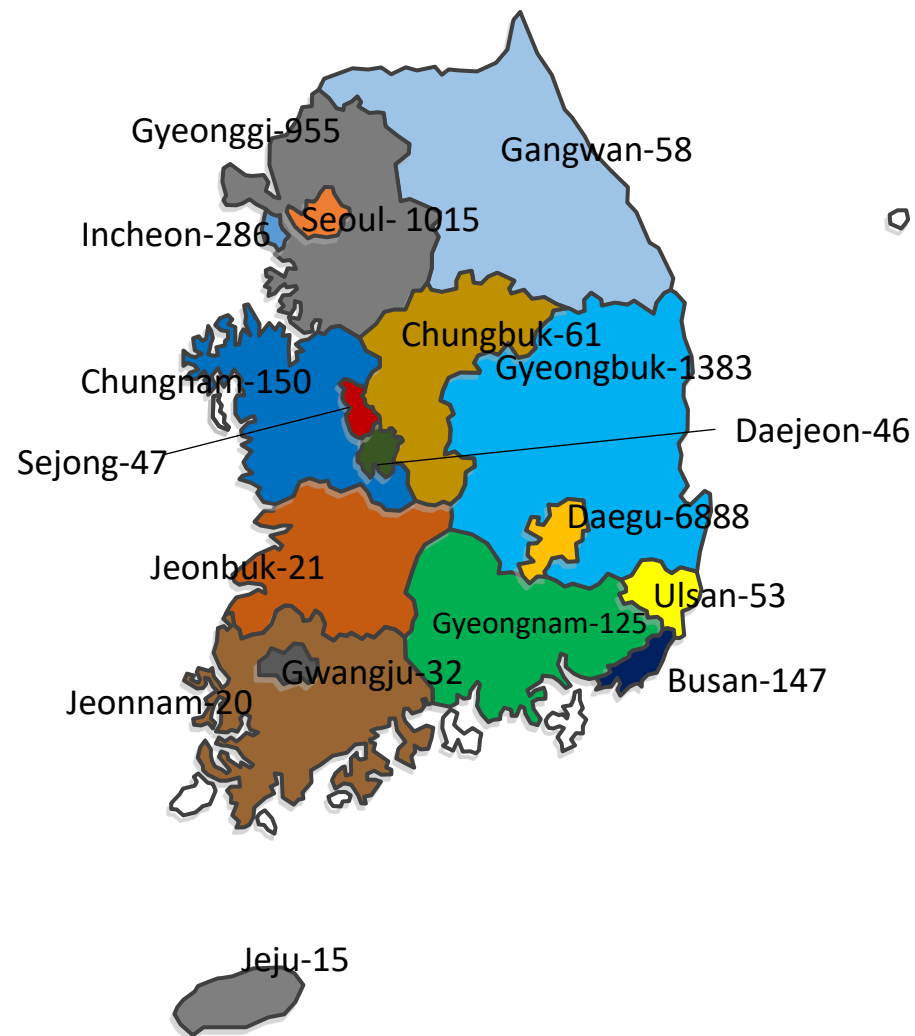
11,852

Active case

989

Total Deaths

274



Case Fatality Rate

2.3%

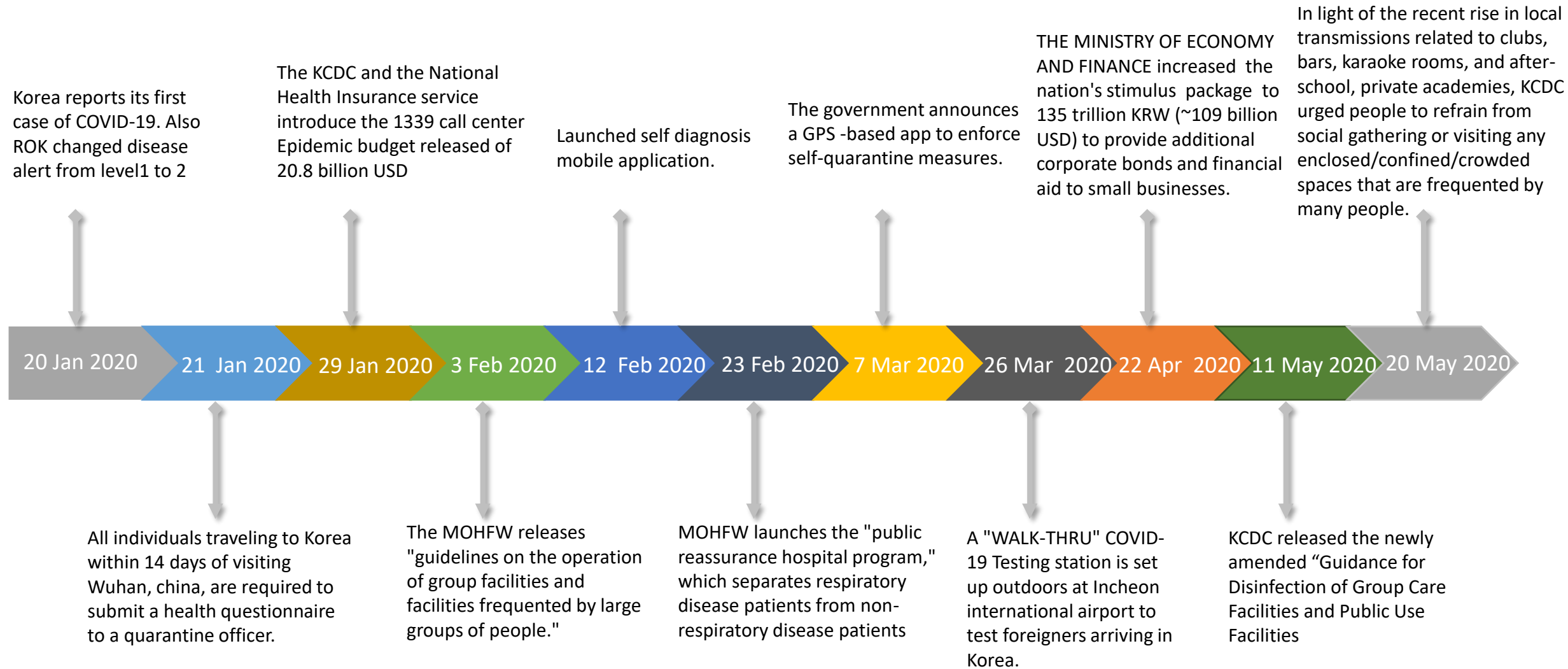
Recovery Rate

89.3%

Tested/1M pop.

20,208

South Korea Response to COVID-19



South Korea Response to COVID-19

Preparedness & Response

- Screening and quarantine measures
- ROK changed its infectious disease alert category from Level 1 i.e. Blue to Level 2 i.e. is Yellow
- Released Epidemic prevention budget of 17 Million USD
- Korea Occupational Safety and Health Agency initiated supplying 7,20,00 masks to workplace
- Manufacturing of test kits.
- The Ministry of Economy and Finance declared reduction in rest cost up to 50% for small and medium enterprises and 20% for large enterprises for 6 months.

Disease Surveillance

- Enhancement in screening, contact tracing and quarantine measures.
- contacts are to monitored for 14 days and will receive a call from health staff on first, second and seventh day for confirmation of any symptoms. If they show any symptom, they are isolated and tested.
- screening clinics-638
- Inspection and monitoring of travelers are being conducted in collaboration with Korean National Police Agency.
- The travel history is checked by healthcare providers via Patient Status Checking System, International Traveler Information System (ITS), and Drug Utilization Review (DUR).
- Travel restrictions,
- Self diagnostic app.
- GPS based app to enforce self-quarantine measures.

Laboratory capacity

- Manufacturing of testing kits.
- Currently, 29 hospitals with 161 beds have been designated for the hospitalization of confirmed and suspicious cases.
- COVID-19 testing techniques and data is provided to private health institutions to enable them to diagnose the cases.
- IPC guidelines has been distributed to welfare facilities
- Reduction in the regular consultation services.
- Strength the supply chain.
- IMs has developed negative pressure isolation rooms at regional hub hospitals, infectious disease institutions and 198 bed government hospitals.
- Walk thru testing station for COVID-19 has been set up at airports for foreigners arriving to Korea.

HR capacity & Training

- Increment in staff members (from Ministry of National Defense, Korean National Police Agency and Ministry of Health and welfare are stationed at, Ministry of Health and Welfare and Incheon International Airport's quarantine checkpoints.)
- For the on-site epidemic prevention and several epidemiological investigations, Incidence management system (IMS) has suggested to increase the central immediate response teams from 10 to 30.
- Changes in recruitment procedures.
- Re-alignment of the work of frontline health workers.

Risk Communication

- National Health Insurance Service and KCDC introduced 1339 call center .
- self-diagnosis mobile application
- The South Korean Government maintained transparency and released information about travel histories of infected patients and information related to virus
- Website named coronamap.site was designed that shows number of cases on live maps of South Korea.
- Campaigns
- Daily briefing about area wise cases and situation
- Using Korea's Cell Broadcasting Service-based public warning network, government officials simultaneously send custom emergency alert messages to millions of mobile users at city and district levels.

Lessons Learnt from South Korea Response to COVID-19

SNo	Parameters	India	South Korea
1	Early recognition of threat and activation of national response	- International and domestic travel restrictions. - Janta curfew & Lockdown	- Level-4 of National health crisis management - Special Immigration procedures
2	Establishment of diagnostic capacity	75% procurement of testing kits by drug manufactures. COVID tests per 1000 population:100,000 tests(0.07) - COVID 19 test positivity rate: 6.41% - As of May 31, there were 472 government-owned labs and 204 private laboratories authorized for lab testing.	100 % Rapid development, approval & deployment of testing kits by private companies. - COVID tests per 1000 population: 0.22 - COVID 19 test positivity rate: 1.2% 650 COVID-19 testing centers.
3	Measures to prevent community spread of virus	- Lockdown measures - Travel guidelines/ advisory., SOPS for case management - Integrated disease surveillance. - Deployment of ICMT teams to states; violating lockdown. - Call centers - COVID-19 hospitals	- Submission of health questionnaire to quarantine officer. - Call center:1339 for consultation calls. - Implemented: Patient Status Checking System, International Traveler Information System (ITS), and Drug Utilization Review (DUR)- given access to pharmacies too. - Self- isolation app - Relief bands. - Sharing of health status 2-3 times a day.

Lessons Learnt from South Korea Response to COVID-19

SNo	Parameters	India	South Korea
4	Strengthening of health system- Triage and treatment system	- Dedicated COVID-19 govt. hospitals. - Construction of open hospitals. - Tie up of private hospitals with hotels in Delhi. - Triage system to sought COVID-19 patients from others.	- Reduction in the regular consultation services. - Designated triage centers were established at the district level. - Prioritizing resources for treatment focused on beds, oxygen, RT-PCR testing, computed tomography scans, as well as PPE for medical personnel and other human resources such as physicians and nurses.
5	Public- Private Partnership	Around 39 pharma companies are currently approved for supply of PCR kits by CDSCO.	Public private partnership for development of testing kits for COVID-19 more than 1.3 million kits are exported to countries such as Brazil, Ecuador, India, Poland etc.
6	Use of Digital Technology	- Aarogya setu app for contact tracing - Dashboards for real time data. - My gov. dedicated site for COVID-19 - IEC communication via social media	- E-quarantine system - Self- isolation app. - Patient status checking system - Dashboards - IEC via social media

Recommendations

Proposed Interventions & frameworks

Response and preparedness:

- Virtual care solutions- for less severe COVID-19 patients: evaluate patient based on their symptoms, risk-based assessment and continuous monitoring.
- Patient call centers can be built specifically for knowledge dispersion and providing aid to patients remotely.
- Additional feature of tracing home quarantine individual through GPS enabled system via Aarogya setu app.
- Support the implementation of Personal health monitoring devices should be implemented such as use of smartwatches, biosensors.
- Research studies to assess the comorbidities associated with COVID-19 and preparing the health system based on the results of the study.
- Involvement of NGOs and organization in introducing online health and wellness program and conducting the physical therapy sessions in small groups in nearest park.
- Health and wellness centers should be ramped up by making facilities available for basic screening of Coronavirus and other infectious disease.

Laboratory Capacity & Disease Surveillance:

- Need to setup Integrated Public Health Labs at district and block levels. Thus, this help in strengthening the laboratory network in all district at all level.
- A common database should be created at district level for creating backup of all test performed in all the blocks and wards of the districts. This help in achieving the goal of Integrated Lab Network and this data can be available to epidemiologist, data analyst and researchers for conducting research studies and analysis to understand the disease trends and help in detecting any unusual pattern of patient's problem.

Recommendations

Proposed Interventions & frameworks

Research and Development:

- Multi- disciplinary studies and research should be conducted to understand the both human and animal diseases, the natural history of diseases. (As there are approx. 7,000 rare diseases many for which natural history is still unknown).
- Artificial Intelligence based predictive models should be formulated to conduct research about new and developing diseases.
- For ensuring optimum quality care and addressing the shortage of skilled healthcare workers more focus should be given on M-Health approach. For example: Home based remote patient monitoring, support for chronic care management such as cancer, diabetes and asthma.

HR Capacity and Training:

- Setting up of Infectious Disease Cells in District and Sub-District Hospitals and there should be regular/ weekly online and in person training in epidemic management courses.
- A dedicated infectious disease squad can be formed containing Epidemiologists, Demographers and Medical Experts in PHC, CHC and District Hospital. The main task of this squad will be analyzing the routine trends of problem faced by patient and studying the disease pattern in that region.

Risk Communication and Community Engagement:

- Risk communication training for traditional healers, quacks, health practitioners, frontline health worker and gram panchayat members in rural areas for infodemic management in era of COVID-19.
- Engaging people with disabilities will act as agent of change as they can play an important role in supporting information campaign and busting prevailing myths.
- By connecting with local media and providing platform to young people with disability to promote accurate knowledge on Coronavirus and its impact to their peer help in reducing the stigma and strengthening the social cohesion.

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THANK YOU !