Journal Homepage: -www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/11029
DOI URL: http://dx.doi.org/10.21474/IJAR01/11029

RESEARCH ARTICLE

INDIA'S FIGHT AGAINST COVID-19: A DAY TO DAY COMPARATIVE PROGRESS BY GRAPHICAL REPRESENTATION-STUDY OF LOCKDOWN1.0 AND 2.0

Ms. Reshu Gupta[1], Prof. (Dr.) Ravi Goyal[2], Dr. (Mrs.) Pallavi Agarwal[3] and Vishal Varma[4]

1. PhD Scholar, SES, Bhartiya Skill Development University Jaipur, India.
2. Principal, School of Entrepreneurship Skills, BSDU Jaipur, India.
3. Astt.Prof. School of Entrepreneurship Skills, BSDU Jaipur, India.
4. PhD Scholar, SES, Bhartiya Skill Development University Jaipur, India.

Manuscript Info

Manuscript History
Received: 22 March 2020
Final Accepted: 25 April 2020
Published: May 2020

Key words:-
Covid-19, Pandemic, Corona Virus, Lockdown

Abstract

World is facing a critical situation this time. A pandemic declared by World Health Organization; COVID-19 caused by new corona virus. It is an infectious disease caused by a newly discovered virus. Most people infected with the Covid-19 virus will experiences mild to moderate respiratory illness and some cases have caused death. This virus can be spread from person to person. There is no corona virus vaccine yet. Prevention involves frequent hand washing, coughing into the bend of your elbow, staying home, wear face mask and practice social distancing.India is not untouched by this. The character of the rule of a nation is reflected only in times of calamity and disaster. The Corona virus disaster has also told what the character of a person, society and nation can be. Now it is time for tragedy, it will pass definitely. The marks that will remain after the passing of time, they will tell how world dealt with this time. Then perhaps this confusion will break who is the most powerful country in the world.In India, there were different dimensions of government activism and society's sensitivity. The society got involved in discharging its role with the government. Community sets out to show excitement, solidarity, on a call in a time of calamity.

Copy Right, IJAR, 2020,. All rights reserved.

Introduction:-

The character of the rule of a nation is reflected only in times of calamity and disaster. When there is government of purity and authenticity, disasters cannot make apocalypse. The Corona virus disaster has also told what the character of a person, society and nation can be. Now it is time for tragedy, it will pass definitely. The marks that will remain after the passing of time, they will tell how world dealt with this time. Then perhaps this confusion will break who is the most powerful country in the world.

At this time, if we have seen anyone fighting in the world, then it is India. There are underlying reasons for India to do so. Elsewhere in the world, there is overcrowded socialism or capital, and only profit-oriented self-directed systems, they were sure to break down because whatever the upper flare, they were self-centred, hence the lack of mutual support was there. In the West, people kept looking towards the government during the crisis and the government kept crying out of limited resources.

Corresponding Author:- Ms. Reshu Gupta
Address:- PhD Scholar, SES, Bhartiya Skill Development University Jaipur, India.

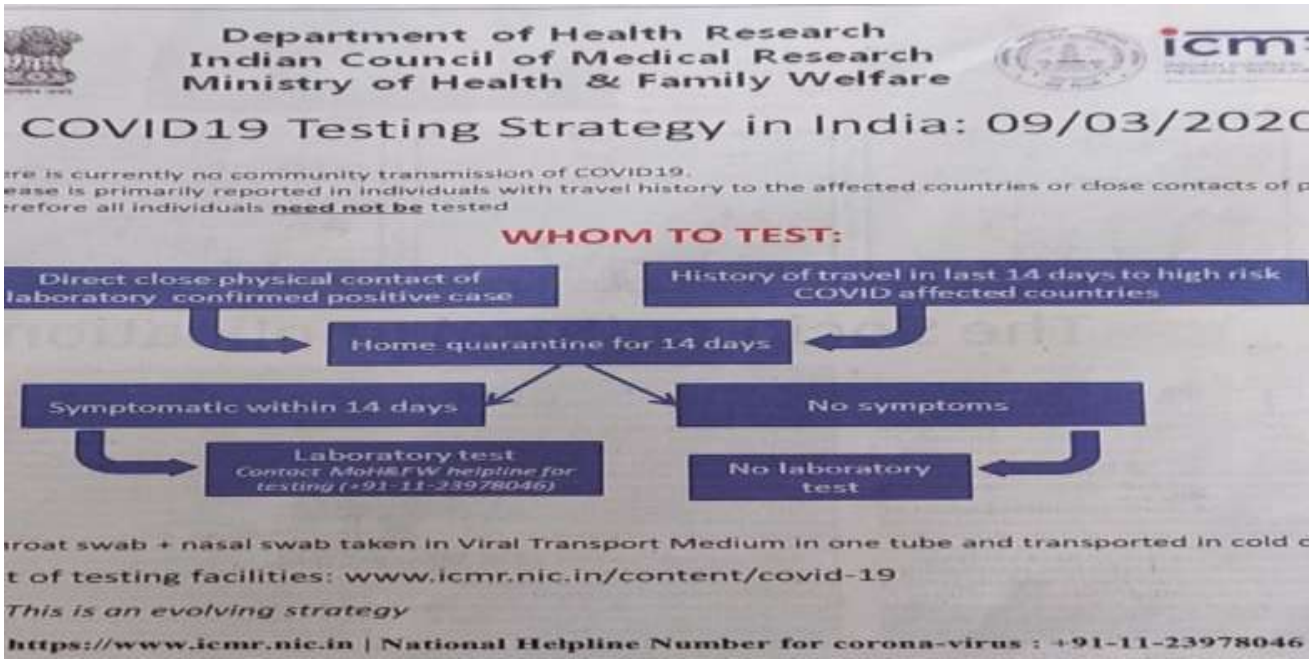
In countries like China, freedom of expression and human rights were brutally crushed. Whether it was a matter of the number of dead, whether it was about inadequate ventilators or was seeing this everywhere in hospitals. But in India, there were different dimensions of government activism and society's sensitivity. The society got involved in discharging its role with the government.

Community sets out to show excitement, solidarity, on a call in a time of calamity. Also comes out to illuminate the light. This light symbolizes the unity of the whole country. This involvement of society with the government is not seen everywhere in the world.

To handle the situation government, need to take some strong actions and in those actions one main action was Lockdown in country. To stop the spread of this virus, decision making and that would also on time decision making is the bigger aspect. Indian government took in time decisions and that is the biggest reason of low effect of Covid-19 as compare to other countries. The decision will badly affect on economy of country undoubtedly, but this will save lives of many. And now many countries are following Indian ideas to fight against this pandemic. Study is to be done on Lockdown 1.0 and 2.0, just to know how and what were the steps taken and what were the results of that step.

The need of Lockdown was time demanding and it was done in slots i.e. Lockdown 1.0, Lockdown 2.0 and at present Lockdown 3.0 in India (Planning to do 4.0 too). A comparative study between India and some other countries is to be done with help of graphs, to understand the pandemic handling.

Analysis with help of graphs:
From the very beginning government started its fight against Covid-19, on 9th March, 2020 There was a protocol shared by Department of Health Research, ICMR(Indian Council of medical research) and Ministry of health and family welfare , Regarding what to and when to get tested and how for Corona Virus.



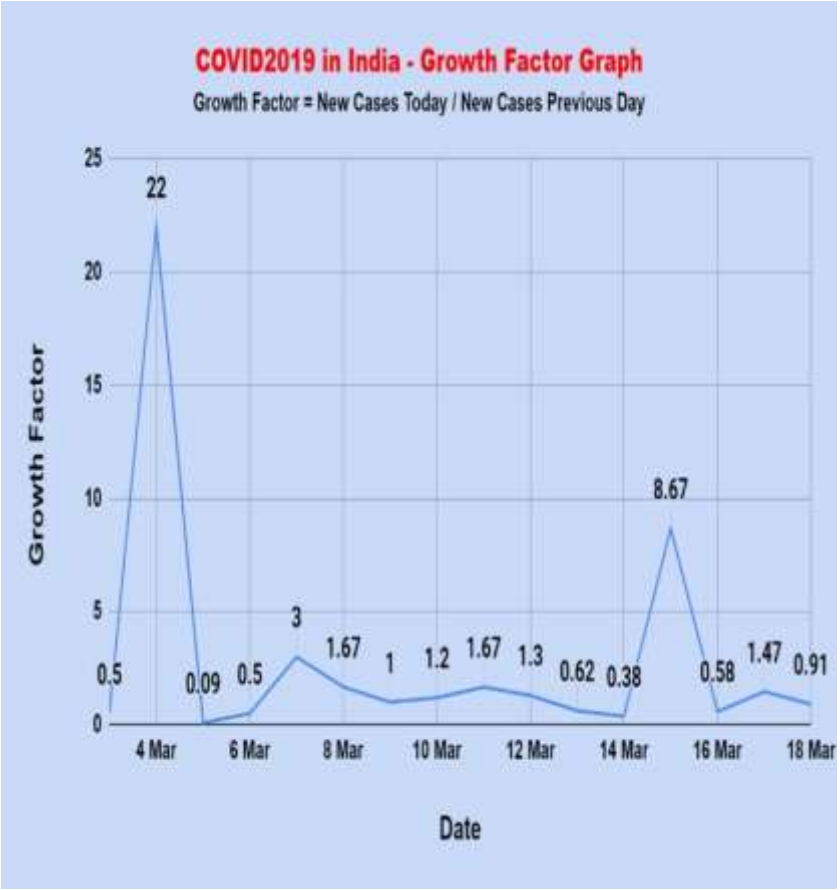
One positive aspect of the corona virus India fight so far has been that at similar number of cases benchmark, India is faring much better as compared to other countries when it comes to growth rate of cases.

At around 100+ cases benchmark, growth in India's cases is just 14%. The data of much lower growth rate at similar number of cases is significant positive in India's fight. As ICMR random trials also proved, so far India has managed to contain community spread.

Rate of Growth at Similar Number of Cases Benchmark									
India		Italy		United States		South Korea		United Kingdom	
Date of Benchmark	Number of Cases	Date of Benchmark	Number of Cases	Date of Benchmark	Number of Cases	Date of Benchmark	Number of Cases	Date of Benchmark	Number of Cases
17-Mar	147	23-Feb	155	05-Mar	159	20-Feb	111	06-Mar	164
18-Mar	167	24-Feb	229	06-Mar	233	21-Feb	209	07-Mar	209
Increase in No.	20	Increase in No.	74	Increase in No.	74	Increase in No.	98	Increase in No.	45
Growth Rate	**14%**	**Growth Rate**	**48%**	**Growth Rate**	**47%**	**Growth Rate**	**88%**	**Growth Rate**	**27%**

Here, in 2 graphs it is shown:
A Growth factor
B. Rate of growth at similar cases benchmark

So far, India is managed to contain corona virus outbreak to local level. ICMR 826 random trial results reaffirm the same no-Community spread up to 19th March, 2020. The government response has been very proactive



Rate of Growth at Similar Number of Cases Benchmark				
Country	Date of Benchmark		Increase in Number	Growth Rate
India	17th March	18th March	20	14%
	147	167		
Italy	23rd Feb	24th Feb	74	48%
	155	229		
United States	5th March	6th March	74	47%
	159	233		
South Korea	20th Feb	21st Feb	98	88%
	111	209		
United Kingdom	6th March	7th March	45	27%
	164	209		

On 22nd March, Janta curfew was declared by the PM of India, this was a great step in fight against Covid-19

Rate of Growth in cases (day by day analysis):
Rate of growth at similar number of cases (100+ benchmark). Different countries reached benchmark at different times. Graph also shows total cases in these countries as of end of 22ndMarch 2020

India has so far defied the global curve. Decisive measures at each stage taken.

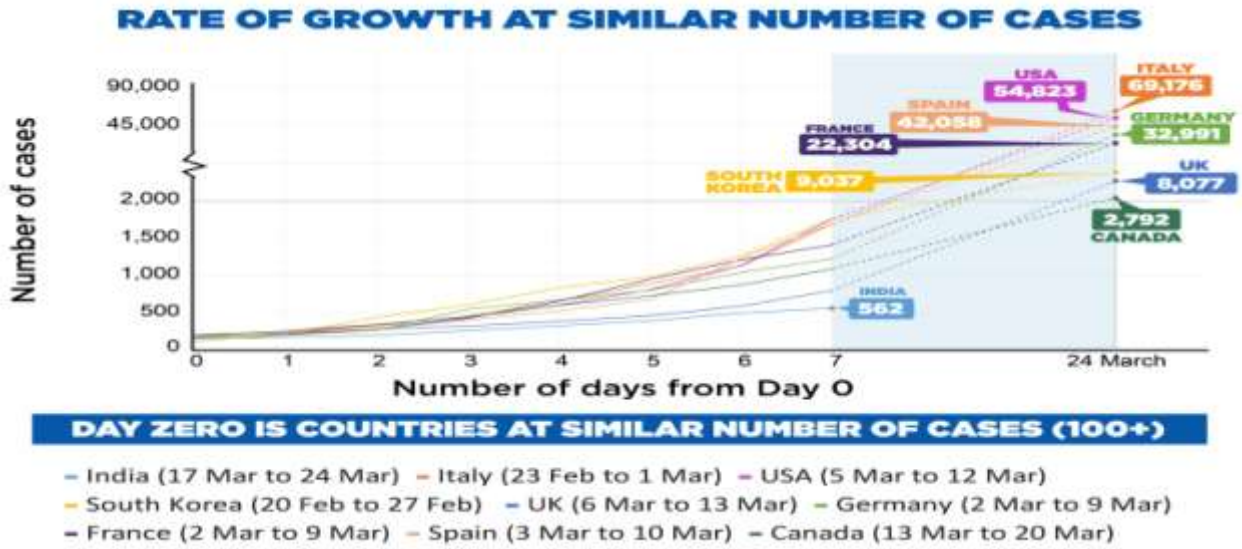
Same graph is also shown in numbers also, points to consider:
1. India has been very aggressive, so far at each stage of Covid-19 outbreak to contain the threat
2. Our aggressive measures have so far worked.
3. Government is live 24X7 for more measures

Rate of Growth of Cases at Similar Number of Cases Benchmark (100+ cases)							
DAYS	0	1	2	3	4	5	22nd March (LATEST)
India (17 Mar to 22 Mar)	147	167	195	258	325	390	390
Italy (23 Feb to 28 Feb)	155	229	322	453	655	888	59,138
USA (5 Mar to 10 Mar)	159	233	338	436	603	808	33,546
South Korea (20 Feb to 25 Feb)	111	209	436	602	833	977	8,897
UK (6 Mar to 11 Mar)	164	209	278	321	383	460	5,683
Germany (2 Mar to 7 Mar)	165	203	262	545	670	800	24,873
France (2 Mar to 7 Mar)	191	212	285	423	653	949	16,018
Spain (3 Mar to 8 Mar)	165	228	282	401	525	674	28,768
Canada (13 Mar to 18 Mar)	198	252	341	441	598	727	1470

Lock-down 1.0:
On 24th March, 2020 complete Lock-down was declared by central government.

Rate of growth at similar number of cases benchmark.

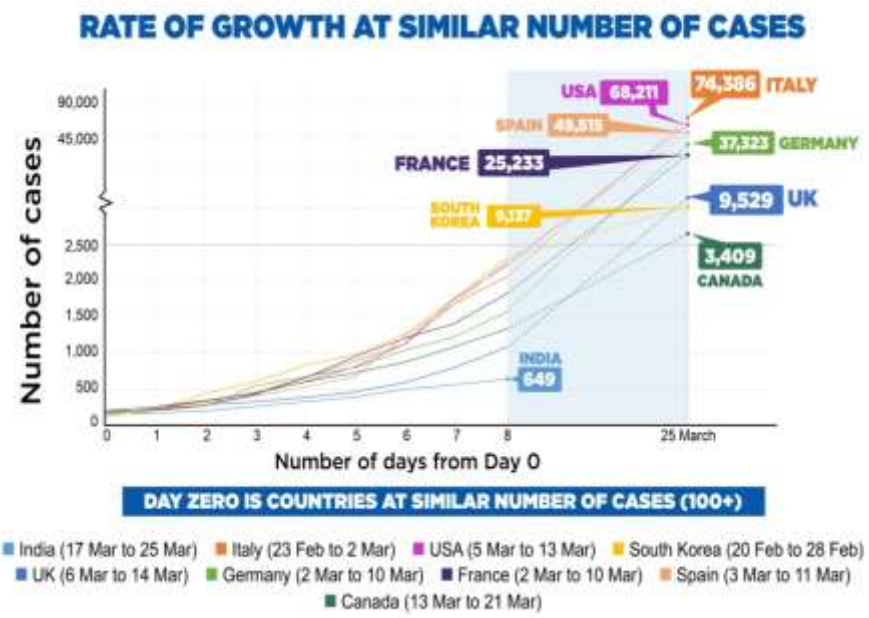
Now data is for 7 days plus Day zero (when 100+ benchmark reached). India faring better than anyone else. For a while UK was parallel to India but diverges on day 6.

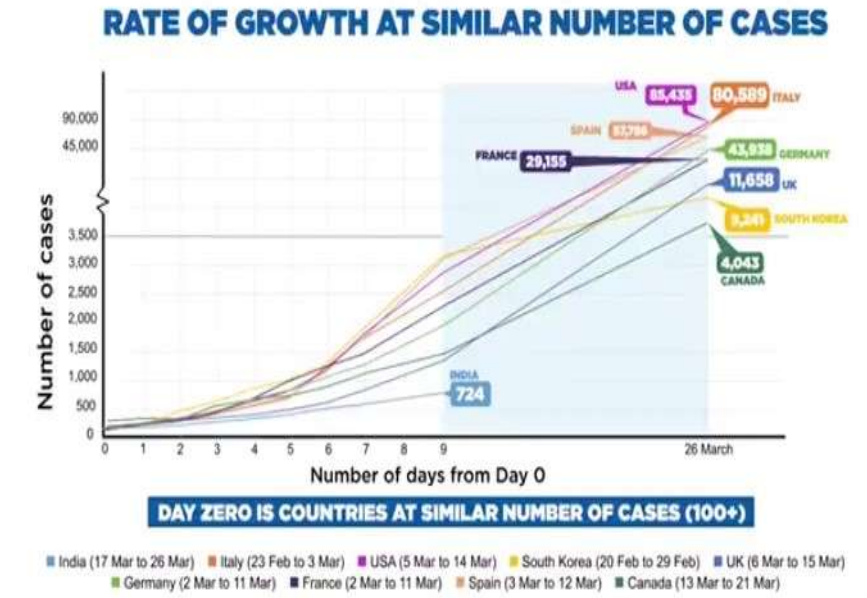


Next chart (Chart A) of rate of growth of cases of Covid-19 as on 26thMarch, 2020. (Data as on 10:15AM on 26thMarch, 2020)

Benchmark is Day zero-when countries reached 100+cases. India has managed to contain it so far. The decision of Lock down was working.

Chart B is showing data of Day 09





As different countries battle the Covid-19 pandemic, there is much debate as to which country acted in which way and whether their actions were timely or not?

Also, which country model, on balance, works better than others?

China notified on 7th January, 2020 about Covid-19 (without details)

8th January, 2020: India did its first mission meeting.

17th January, 2020: India started screening of all passengers from China

25th January, 2020: Prime Minister's Principal Secretary chairs high level review meeting.

Date	Number of Cases	Action Timeline by Modi Government
07-01-2020	0	China identifies Coronavirus as the causative agent of the disease
08-01-2020	0	Ministry of Health holds 1st joint monitoring mission meeting
17-01-2020	0	Health Ministry issues advisory to all states and UTs on Coronavirus and holds meeting with them for initiating health sector preparedness. Advisory to observe health precautions to those travelling to china issued. All travelers to China (in particular Wuhan city) asked to monitor their health closely. Screening of international passengers at Delhi, Mumbai, Chennai, Kolkata, Bengaluru, Hyderabad and Kochi begins. Integrated Disease surveillance program initiated to monitor Coronavirus epidemic
25-01-2020	0	**Principal Secretary to PM holds review meeting on Coronavirus on the instructions of PM**. Dedicated Central teams inspect all airports and screening extended eventually to all airports. 20,000 people from 115 flights at 7 international airports have been screened. National Institute of Virology labs all over the country are fully equipped to test the virus. All State and District health authorities have been alerted and are in the loop.
27-01-2020	0	Cabinet Secretary holds meeting to review preparedness to counter Coronavirus Health Ministry holds review meeting with Principal secretaries of health all states along with meeting of Chief Secretaries of 5 states to review the preparedness and asked to ensure that community level monitoring of passengers is undertaken through health staff Out of the 29,707 passengers screened from 137 airlines so far, 12 were sent to NIV, Pune for further testing. no positive so far Airlines asked to report illness of any passenger on all flights with direct or indirect connectivity to China. Ministry of Health and Ministry of External Affairs begins preaparation of evacuation of indian students from Wuhan.

India's Ciovid-19 response is moving ahead:
29th January, 2020: Exports of N95 masks and PPE prohibited.
30th January, 2020: 6 labs identified for testing (The day India reports its first case)
31st January, 2020: 6 Quarantine Centres established
1st February, 2020: India's begins evacuations.

Date	Number of Cases	Action Timeline by Modi Government
29-01-2020	0	8 central teams deputed across states to monitor conduct of gram sabhas and gram sabhas organized in 21 districts bordering Nepal in collaboration with states. Export of N95 Masks and PPE prohibited.
30-01-2020	1	WHO declares Coronavirus as public health emergency of International Concern Cabinet Secretary chairs review meeting and announces- Travel advisory issued to avoid non—essential travel to china. All travellers from China since 15 Jan 2020 shall be tested for nCoV since there is no incubation period. Six labs identified and activated to test for Coronavirus, six more functinal by next day(31st January) . Directives issued for need for 14 days' home isolation for all those who have returned from China. States asked to open control rooms, appoint a nodal offices and popularize the control room number.43,346 passengers from 234 flights screened out of which 49 samples were sent to NIV for testing, 48 came negative
31-01-2020	1	Quarantine centres are established at Manesar and Chawla Camp for those returning from Wuhan; 50 bed critical care facility set up at Safdarjung Hospital
01-02-2020	1	India evacuates 324 citizens from Wuhan, China

India has now 3 confirmed cases of Covid-19. At this stage itself:
3rd February, 2020: Prime Minister constitutes a group of ministers (E-GoM) to tackle emerging situations.
3rd February, 2020 actions: Advisory against travel to China. E-Visas to all Chinese passport holders suspended.

Date	Number of Cases	Action Timeline by Modi Government
02-02-2020	2	330 Indians and 7 Maldivians evacuated from Wuhan, China
03-02-2020	3	**PM Modi constitutes Empowered Group of Ministers on COVID 19 headed by the Health Minister; E-GoM meets on the very same day. Principal Secretary to PM holds review meeting with Secretaries of Health, Defence, Home, External Affairs and Civil Aviation along with NSA Ajit Doval and CDS Gen Bipin Rawat**
		72,353 passengers from 539 flights in 21 airports, seaports and borders with Nepal screened till now. Universal screening in all flights from Singapore and Thailand besides Hong Kong and China is being done. 2,815 people are presently under community surveillance in 29 States/UTs. Out of a total of 338 samples sent for testing, 335 have been found to be negative, 3 are positive, while 70 more are being processed.
		Travel advisory to refrain from travel to China
		e-Visa facility for Chinese passport holders has been temporarily suspended. • e-Visa already issued to Chinese nationals is not valid temporarily. • The facility for submitting the application online for the physical visa from China is suspended.

India still Only 3 cases of Covid-19.

7thFebruary, 2020: Health minister gives statement in Parliament

1. 139,539 people already screened
2. Integrated Disease surveillance network tracking almost 7000 people

13th Feb.2020: Health Minister addresses media

Date	Number of Cases	Action Timeline by Modi Government
07-02-2020	3	**Health Ministers statement to Parliament-I)**Total of 1,275 flights have been screened covering a total of 1,39,539 passengers, and 150 passengers identified with symptoms have been referred to isolation facilities. II)1,305 samples have been tested and 1,282 samples were found negative, 20 samples are under process and 3 samples have tested positive. III) Integrated Disease Surveillance network tracking 6,599 passengers across 29 States/UTs in the community till now IV) 305 symptomatic travellers referred to isolation facility and being monitored V) As on 6th February, a total of 31,161 confirmed cases and 636 deaths have been reported in China. A total of 275 confirmed cases have been reported outside China from 27 countries VI) Health Secretary reviews preparedness of Ministries/Depts and States on Novel Coronavirus through video conference VII)85 ships form China and 4,274 passengers have been screened.
13-02-2020	3	Union Health Minister Dr Harshvardhan addressed the media on the status, actions taken and preparedness of States and relevant ministries on #COVID2019
21-02-2020	3	States advised to regularly update the requisite information pertaining to screening and surveillance accurately and in a timely manner on the web portal which has been put in place as a special surveillance web tool to monitor the cases on a real time basis at the national level.

Number of Covid-19 cases still 3. But actions continue:

22nd Feb. 2020: Singapore Travel advisory issued

24th Feb. 2020: Vietnam, Nepal, Indonesia, Malaysia added to screening list

26th Feb. 2020: Advisory issued to avoid travel to South Korea, Iran and Italy.

Date	Number of Cases	Action Timeline by Modi Government
22-02-2020	3	21,805 passengers have been brought under community surveillance. In addition, 3,97,152 flight passengers and 9,695 travellers at sea ports have been screened.
		Cabinet Secretary chaired a high level meeting to review the status, actions taken and preparedness of States/UTs regarding management of Novel Coronavirus (COVID19).
24-02-2020	3	Screening of passengers is being done in all 21 airports, 12 major and 65 non-major seaports and border crossings. 4,214 flights and 4,48,449 passengers have been screened so far. As of now, 2,707 samples have been tested of which only 3 samples had earlier tested positive (Kerala) and all the three patients have been discharged from the hospitals and are now in home isolation.
		In all, 23,259 persons were brought under community surveillance in 34 States/UTs through the Integrated Diseases Surveillance Programme (IDSP) network.
		Health Minister holds another meeting to review preparation and further measures to contain Coronavirus
		Screening of passengers from flights extended to those coming from Vietnam, Nepal, Indonesia and Malaysia
26-02-2020	3	People coming from Republic of Korea, Iran and Italy or having such travel history since 10th February 2020 may be quarantined for 14 days on arrival to India.
		Advisory issued asking Indians to refrain from non-essential travel to Republic of Korea, Iran and Italy.
		An Indian Air Force aircraft evacuated 76 Indians and 36 foreign nationals from the Chinese city of Wuhan, which has been the epicentre of the coronavirus outbreak.
27-02-2020	3	An Air India flight brought back to the national capital 119 Indians and 5 foreigners who were on board a cruise ship, which was docked off Yokohama in Japan and had been hit by the novel coronavirus outbreak.

March- India's action to tackle Covid-19
3rdMarch, 2020: At just 6 confirmed cases, universal screening introduced.
4thMarch, 2020: PM Modi sends direct message. No Holi Milan
7thMarch, 2020: PM holds review
7thMarch, 2020: Quarantine guideline. New travel restrictions

Date	Number of Cases	Action Timeline by Modi Government
03-03-2020	6	Introduction of universal screening for international arrivals w.e.f. 3rd March 2020
		Prime Minister reviewed the preparedness on the COVID-19 Novel Coronavirus across the Ministries and states
04-03-2020	28	**Prime Minister Narendra Modi tweets that he will not take part of any Holi Milan programme since experts are advising against mass gatherings to avoid spread of Coronavirus.** A total of 6,241 flights covering a total of 6,11,167 passengers were screened. Review by PMO: Meeting re-affirmed a pro-active 'pan-government approach'; with specific areas of responsibility identified for various public authorities at the Centre, state and local levels.
07-03-2020	34	Prime Minister reviews the situation on COVID-19 with concerned Ministries. He exhorted the officers to identify best practices for COVID-19 management from across the world and within the states and ensure their adoption. He mentioned that in view of opinion of experts, people should be advised to avoid mass gathering.
		An Advisory is issued for all incoming international passengers retuning to India to self-monitor their health and follow the recommended DOs and DON'Ts, since more than 100 countries across the world now have reported cases of COVID-19. The Advisory also calls for passengers with travel history to China, Hong Kong, Republic of Korea, Japan, Italy, Thailand, Singapore, Iran, Malaysia, France, Spain and Germany to undergo self-imposed quarantine for a period of 14 days from the date of their arrival, and their employers to facilitate work-from-home for such employees during this period. In addition to earlier visa restrictions, all regular Visas (including e-Visas) granted to nationals of France, Germany and Spain on or before 11.03.2020 suspended. Regular visas (including e-Visas) granted to all foreign nationals who have travel history to these countries on or after 1.2.2020 suspended.

India is below 100 confirmed cases benchmark of Covid-19
12thMarch, 2020: Prime Minister tweets on urgency and importance of situation.
14thMarch, 2020: Still below 100 case, but 52 labs ready to test
18thMarch, 2020: At below 175 cases, compulsory quarantine instituted.

Date	Number of Cases	Action Timeline by Modi Government
12-03-2020	73	**Prime Minister Narendra Modi tweets:** ***"The Government is fully vigilant about the situation due to COVID-19 Novel Coronavirus. Across ministries & states, multiple steps have been proactively taken to ensure safety of all. These steps are wide-ranging, from suspension of Visas to augmenting healthcare capacities."***
		Prime Minister held telephonic discussions with the Prime Minister of the UK, H.E. Boris Johnson, with Prime Minister of Israel H.E. Benjamin Netanyahu on fight against COVID-19
13-03-2020		Relaxation in the T&C for 'Other Service Providers' in the wake of Corona virus COVID-19 concerns
14-03-2020	84	Network of labs equipped to test COVID-19 have been expanded to 52, in total.
		Disaster Management Act, the States/UTs can now draw funds from the State Disaster Response Fund, in addition to the funds from the state government and the NHM. Ministry of Home Affairs has issued detailed guidelines to States/UTs in this regard.
15-03-2020	110	**PM Narendra Modi led the way, in the spirit of collaboration and proposed creation of a COVID-19 Emergency Fund based on voluntary contributions from all the countries. also convened meeting of the SAARC leaders under India's leadership**
16-03-2020	125	PM urges people to share solutions for COVID-19 on MyGovIndia Hundreds of Indians stranded in Malaysia waiting at KLIA2 taken to different hostels,hotels etc. by High Commissioner of India, Kuala Lumpur
17-03-2020	147	Prime Minister held telephonic discussions with Crown Prince of Kingdom of Saudi Arabia His Royal Highness Mohammed bin Salman on fight against COVID-19
18-03-2020	167	MHRD issues directions to UGC, AICTE, NTA, NIOS, CBSE , NCTE and all autonomous organisations under it for the postponement of all examinations till 31st March, 2020
		Compulsory 14-day quarantine for those coming from Oman, UAE, Qatar, Kuwait **Travel of passengers from EU, EUFTA, Turkey and UK prohibited**

India reacting in war mode:

19th March, 2020: At less than 200 cases, Prime minister addresses nation calls for Janta Curfew. All international flights stopped after 22nd March, 2020.Covid-19 economic task force set up

21st March, 2020: 75 districts on Lock-down

Date	Number of Cases	Action Timeline by Modi Government
19-03-2020	195	Janta Curfew - Prime Minister in his address to the Nation, urged the people to voluntarily participate in the Janta Curfew for 14 Hours from 7 AM to 9 PM on the 22nd of March 2020.
		No scheduled international passenger aircraft shall be allowed to land in India w.e.f 22nd March 2020
		Indian Railways has announced additional measures to contain the spread of Corona Virus (COVID-19)
		Relaxation from compliance with certain provisions of the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015 due to the CoVID -19 virus pandemic
		Export of Ventilators prohibited categorr.
		Prime Minister announced the creation of 'COVID-19 Economic Response Task Force' under the Union Finance Minister.
20-03-2020	258	Ministry of Consumer Affairs fixes the retail prices of masks and Hand sanitizers are fixed at Rs 8.00 and Rs 10 for 2 ply, 3 ply and Rs 100 for every 200ml respectively. Prices to remain applicable till June 30, 2020
		Prime Minister interacted with all the Chief Ministers of the country through a video conference, and requested for augmenting of testing facilities and greater support to vulnerable sections of the society
21-03-2020	325	Only essential services will be allowed in 75 districts which have reported confirmed cases related to #Covid19India
		Prime Minister held a video conference with the Pharma Sector Representatives and asked the Pharma industry to work on manufacturing of RNA Testing Kits for COVID-19 on war footing.

Covid-19 actions continue:

22nd March, 2020: All train services, metro, inter-state buses suspended

22nd March, 2020: Indian capacity now to perform 50,000 tests per week

23rd March, 2020: Domestic flights stopped from 24th March, 2020

All this when India at still below 500 cases

Date	Number of Cases	Action Timeline by Modi Government
22-03-2020	390	1. All train services suspended till 31st March 2020 including sub-urban rail services. However, goods trains are exempted. 2. All metro rail services suspended till 31st March 2020. State Governments to issue orders allowing only essential services to operate in about 75 districts with confirmed COVID 19 cases. 3. Inter State passenger transport also to be suspended till 31st March 2020.
		By 22nd March, India had the capacity to perform 50k-70k tests/week in Govt labs.(France did 10k,UK-16k,USA-26k, Germany-42k,Italy-52k,SouthKorea-80k).
		Indian Railways relaxes Refund Rules for PRS counter generated ticket. Passengers are advised to avail the facility and avoid coming to Railway Station.
23-03-2020	492	States asked to strictly enforce lockdown in the specific districts, legal action against violators.
		The operations of domestic schedule commercial airlines shall with effective from the mid night 23.59 IST, March 24, 2020
		PM interacts with key stakeholders from Electronic Media. He asked the channels to spread scientific reports, involve informed people in their discussions and counter the spread of misinformation.
		IRDA has given Insurers to give extension of 30 days for payment of renewal premium, 15 day delay given to insurers for submission of monthly returns & 30 day delay for quarterly returns.
		Relaxation from compliance to REIs and InvITs due to the CoVID - 19 virus pandemic
		Relaxation from compliance with certain provisions of the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015 and certain SEBI Circulars due to the CoVID - 19 virus pandemic continuation
		Relaxation in compliance with requirements pertaining to Mutual Funds
		PM Narendra Modi interacted with industry representatives via video conference from ASSOCHAM, FICCI, CII and several local Chambers, requested them to use their CSR funding for humanitarian causes related to the pandemic

24thMarch, 2020: Prime Minister addresses nation and announces NATION WIDE Lock down. GST relief measures announced. NDMA activated by PM's direction. Export of respirators banned.

India is still below 600 cases. But Covid-19 fight moves to next gear.

Date	Number of Cases	Action Timeline by Modi Government
24-03-2020	562	The National Disaster Management Authority (NDMA), chaired by the Prime Minister Shri Narendra Modi, in exercise of the powers under the National Disaster Management Act, 2005, has issued an Order today, directing the Ministries/ Departments of Government of India, and the State/Union Territory Governments and State/ Union Territory Authorities to take effective measures to prevent the spread of COVID-19 in the country.
		Investment Promotion & Facilitation Agency, under the Ministry of Commerce and Industry launched the Invest India Business Immunity Platform. It is designed as a comprehensive resource to help businesses and investors get real-time updates on India's active response to COVID-19 (Coronavirus).
		Export of all artificial respiratory apparatus or oxygen therapy apparatus or any other breathing appliance/device prohibited; No Export of Sanitizers also
		Ministry of Railways decides to treat contract and outsourced employees 'on duty' during the period of suspension of Passengers services
		ECI defers Rajya Sabha poll in view of COVID-19
		MPLADS funds may be utilized address the challenges in the fight against COVID-19.This will facilitate Members of Parliament to recommend funds for purchase of equipments for Government Hospitals / Dispensaries for medical testing and screening of patients and also facilitate in setting up other related facilities in their respective constituencies.
		Department of Disabilities asks state governments to make all the information relating to COVID 19 be made available in accessible formats for the benefit of persons with disabilities

Day 01 of Lock down. India is yet below 650 cases. Indian navy helps set up testing facility in Goa. Local administrations everywhere sensitized to react in real time to needs of people. India enforcing the biggest country wide lock-down in the world.

Date	Number of Cases	Action Timeline by Modi Government
		Department of Disabilities asks state governments to make all the information relating to COVID 19 be made available in accessible formats for the benefit of persons with disabilities
25-03-2020	649	Prime Minister Narendra Modi had a telephone conversation today with the President of the Russian Federation H.E. Mr Vladimir V. Putin to discuss the global situation in the context of COVID-19 pandemic.
		Prime Minister Narendra Modi interacted with the people of his constituency - Varanasi through video conferencing to discuss the outbreak of COVID-19
		Indian Navy Aircraft Transports Medical Team to Pune for Training to set up COVID Test Facility at Goa
		Army facility in Jodhpur received 277 evacuees from Iran that included 273 pilgrims.
		Group of Ministers reviews current status, and actions for management of COVID-19
		MHA issues an Addendum to the Guidelines regarding Nationwide Lockdown to fight COVID-19. Additional essential Goods and Services included in the Exempt List
		National Book Trust of MHRD launches #StayHomeIndiaWithBooks initiative. 100+ books can be downloaded from NBT's website in PDF format
		Ministry of Railways extends Cancellation of Passenger Train Services till 2400 hrs of 14th April, 2020. Freight Trains to continue operation to ensure supply of essential commodities

Day 02 of Lockdown:

India is at less than 750 cases as on 26thMarch, 2020. Massive economic package announced. DBT to farmers, poor, MNREGA workers, elders, women. Free Ujjwala gas cylinders. Health emergency as well as economic situation is being tackled.

Date	Number of Cases	Action Timeline by Modi Government
26-03-2020	724	Prime Minister Narendra Modi had a telephonic conversation with His Highness Sheikh Mohammed Bin Zayed Al Nahyan, the Crown Prince of Abu Dhabi to exchange information and views on the ongoing COVID-19 pandemic Prime Minister Narendra Modi had a telephonic conversation with His Highness Sheikh Tamim Bin Hamad al Thani, the Amir of the State of Qatar. The leaders discussed the ongoing developments related to the COVID-19 global pandemic and its social and economic impact. Further relaxations from compliance with certain provisions of the SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015 (LODR) and the SEBI circular dated January 22, 2020 relating to Standard Operating Procedure due to the CoVID -19 virus pandemic" An Extraordinary Virtual G20 Leaders' Summit was convened to discuss the challenges posed by the outbreak of the COVID-19 pandemic and to forge a global coordinated response. Raksha Mantri Shri Rajnath Singh reviews Ministry of Defence action plan to deal with COVID-19 where he urged the Armed Forces, Defence PSUs and other organisations to gear up preparedness and provide all required assistance to civilian authorities PM Garib Kalyan Package provides RS 1,75,000 crore to the poor to help them fight the battle against Corona Virus •Insurance scheme for health workers fighting COVID-19 in Government Hospitals and Health Care Centres: Safai karamcharis, ward-boys, nurses, paramedics, technicians, doctors and specialists and other health would be covered by a Special insurance Scheme •Under Pradhan Mantri Garib Kalyan Yojana: a.Farmers: **Each farmer would be given Rs 2000** during the month of April 2020: would cover 8.7 crore farmers; total amount: INR 16000 crore b.Poor Households: To help women run their household during this difficult period **20.40 crores PMJDY women account-holders would be given an ex-gratia of Rs.500 per month** for next three months. c.Gas cylinders: g **as cylinders, free of cost, would be provided to 8 crore poor families** for the next three months. Three gas cylinders would be provided during this period. d.Low wage earners in organised sector: **Wage-earners below Rs.15000 per month in businesses having less than 100 workers are at risk of losing their employment. Government proposes to pay 24 percent of their monthly wages into their PF accounts for next three months.** e.Support for **3 crore senior citizens (above 60 years), widows and Divyang: Government will give them Rs 1000** to tide over difficulties during next three months. f.Food: 80 crore individuals, i.e, roughly two-thirds of India's population would be provided double of their current entitlement over next three months. i.Nutrition: one kg per family, of pulses like moong, toor, chana, urad would be provided for next three months. g.MNREGA: **MNREGA wages would be increased by Rs 20 with effect from 1 April, 2020.** h.EPF Regulations will be amended to include Pandemic as the reason to allow non-recoverable advance of 75% of the amount or three months of the wages, whichever is lower, from their accounts. i.Self-Help Groups: Limit of collateral free lending would be increased from Rs 10 to Rs 20 lakhs. This will impact 6.85 crore households Union Minister of Health & Family Welfare, Dr. Harsh Vardhan held a meeting to review actions and preparedness for COVID-19 management through video conferencing with Health Ministers, Chief Secretaries of States and UTs Central Provident Fund Commissioner (CPFC) had directed to process pension payment for 65 lakh pensioners alongwith requisite cheques to all pension disbursing banks in advance so that no inconvenience is caused to pensioners on account of nationwide lock down for containing Covid-19 outbreak. DST sets up task force for mapping of technologies by Start Ups on COVID-19

Day 03 of Lock down:

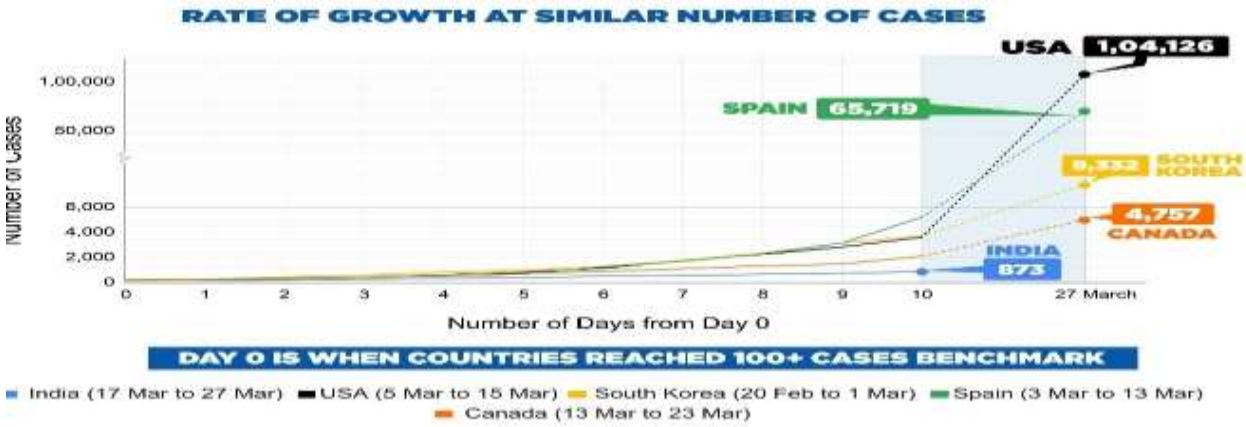
India still less than 900 cases. RBI announces relief:

1. Massive cut in rates
2. All kinds of EMIs deferred for three months.
3. Working capital loans made easier.

New tracking measures for International passengers.

Number of Cases	Action Timeline by Modi Government
873	**RBI announces a slew of measures which injects a total liquidity of INR 3.74 lakh crore to the system.** a.Accommodative stance of monetary policy as long as necessary to revive growth, while keeping inflation within the target. b.A cumulative reduction in the policy repo rate of 135 basis points c. **RBI Slashes Repo Rate by 0.75% to 4.4%; Reverse Repo Rate Slashed by 0.9% to 4%** d.RBI is monitoring financial conditions, will provide additional liquidity support if required e.CRR of all banks reduced by 100 basis points to 3.0 per cent of net demand and time liabilities (NDTL) with effect from the reporting fortnight beginning March 28, 2020 for a period of one year. f.Decided to increase the accommodation under the marginal standing facility (MSF) from 2 per cent of the statutory liquidity ratio (SLR) to 3 per cent with immediate effect. This measure will be applicable up to June 30. g. **Banks to allow 3-months moratorium on all loans allowed. Loans interest pay to be deferred by 3 months** a.In respect of working capital facilities sanctioned in the form of cash credit/overdraft, three months on payment of interest in respect of all such facilities outstanding as on March 1, 2020 is deferred h.Implementation of NSFR is deferred by six months to October 1, 2020. i.Implementation of the last tranche of 0.625 per cent of the CCB from March 31, 2020 to September 30, 2020 is deferred **15 lakh international travellers arrived in India between Jan 18 and Mar 25, need monitoring of all: Cabinet Secretary to states** Relaxation from compliance with certain provisions of the SAST Regulations, 2011 due to the COVID-19 pandemic

Now the below graph shows that India has been proactive till now and that is why India is relatively safe so far.

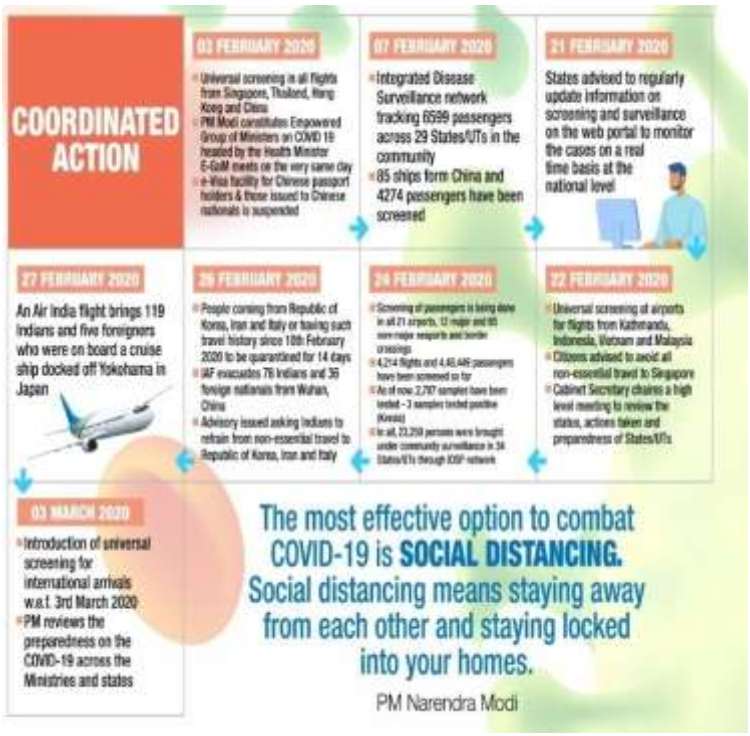


Phase 01:
Early recognition: Jan7-Feb 2

Phase 02:
Coordinated Action: Feb 3- March 3

Phase 03:
All out war: March 4- March 25

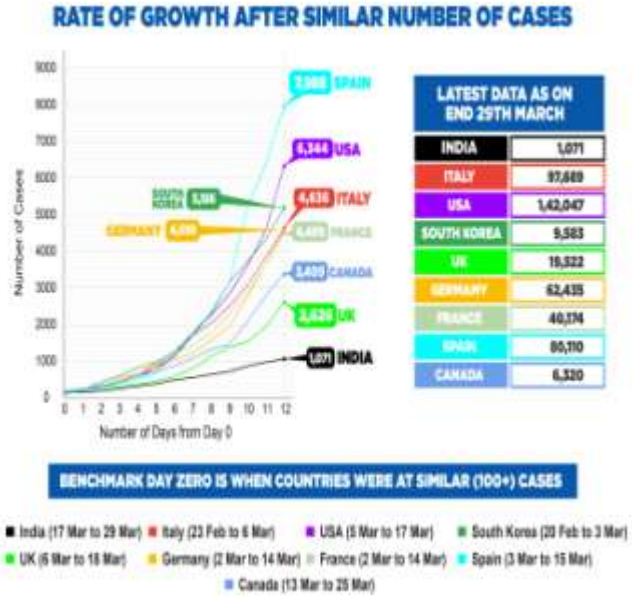
Phase 04:
lockdown: March 25

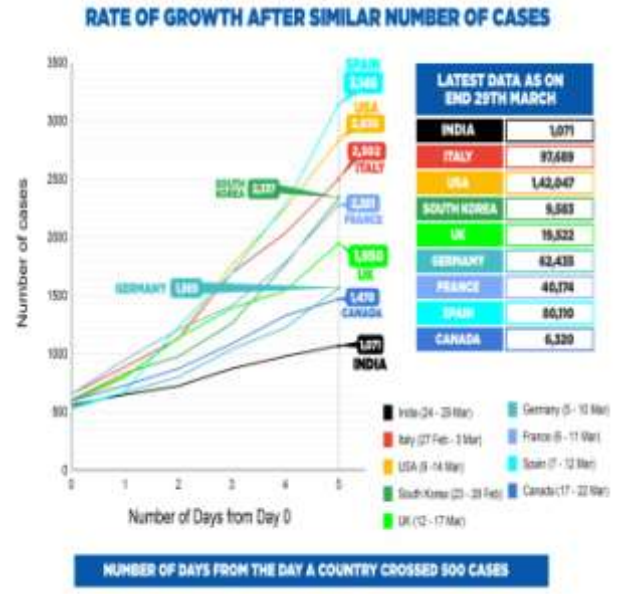

COORDINATED ACTION
03 FEBRUARY 2020
Universal screening in all flights from Singapore, Thailand, Hong Kong and China
PM Modi constitutes Empowered Group of Ministers on COVID 19 headed by the Health Minister
E-GoM meets on the very same day
e-Visa facility for Chinese passport holders & those issued to Chinese nationals is suspended
07 FEBRUARY 2020
Integrated Disease Surveillance network tracking 6599 passengers across 29 States/UTs in the community
85 ships form China and 4274 passengers have been screened
21 FEBRUARY 2020
States advised to regularly update information on screening and surveillance on the web portal to monitor the cases on a real time basis at the national level
27 FEBRUARY 2020
An Air India flight brings 119 Indians and five foreigners who were on board a cruise ship docked off Yokohama in Japan
26 FEBRUARY 2020
People coming from Republic of Korea, Iran and Italy or having such travel history since 15th February 2020 to be quarantined for 14 days
IAF evacuates 76 Indians and 36 foreign nationals from Wuhan, China
Advisory issued asking Indians to refrain from non-essential travel to Republic of Korea, Iran and Italy
24 FEBRUARY 2020
Screening of passengers is being done in all 21 airports, 12 major and 65 non-major seaports and border crossings
4,214 flights and 4,40,446 passengers have been screened so far
As of now, 2,707 samples have been tested – 3 samples tested positive (Kerala)
In all, 23,259 persons were brought under community surveillance in 34 States/UTs through IDSP network
22 FEBRUARY 2020
Universal screening at airports for flights from Kathmandu, Indonesia, Vietnam and Malaysia
Citizens advised to avoid all non-essential travel to Singapore
Cabinet Secretary chairs a high level meeting to review the status, actions taken and preparedness of States/UTs
03 MARCH 2020
Introduction of universal screening for international arrivals w.e.f. 3rd March 2020
PM reviews the preparedness on the COVID-19 across the Ministries and states
The most effective option to combat COVID-19 is SOCIAL DISTANCING.
Social distancing means staying away from each other and staying locked into your homes.
PM Narendra Modi

ALL OUT WAR AGAINST COVID-19
04 MARCH 2020
A total of 6,201 flights covering a total of 6,71,167 passengers were screened
Review by PMO: Meeting re-affirmed a pro-active "pan-government approach"
PM Modi announces that he would not be participating in the Holi festivities to practice social distancing
07 MARCH 2020
PM reviews the situation, advises to avoid mass gathering
10 MARCH 2020
Advisory issued to all passengers with travel history to China, Hong Kong, Republic of Korea, Japan, Italy, Thailand, Singapore, Iran, Malaysia, France, Spain and Germany to undergo self-imposed quarantine for a period of 14 days
15 MARCH 2020
PM Modi convenes meeting of the SAARC leaders under India's leadership and proposed creation of a COVID-19 Emergency Fund based on voluntary contributions from all the countries
14 MARCH 2020
Network of labs equipped to test COVID-19 have been expanded to 52, in total
States/UTs can now draw funds from the State Disaster Response Fund, along with funds from the state government and NHM
12 MARCH 2020
PM holds telephonic discussions with the Prime Minister of the UK & Israel
16 MARCH 2020
PM urges people to share solutions for COVID-19 on MyGovIndia
Hundreds of Indians stranded in Malaysia awaiting of #SAVE taken to different hostels,hotels etc. by High Commissioner of India, Kuala Lumpur
17 MARCH 2020
Prime Minister holds telephonic discussions with Crown Prince of Kingdom of Saudi Arabia on fight against COVID-19
18 MARCH 2020
MHRD issues directions to all organisations under it to postpone all exams till 31st March, 2020
Compulsory 14-day quarantine for those coming from Oman, UAE, Qatar, Kuwait
Travel of passengers from EU, EFTA, Turkey and UK prohibited
22 MARCH 2020
MTNL offers double data in all broadband plans of landline, mobile for a month
Janta Curfew observed – a complete lockdown to break the social chain
All train services, metro rail services and Inter State passenger transport suspended till 31st March 2020; Goods trains are exempted
By 22nd March, India had the capacity to perform 90k-70k tests/week in Govt labs (France did 10k,UK-14k,USA-26k, Germany-42k,Italy-52k,South Korea-66k)
Indian Railways release Refund Rules for PRS counter generated ticket. Passengers are advised to avail the facility and avoid coming to Railway Station
21 MARCH 2020
Only essential services allowed in 75 districts which have reported confirmed COVID-19
PM Modi interacts with the Pharma Sector Representatives; manufacturing of RNA Testing Kits for COVID-19 on war footing
20 MARCH 2020
Ministry of Consumer Affairs fixes the retail prices of masks and hand sanitizers
PM Modi interacts with all the Chief Ministers of the country through a video conference on COVID19
19 MARCH 2020
PM Modi in his address to the Nation on the 19th of March 2020, urged people to voluntarily participate in the Janta Curfew from 7 AM to 9 PM on the 22nd of March 2020
No scheduled international passenger aircraft shall be allowed to land in India w.e.f 22nd March 2020
PM announces the creation of "COVID-19 Economic Response Task Force" under the Union Finance Minister
23 MARCH 2020
States asked to strictly enforce lockdown, legal action against violators
The operations of domestic schedule commercial airlines suspended from 23.59 IST, March 24, 2020
In separate meetings, PM interacts with key stakeholders from Electronic Media and industry representatives from ASSOCHAM, FICCI, CII and several local Chambers
24 MARCH 2020
Relief measures in Income Tax, GST, Customs, Central Excise, Corporate Affairs, Insolvency & Bankruptcy Code (IBC), Factories, Banking Sector and Commerce announced
Export of ventilators & all artificial respiratory apparatus or oxygen therapy apparatus or any other breathing appliance/device prohibited
MPLADS funds allowed to be used to address the challenges in the fight against COVID-19

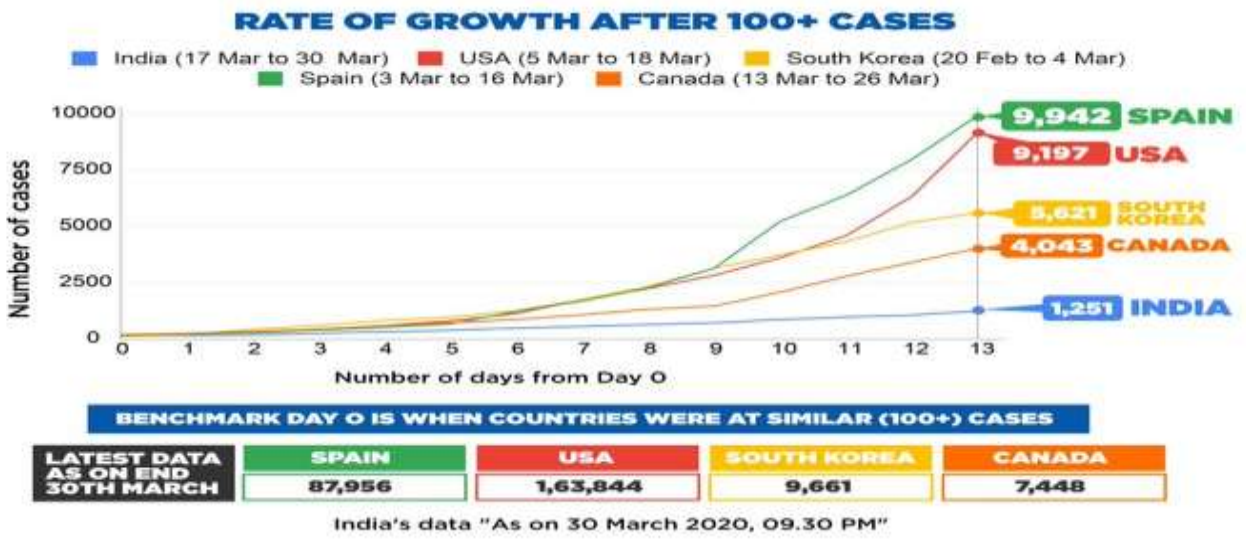
Growth rate of Covid-19 cases, benchmark with larger pool of countries.

Graph 01: Benchmark at 100+cases (Day 0+ 12 days graph)
Graph02: Benchmark at 500+ cases (Day 0+ 5 days graph)

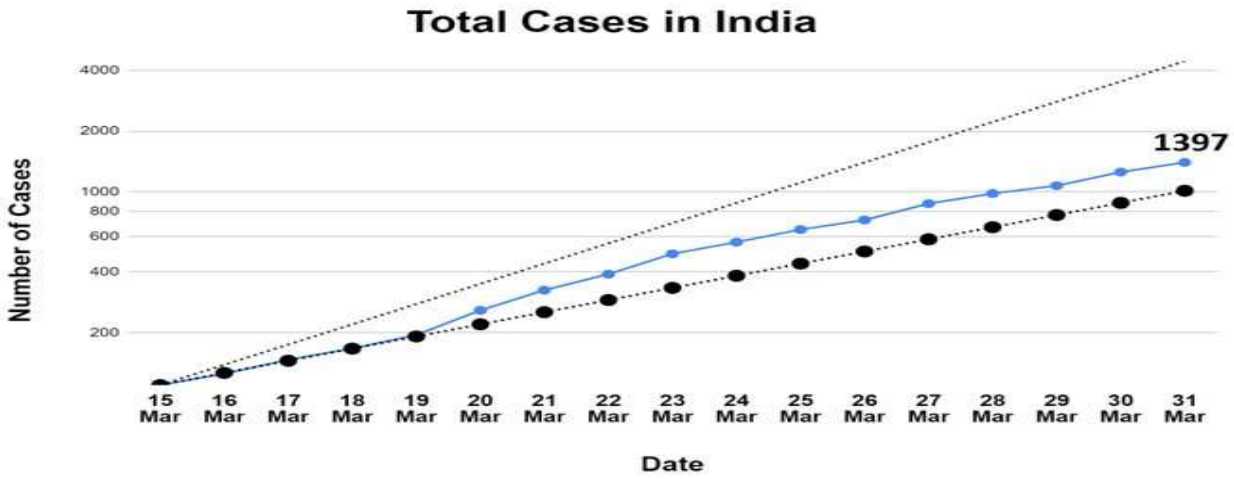




Day 13:
since India crossed 100+ cases.

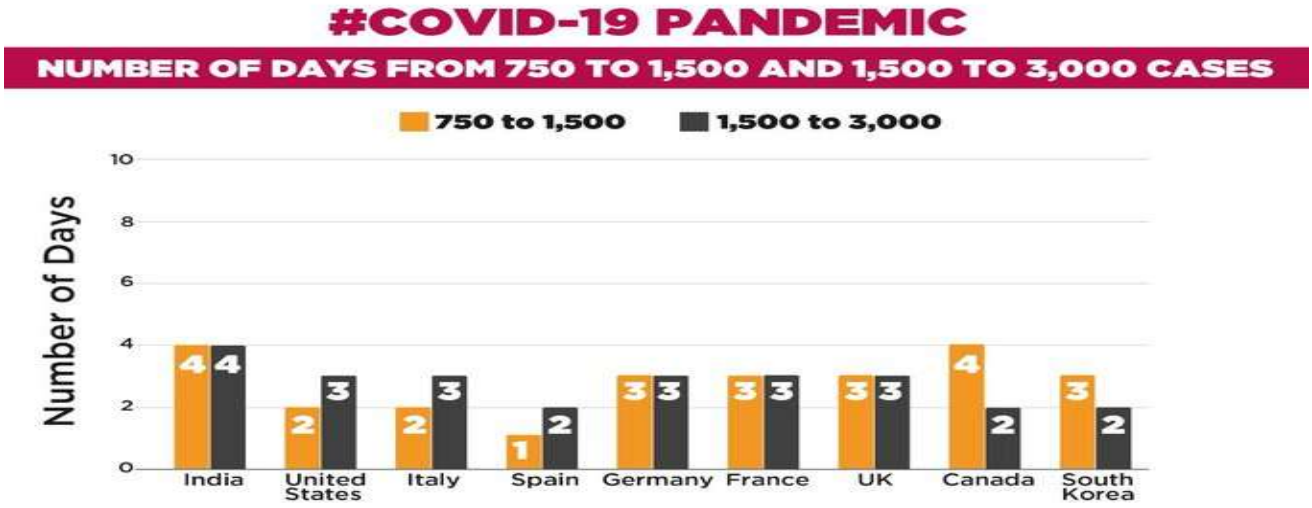


Latest data of cases on 31st March, total 1397 reported confirmed cases. The graph is trending towards doubling in every 5 days (not more serious every 3 days).

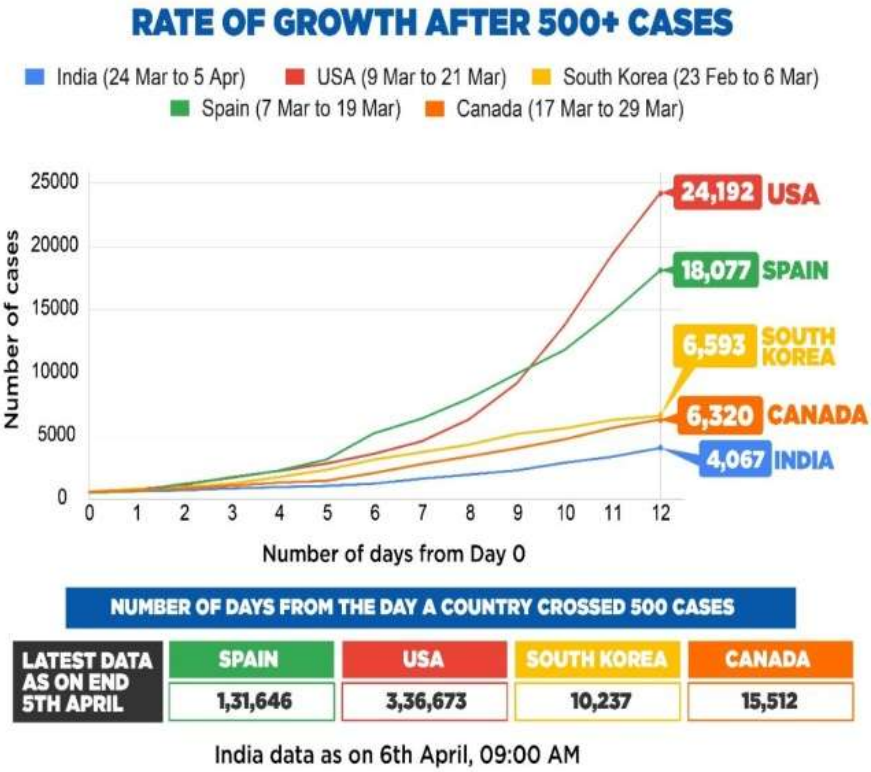


The official data of confirmed cases of Covid-19 in India is 2547 cases as of 6PM on 3rd April, 2020. AS of 30th March, 2020 we were just 1251 cases. Seems the problem is not small.

Now India needs to be more cautious. It took 4 days to register 750 cases of Covid-19, and in just 4 more days 1500+ cases got registered.



It took 21 days to reach from 100+ cases to 4,000+ cases. In terms of daily compound rate of growth, India is doing better.



NUMBER OF DAYS FROM THE DAY A COUNTRY CROSSED 500 CASES

LATEST DATA AS ON END 5TH APRIL	SPAIN	USA	SOUTH KOREA	CANADA
	1,31,646	3,36,673	10,237	15,512

India data as on 6th April, 09:00 AM

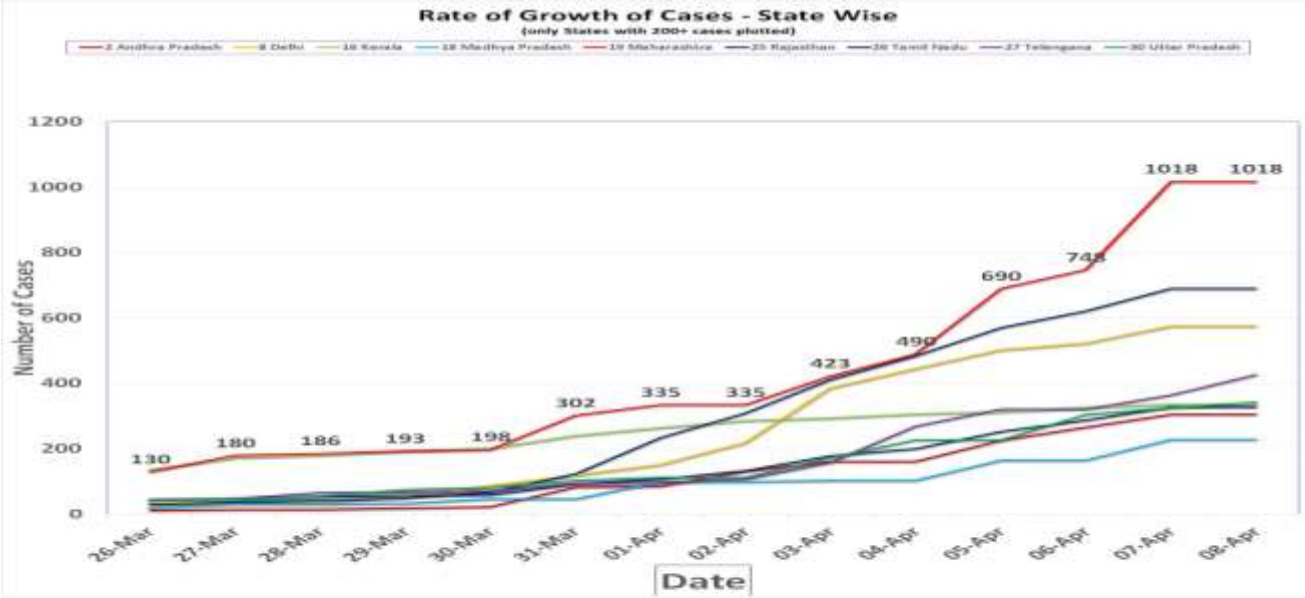
Before 31st March, India reported about 100+ cases/day for four days and much lower than that before. Data of 7th April, 2020.

Date	Cases per da	Total Cases	Total Deaths	Additional Deaths
31 Mar	386	1637	38	6
1 April	328	1965	50	12
2 April	336	2301	56	6
3 April	601	2902	68	12
4 April	472	3374	77	9
5 April	693	4067	109	32
6 April	354	4421	114	5
7 April	368	4789	124	10
Data for each date, before 7th April, is updated at 9 AM as per MoHFW data				
Data for 7th April is incremental cases reported between 9 AM and 6 PM				

In 24 hr period between 7th April and 8th April (morning 9 AM to 9 AM), 773 new cases were added. In the 24 hour period between evening 6PM on 7th April to 6 PM on 8th April: 485 new cases.

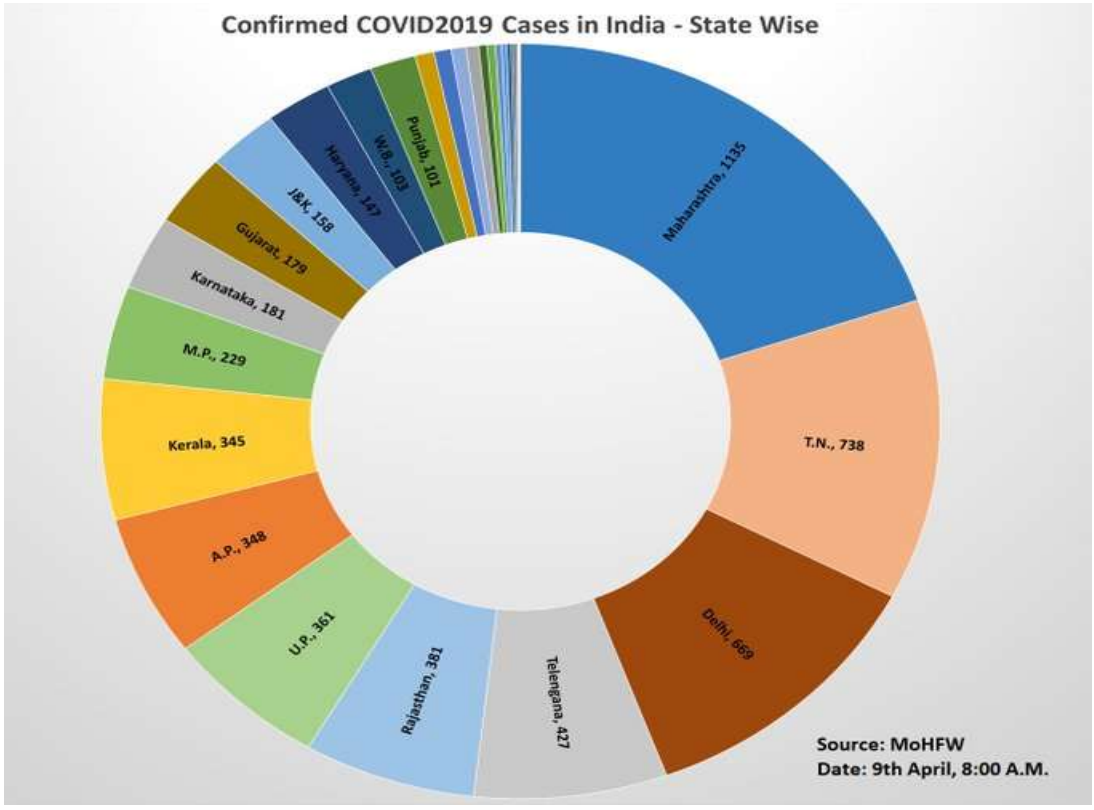
A chart of number of Covid-19 cases, for states of India with 200+ cases.

1. Maharashtra is clearly a state with continuous cases rising.
2. Uttar Pradesh, Rajasthan and Kerala seems to be somewhat stabilized.
3. Tamil Nadu and Delhi rising.



Note:
1. Data as per MoHFW at 5:00 PM, 8th April
2. Some state data has not been updated in the evening update. Their line for 8th April will thus be flat.

Data on 9th April, 2020, state wise of Covid-19 cases in India with 100+ cases.



Comparative analysis:
In the context of Covid-19, India reacted ahead of almost other country , 17th January,2020

Screening International Passengers from China or via China									
India	USA	Italy	France	Spain	Iran	UK	Japan	Singapore	Germany
17th Jan	17th Jan	21st Jan	25th Jan	24th Jan	23rd Jan	22nd Jan	17th Jan	17th Jan	25th Jan

India issued travel advisories on 30thJasnuary, 2020, again leading the world's reaction. At this stage, India had ZERO cases. This was an important decision because at this time world was confused.

Travel Advisory against travel to China										
India	USA	Italy	France	Spain	Iran	UK	Japan	Singapore	South Korea	Germany
30th Jan	30th Jan	31th Jan	29th Jan	29th Jan	31st Jan	29th Jan	31st Jan	21st Jan	3rd Feb	29th Jan

From 17th January, 2020 , when India started screening , to 30th January, 2020 , when India issued travel advisory to various actions in Feb and early March, came the time to issue a national Lock-down.

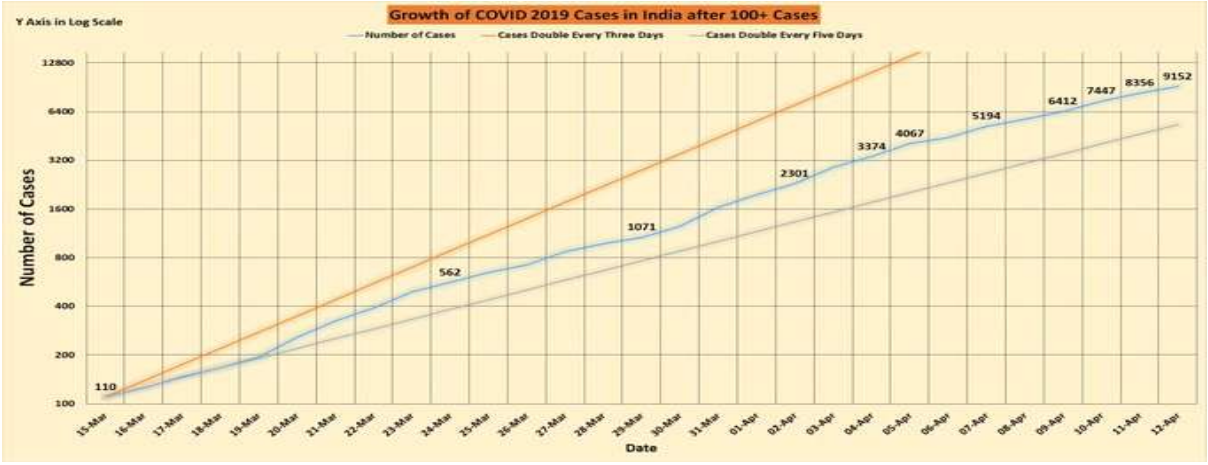
Number of cases registered before Lockdown								
Country	India	USA	Italy	France	Spain	Iran	UK	Germany
Number of Cases	562	13,789[1]	9,172	6,633	4,231	18,407	6650	22,364
Date	24th March	19th March	9th March	16th March	14th March	19th March	23rd March	21st March

[1] Partial lockdown

Growth rate of positive cases in India:

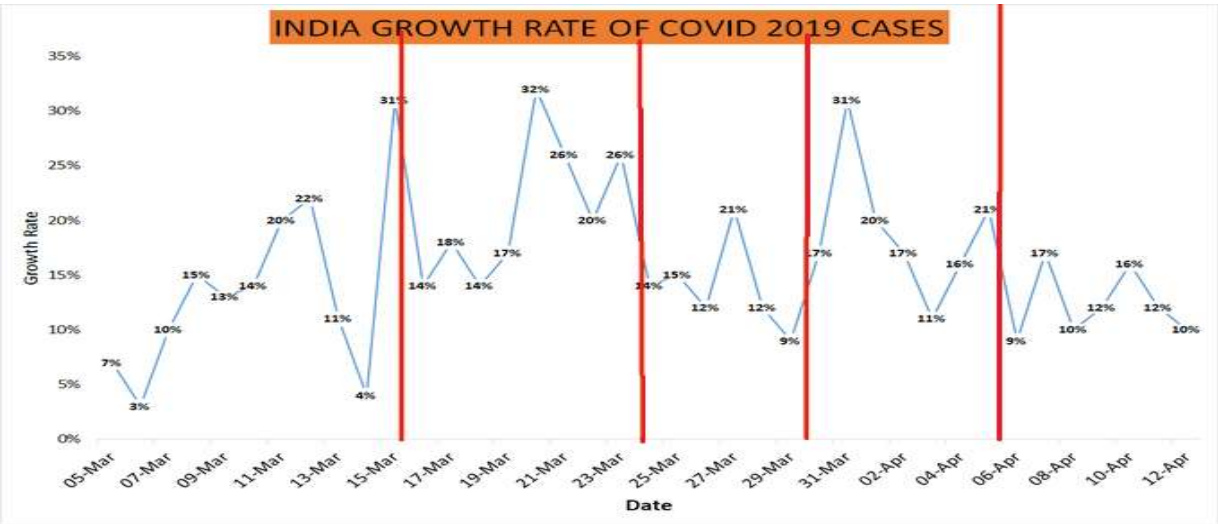
India's timely actions in containing threat of Covid-19 have had a significant impact. In the graph of rate of growth after 100+ cases, note:

1. Decline in rate after 25th March (lock down)
2. Spike from 31st March
3. Decline again from 6th April.

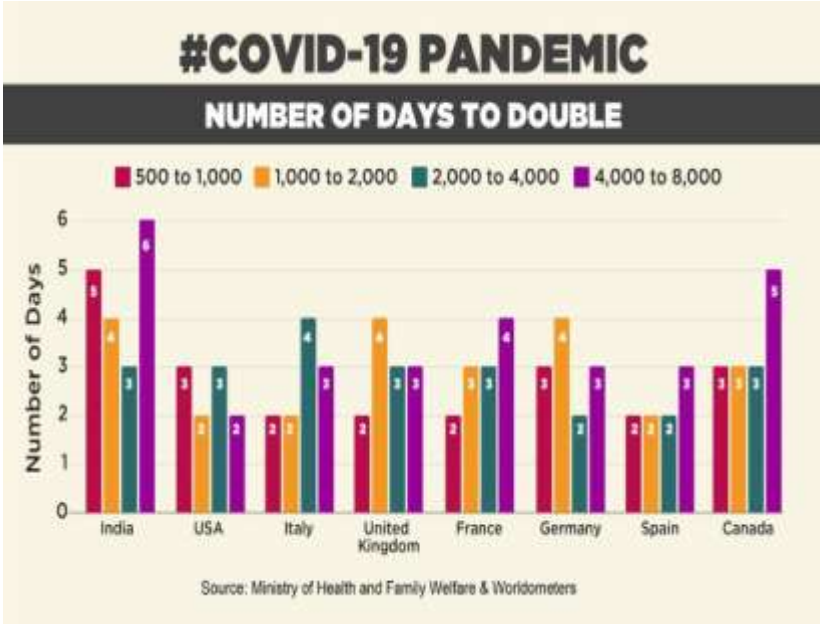


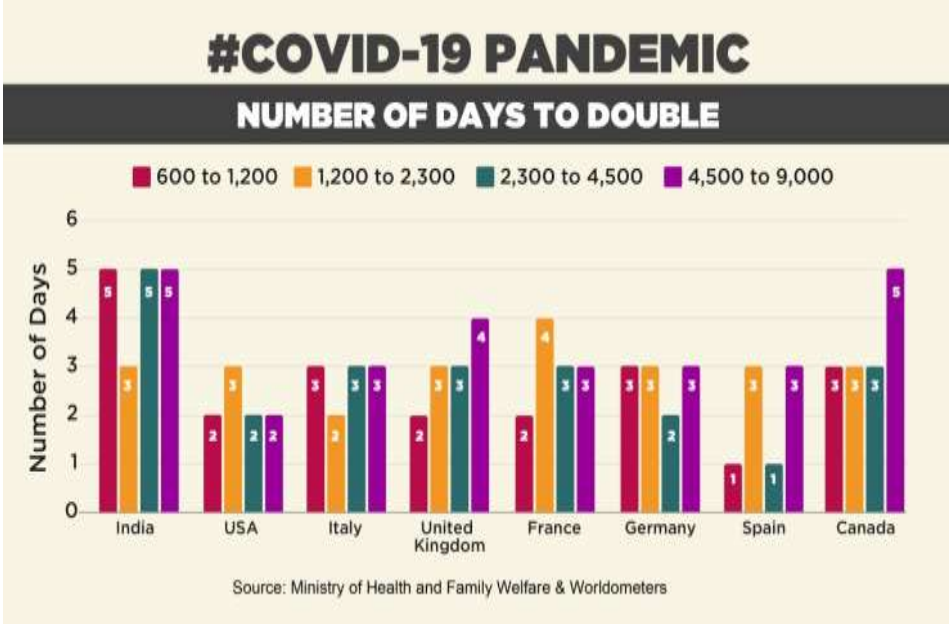
This is growth rate of Covid-19 cases. Four distinct phases are:

1. Growth rate trending up after 15th March, 2020.
2. Growth rate trending down after 25th March, 2020.
3. Growth rate trending up from 31st March, 2020.
4. Growth rate again trending down from 6th April, 2020.



Rate of doubling the Covid-19 cases in India as compared to some of other countries.
Graph01: Exact doubling till 8,000 cases
Graph02: Approximate doubling till 9,000 cases.





Total cases and total deaths per million population due to Covid-19(source: www.worldmeters.info)

Total cases
India: 6
USA: 1611
Spain: 3847
World average: 229
This comparison is very revealing

Total Deaths
India: 0.2
USA: 62
South Korea: 4

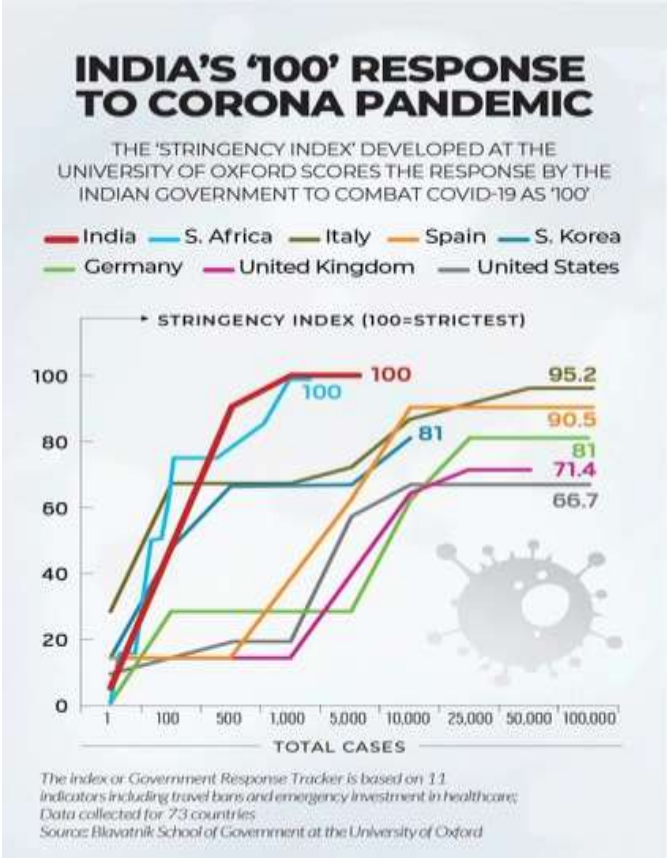
Country	Total Cases/1 Million Population	Deaths/1 Million Population
World	229	14
India	6	0.2
USA	1611	62
Spain	3487	355
Italy	2518	322
France	1986	212
Germany	1497	34
China	57	2
UK	1164	145
Canada	618	17
S. Korea	205	4
Sweden	1005	88
Japan	53	0.9
Malaysia	140	2
Thailand	37	0.5
Singapore	393	1
Hong Kong	134	0.5
Sri Lanka	9	0.3

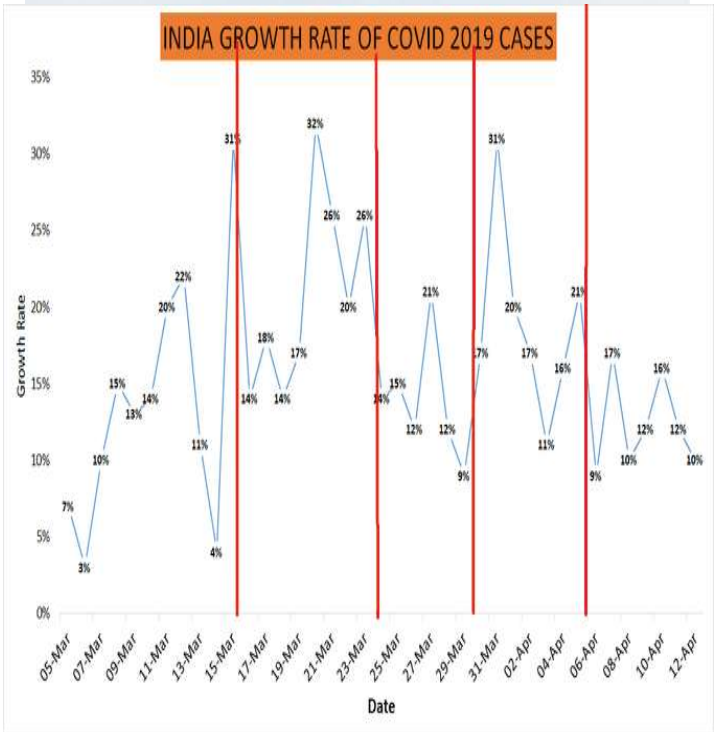
What about Testing?

1. India testing for Stage 2 situation –hence testing is for symptomatic and contact tracing. USA etc testing for community stage.
2. Even then, Indian positive rate is 4.2% per 100 tests. Much lower than other countries which are near 20%

Indian government has been the most pro-active and ahead of the curve as this stringency index validates.

Prime minister of India is handling Covid-19 at his very best. While every other country has floundered, or has had to reverse initial policy, India has consistently been on the curve. The strategy has worked so far.



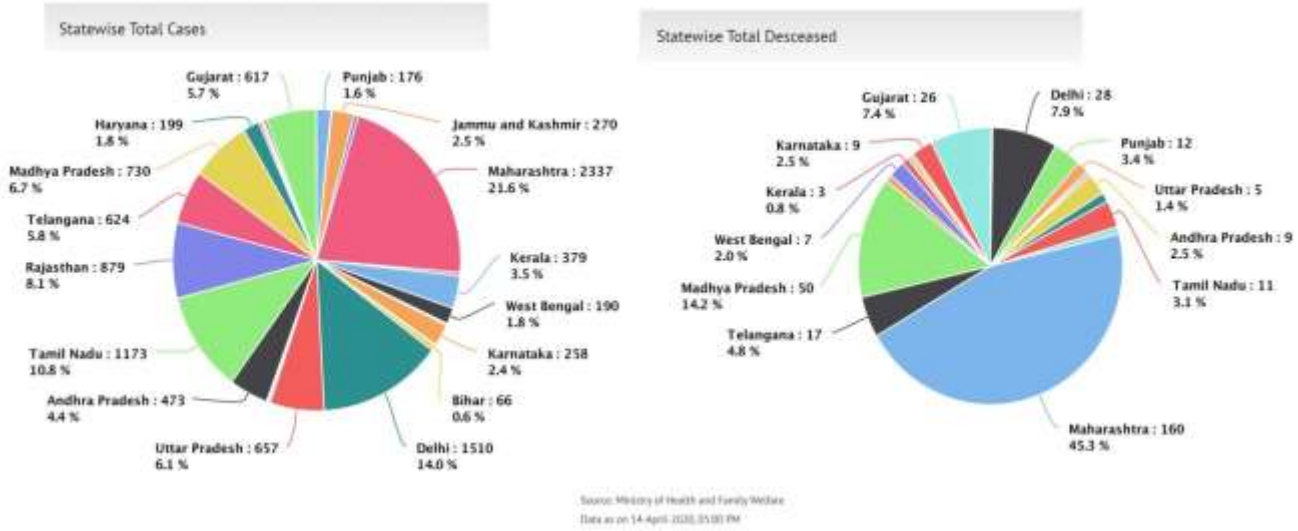


The handling of Covid-19 has shown PM of India at his very best.While almost every other country has floundered, or has had to reverse initial policy, India has consistently been on curve. The strategy has worked so far.

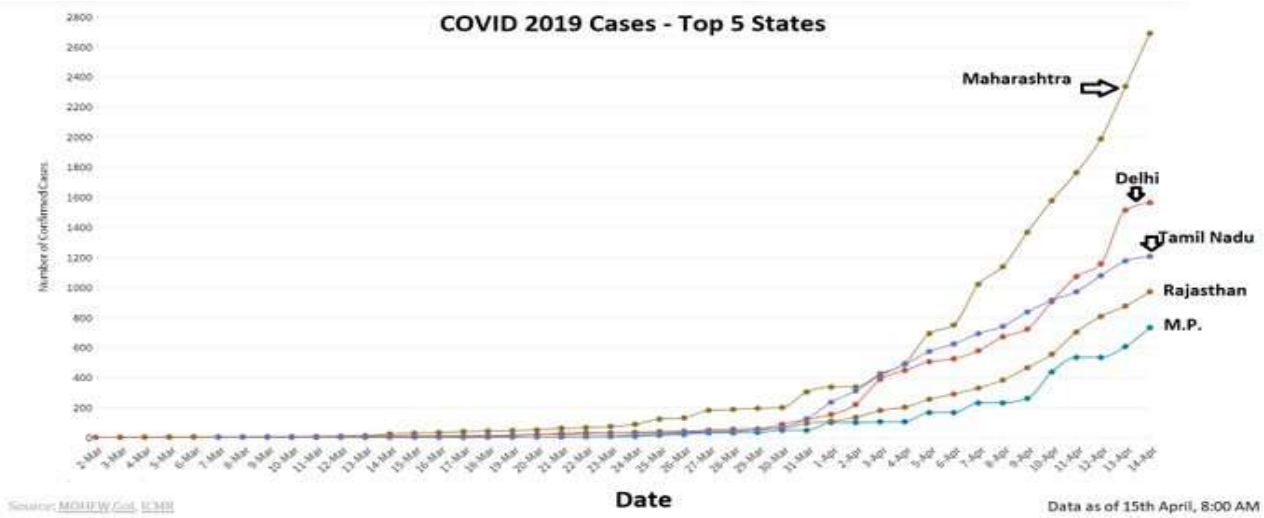
Lockdown 2.0 in India:

Why need of lockdown 2.0?

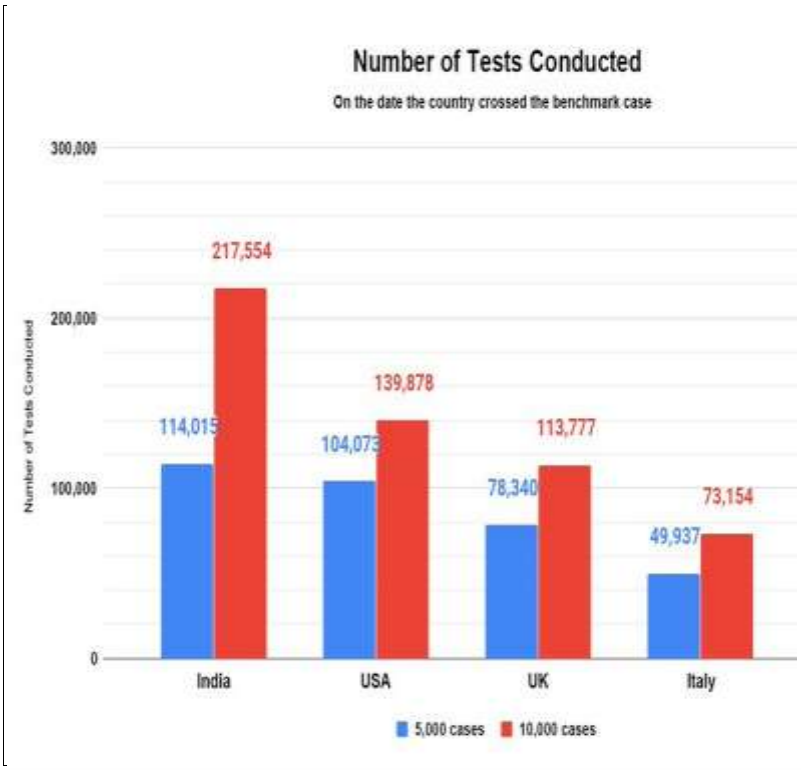
The graph shows the answer, as strategy is working that rate of growth in cases is less than other countries. So Indian government worked on same strategy and continue the lockdown to break the chain and spread of Covid-19

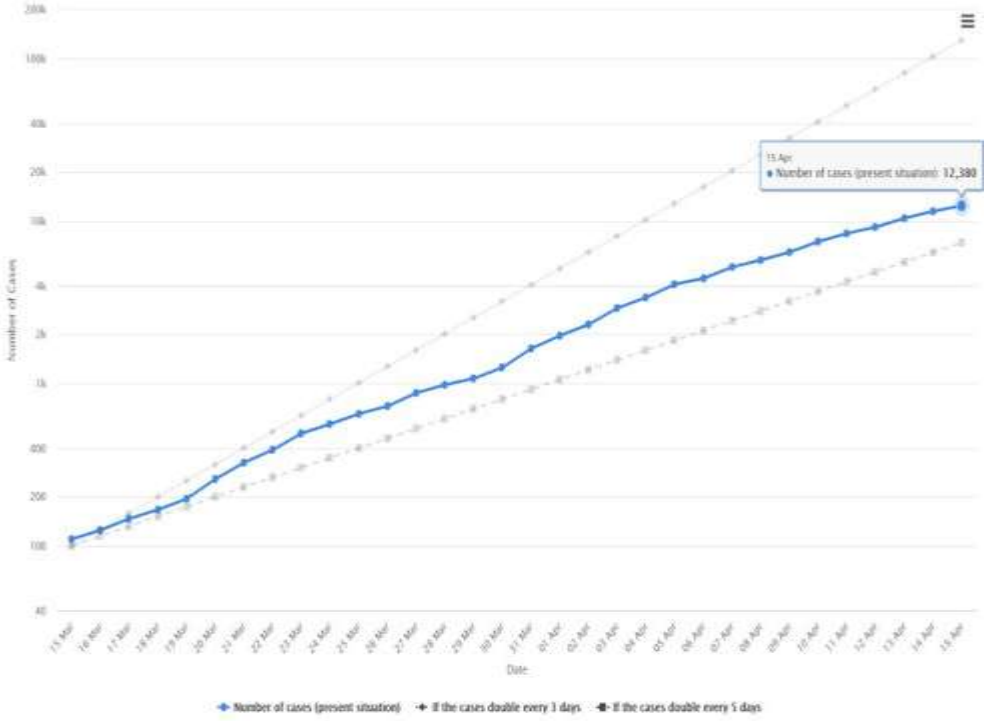


Graph of top 5 states with maximum number of Covid-19 cases. Several trends are noticeable. As late as 4th April, 2020 Maharashtra and Tamil Nadu graphs were converging after which they diverge dramatically. Rajasthan numbers steadily rising. Tamil Nadu seems to be flattening.

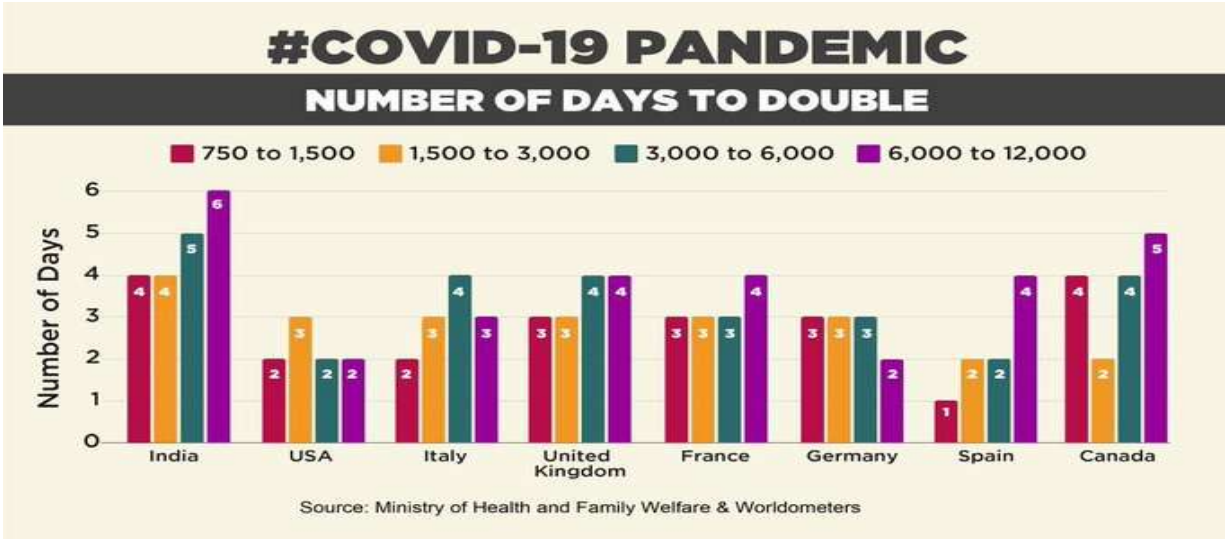


Here is a chart of some of the countries and how much they tested at the same stage as India (in terms of number of cases). India is testing for stage 2- symptomatic and contacts. Graph 2 shows India after 100+ cases. (Source:www.indiacovidstatus.org)



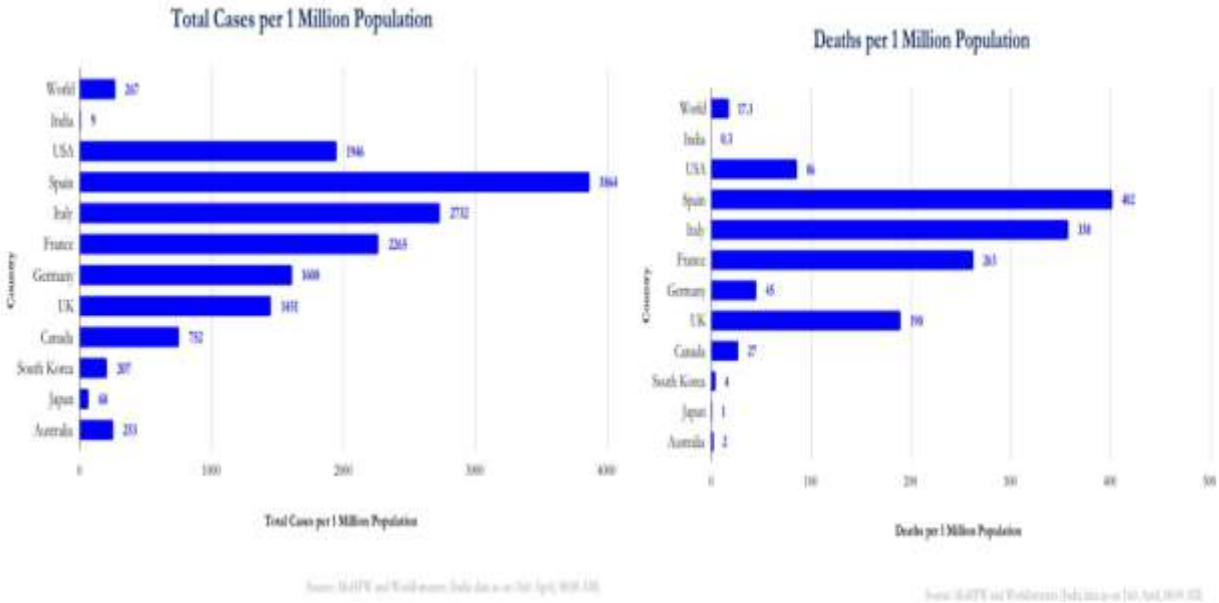


Comparative chart:
Doubling for India and some other countries.

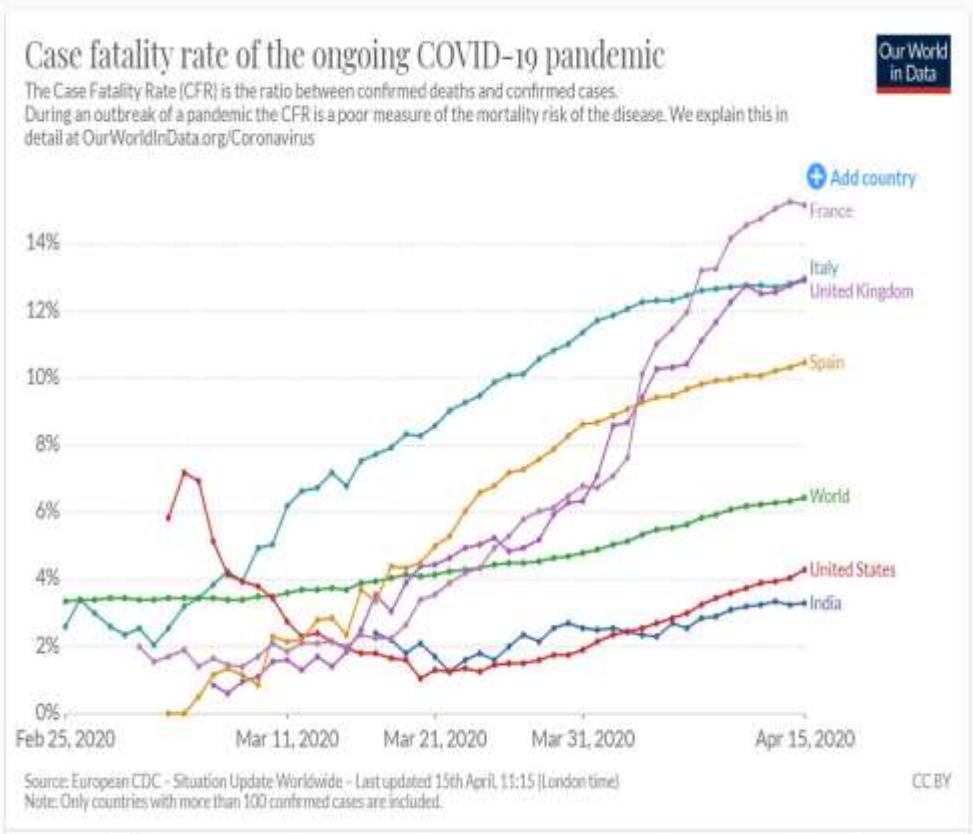


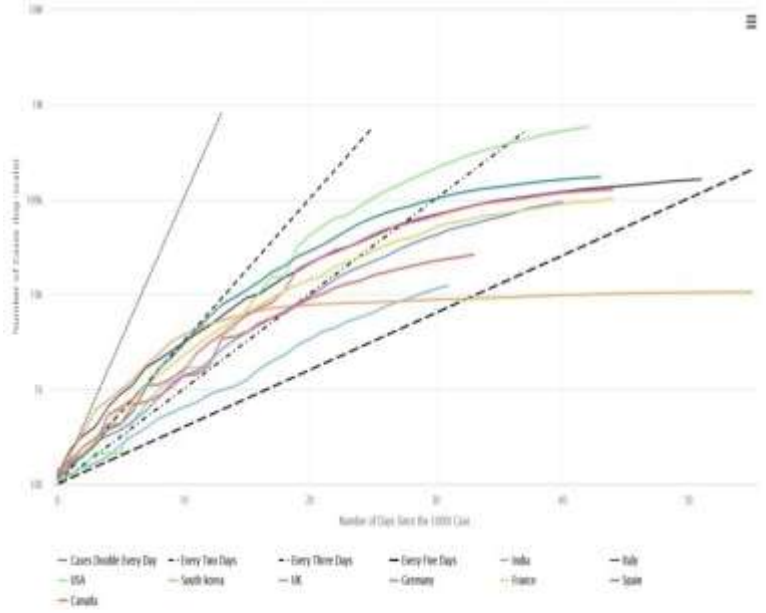
Total cases per million populations:
India: 9
USA: 1946
Spain: 3864
World average: 267

Total deaths per million population:
India: 0.3
UK: 190
South Korea: 4
World Average: 17.3



Experts agree that deaths/cases is a poor measure during an outbreak. Anyhow, here is the graph. India is among lowest. As for stage, it is surely an outcome of measures we took to not reach Stage 3/4, even 30 days after crossing 100+ cases. (graph on how other countries fared)





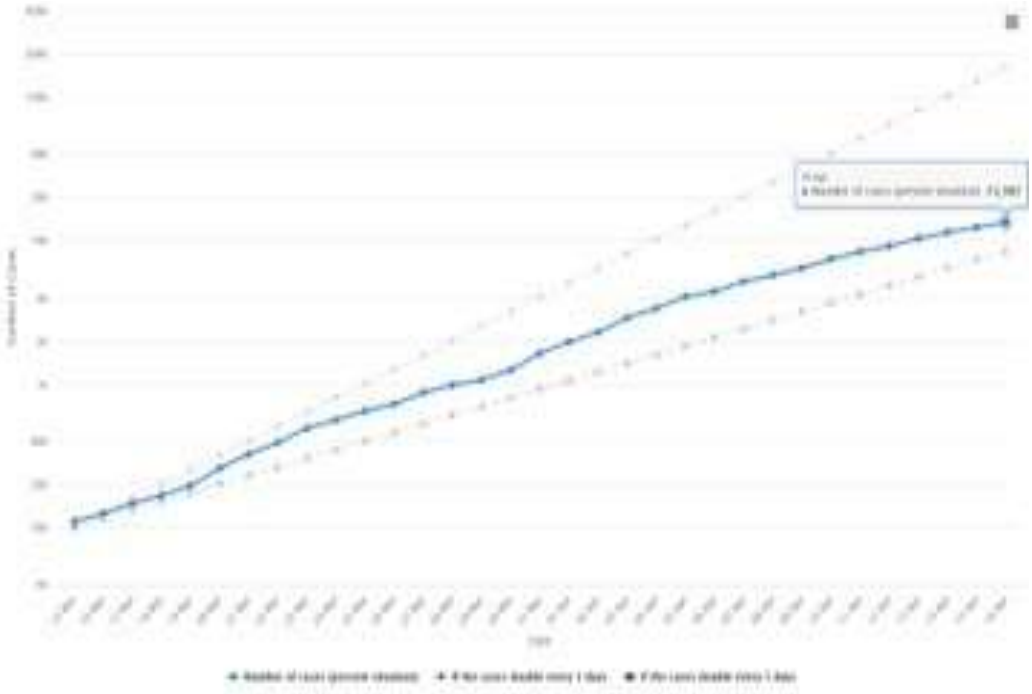
[redacted]

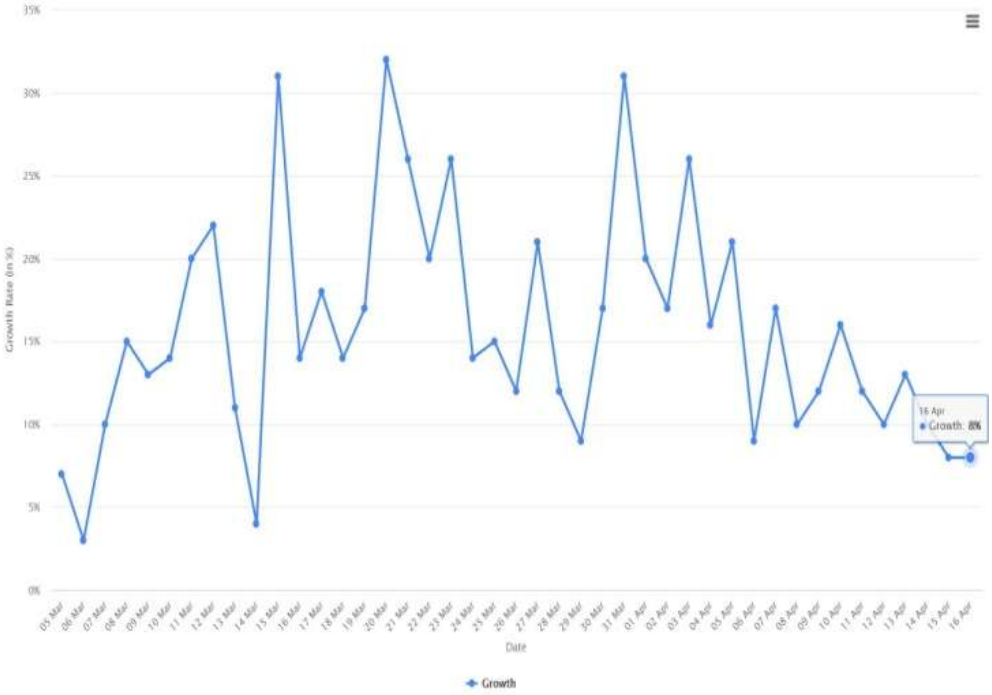
India is not testing randomly but only testing cases with prior history. That is symptomatic or with travel history or through contact tracing. Hence, the sample of tested people is already biased towards likelihood of finding infected people. Yet, the ration is around 4%. India's ratio of positive cases to total tests (4.1%), when the sample is already

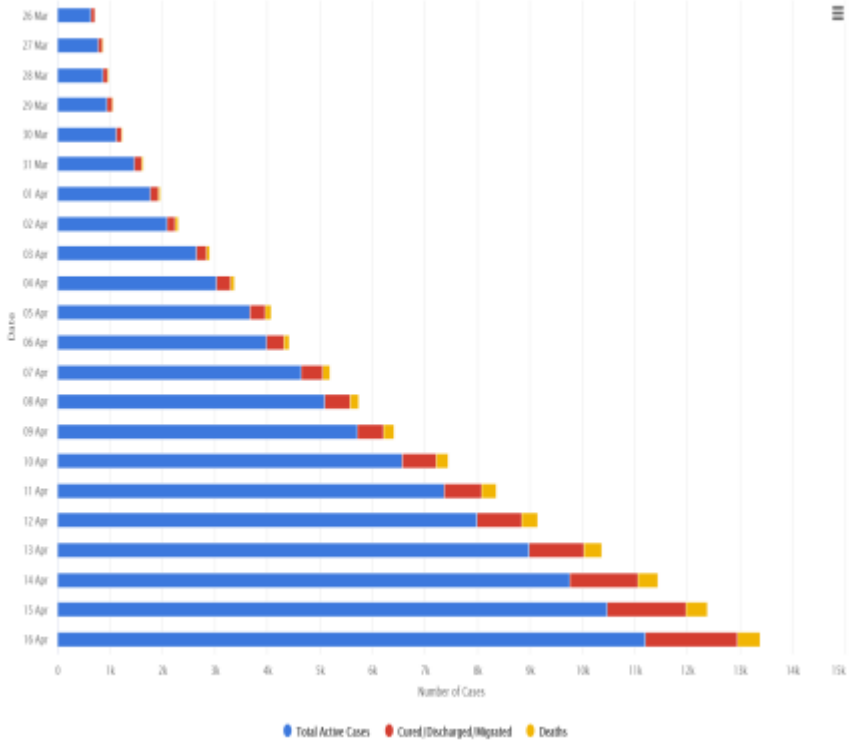
biased towards finding positive cases, is much lower than countries like USA or Japan or Italy, where the ration is much higher.

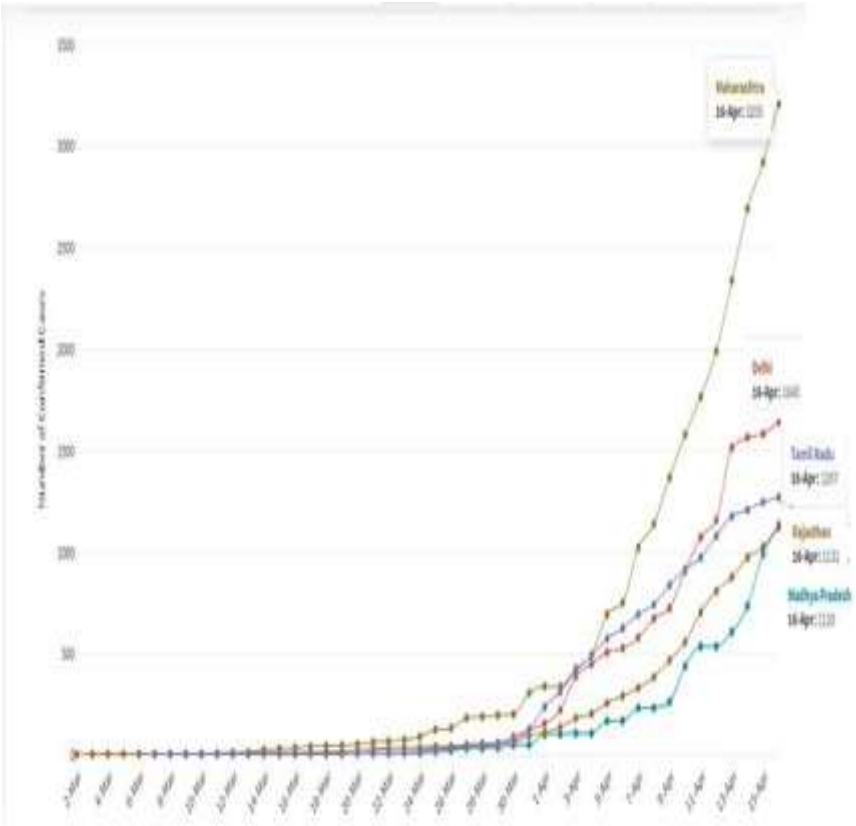
Date	Ratio	Total Samples Tested	Total Positive Cases
6-Apr	4.09%	101068	4135
7-Apr	4.05%	114015	4616
8-Apr	4.00%	127919	5114
9-Apr	3.94%	144910	5705
10-Apr	4.26%	161330	6872
11-Apr	4.29%	179374	7703
12-Apr	4.25%	195748	8312
13-Apr	4.29%	217554	9341
14-Apr	4.21%	244893	10307
15-Apr	4.11%	274599	11297

Four graphs:
Graph 01:
Total cases plot. Slope getting gentler Graph 02: Daily growth rate. Trending downwards Graph 03: Total/Cured/Deceased: Increase of %cured Graph 04: Top 5 states. Maharashtra the outlier with steep rise. (Source: https://indiacovidstatus.org)



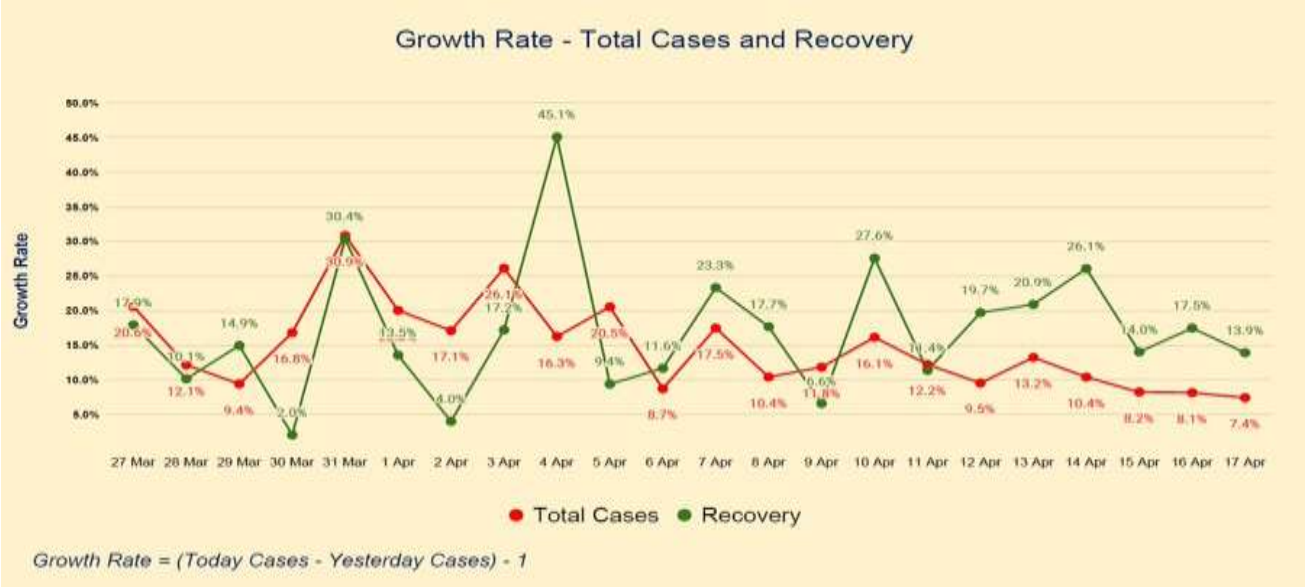

Growth Rate (in %)
Date
16 Apr
Growth: 8%
Growth


Date
Number of Cases
Total Active Cases
Cured/Discharged/Migrated
Deaths

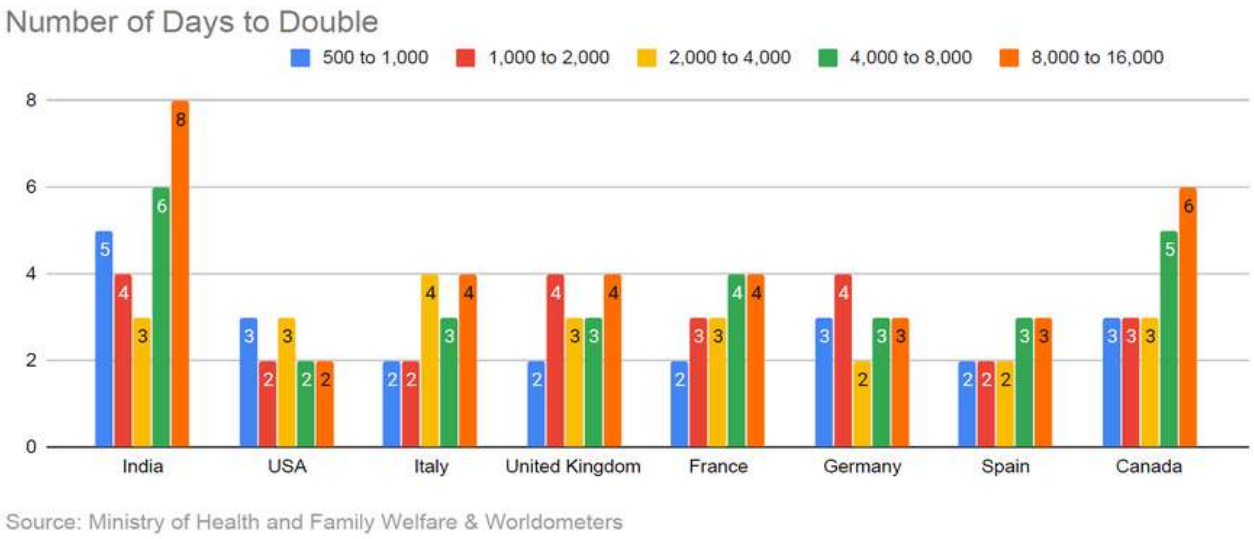


Countries bench-mark their #COVID2019 progression from the day they crossed 100+ cases. India is on 33rd day after 100+ cases (18th April 2020). Here is the chart of how other countries fared in the first 33 days after 100+ cases.

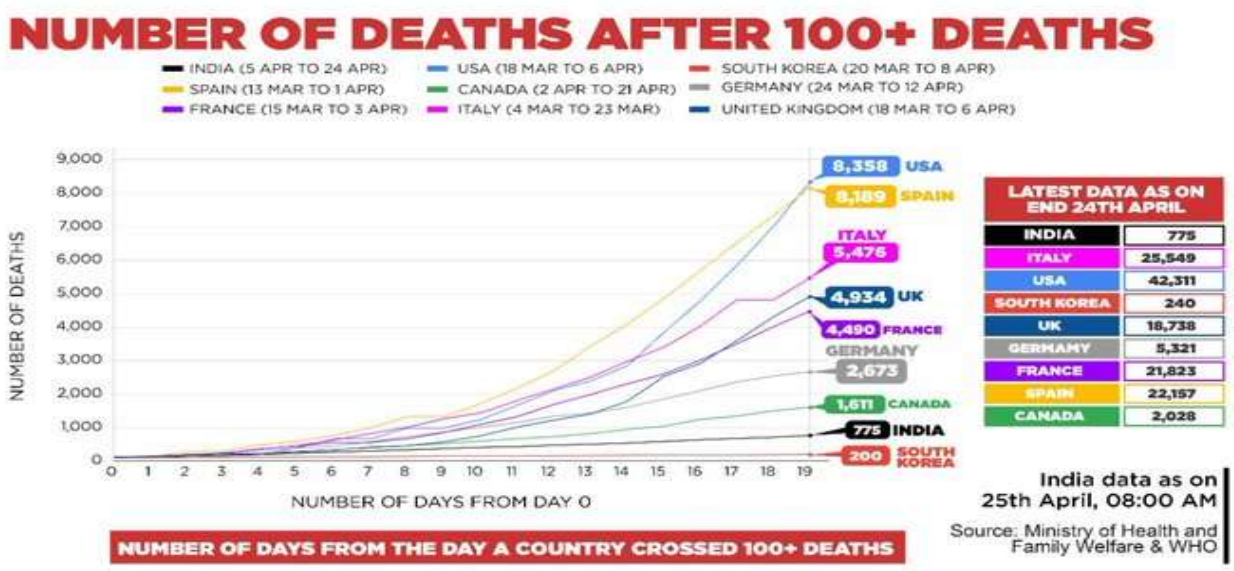
Growth rate of cases and recoveries. Since 11th April, recoveries is consistently growing at faster rate than total cases. AS you can also see, the growth rate of total cases is consistently declining since 10th April.



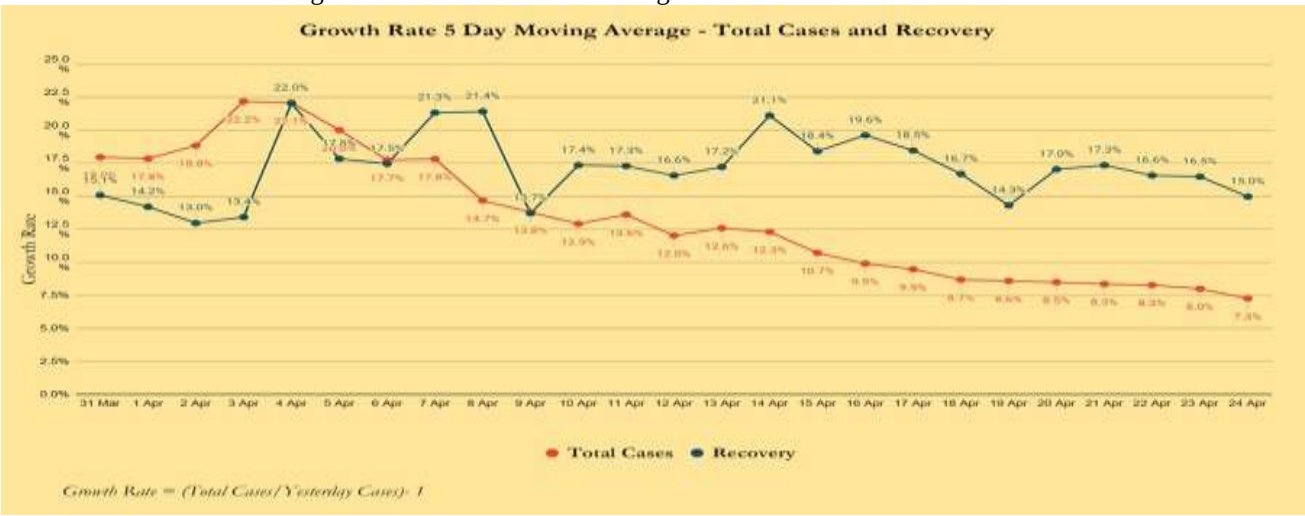
The rate of doubling of COVID-19 cases. India is the only large globally integrated country, with all regions of the world, which is showing a distinct slowing down of doubling rate at this stage.



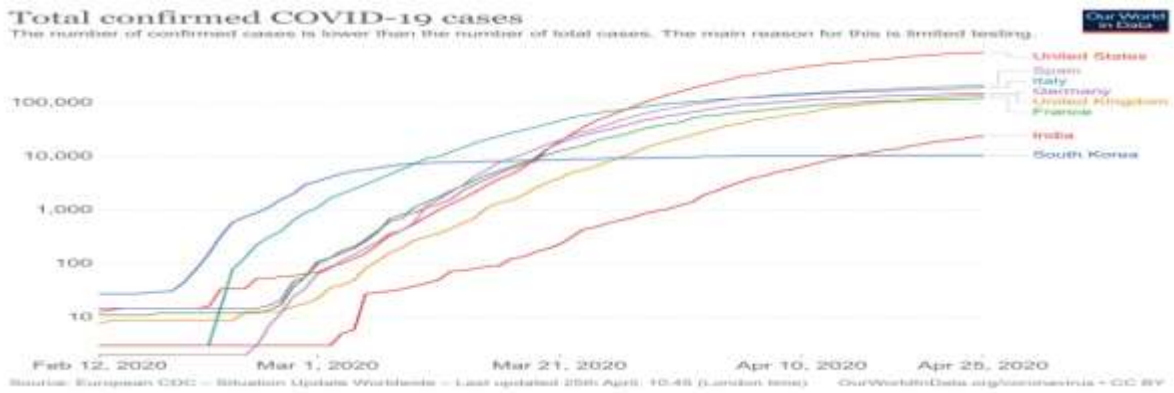
We have often see the chart "number of cases after a country crosses 100+ cases". However, another chart may be interesting. The number of total deaths after a country crosses 100+ deaths. In this graph too, India fares better than almost all other countries.



A very interesting graph. The plot of rate of growth of new cases and rate of growth of recoveries. The GAP IS WIDENING between rate of growth of new cases and rate of growth of recoveries.

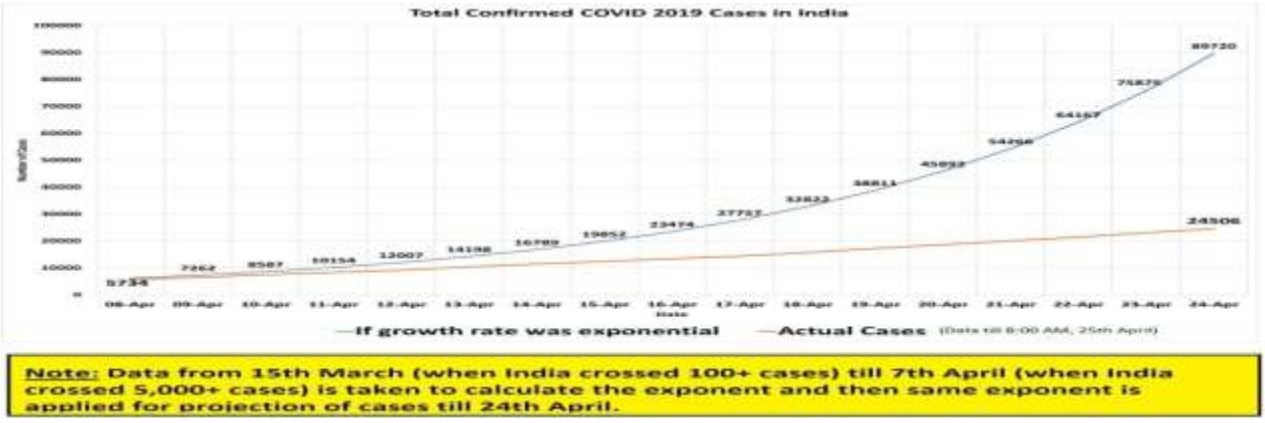


We have heard the term "flattening the curve" in the context of Covid-19. Presumption is that COVID cases will initially rise exponentially, countries then devise ways to control exponential rise and then, if possible, prevent totally. South Korea is one example of this.



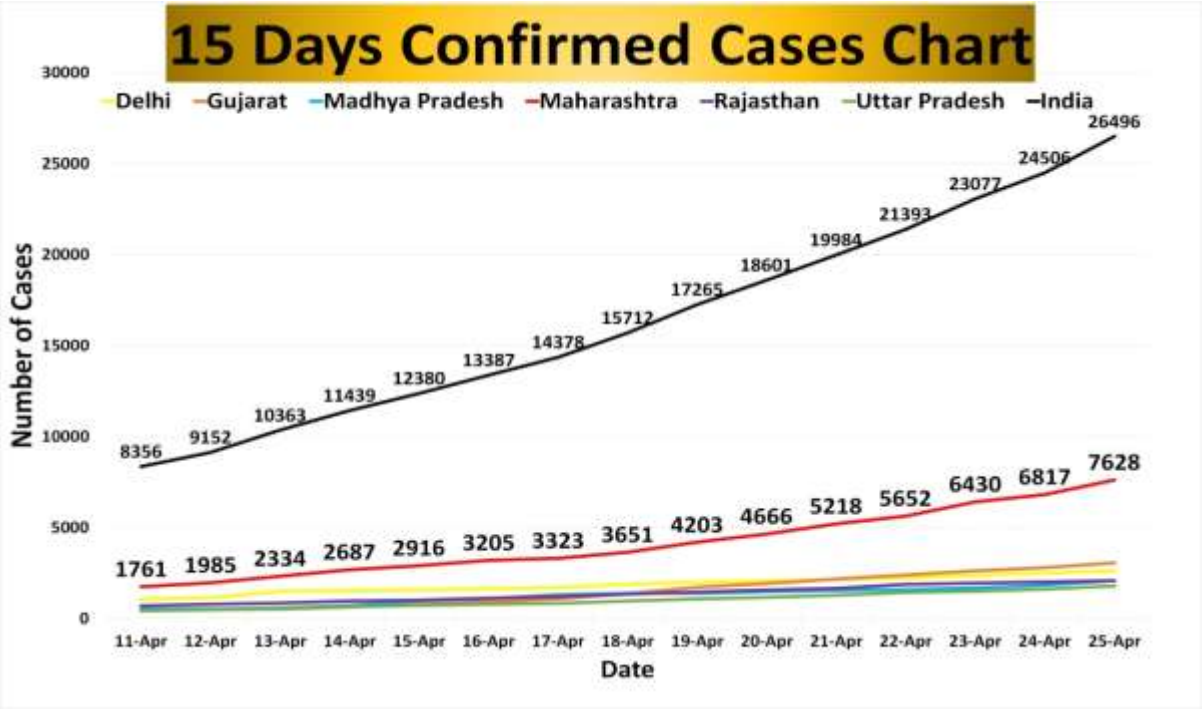
But India may have set another model in containing Covid-19. Not allow COVID cases to rise exponentially in the first place.

Now, consider this graph, rise in Covid-19 cases in India is almost linear, unlike almost any other country. This is the result of acting early.



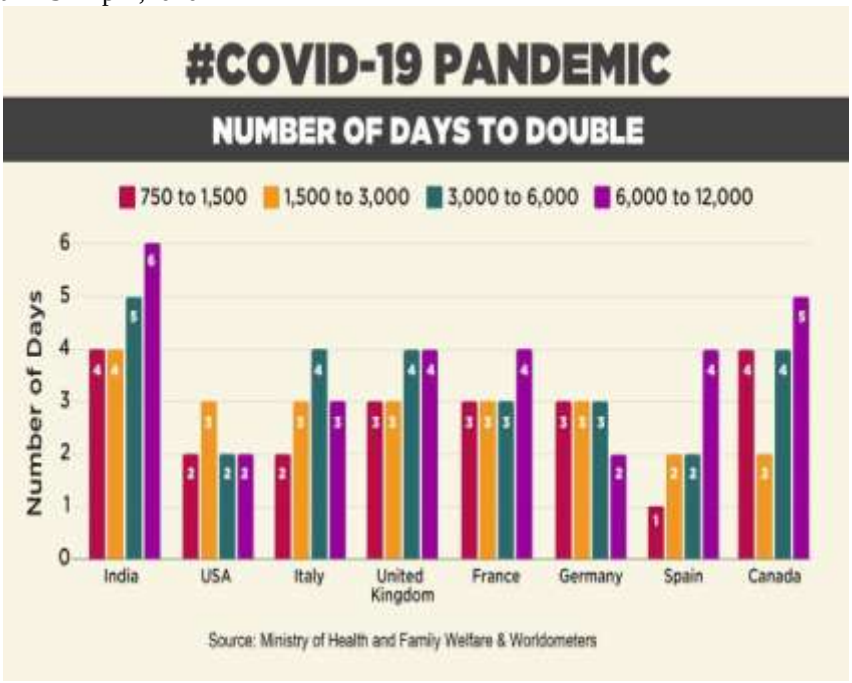
Note: Data from 15th March (when India crossed 100+ cases) till 7th April (when India crossed 5,000+ cases) is taken to calculate the exponent and then same exponent is applied for projection of cases till 24th April.

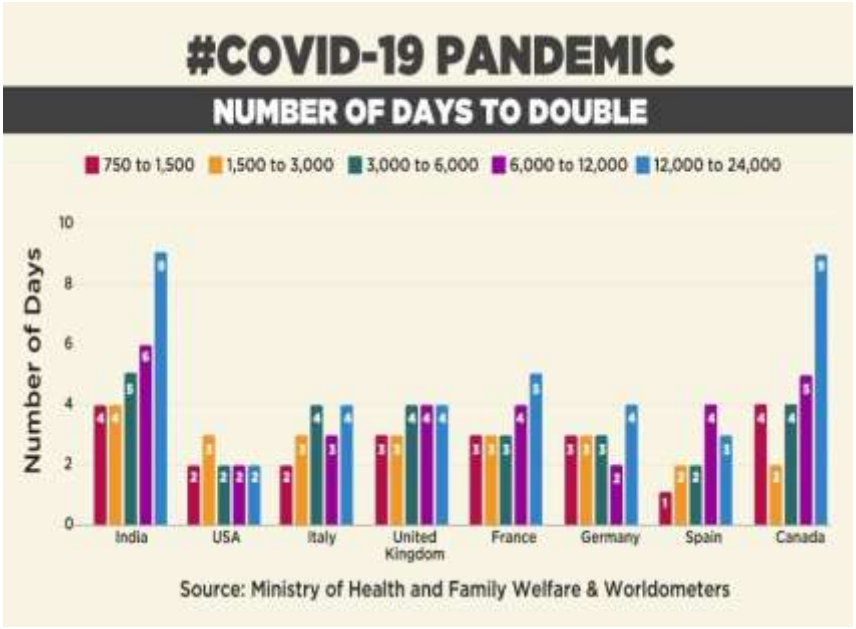
Growth of Covid-19 cases for last 15 days for the top 6 states and India total.



Here is the chart of days – cases to double in India and some other countries. India has fared better at end stage as compared to other countries. We have been on the corner path.

This is as per data till 25th April,2020

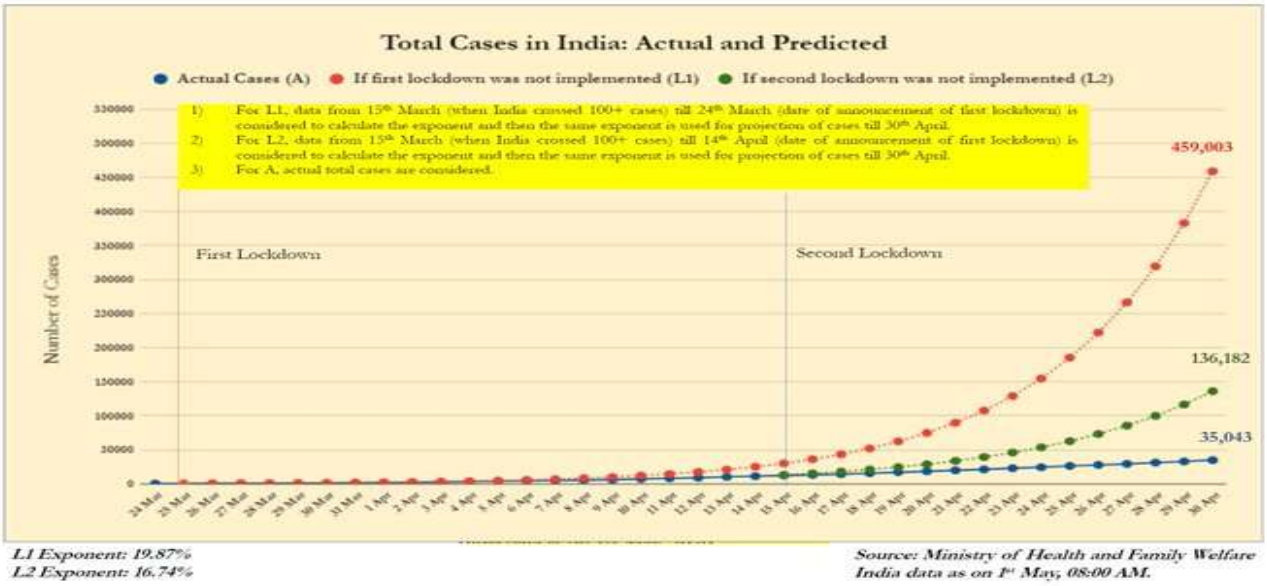




India is steadily improving in terms of the number of days it takes for #COVID—19 cases to double.

Number of cases, country wise, when they recorded 1,000+ #COVID—19 deaths. India seems to be managing the care of confirmed cases better than most countries.

L1: In case no lock-down happened on 25th March: 4.6 lakh cases by now
L2: Only first lock-down but not the second (from 15th April): 1.36 lakh cases by nowActual cases as of 30th April: 35,000



Conclusion:-

World is facing Covid-19 pandemic and countries are fighting against it to win, because there is no condition to lose the battle, "win or die" is the situation. India is doing its part to save millions of lives. This is a study of India's do's and don'ts in Lock-down 1.0 & 2.0 during Covid-19 pandemic. By graphical representation the data is easy to understand.

How and what actions are taken by government of India to save lives of people in country? This detailed study will be helpful to understand situations and measures during any pandemic situation in future (crossed fingers).

Future scope:

Still report of Lockdown 3.0 and Lock down 4.0 is pending. For complete study of this pandemic situation study is still pending and there is more scope to know more about India's fight against Covid-19.

A special Thanks to BLUEKRAFT DIGITAL FOUNDATION for their trust on me and for providing compiled data.

Websites:

1. https://indiacovidstatus.org
2. www.worldometers.info/coronavirus
3. www.ourworldindata.org/coronavirus

References:-

1. Ministry of Health and Family welfare
2. ICMR
3. Blavatnik school of Government at the university of oxford
4. World Health Organisation
5. Bluekraft Digital Foundation.