

COVID-19 IN INDIA: STATE AND NATIONAL RESPONSES, ECONOMIC CONSIDERATIONS AND NEXT STEPS

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STRUCTURE OF TALK

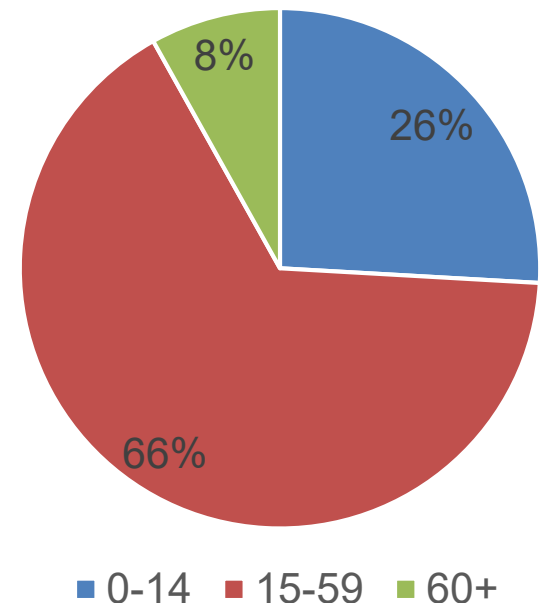
- India: Demographic & health profile
- Progression of COVID-19 in India
- India's response
- Current trends of COVID-19 at national and subnational level
- Mortality and testing strategies
- Impact on the economy
- Recap of key points

DEMOGRAPHIC & HEALTH PROFILE

India: Demographic Profile

- 1.3 billion people (52% Male)
 - Sex ratio at birth: 899 females / 1000 males
- Population density
 - 382 persons/sq km (2011)
- Life expectancy
 - Male: 69.8; Female: 72.3
- Crude Rates:
 - 20 birth/1000
 - 6.2 deaths/1000
 - i.e., some 71K live births & 22K deaths every single day

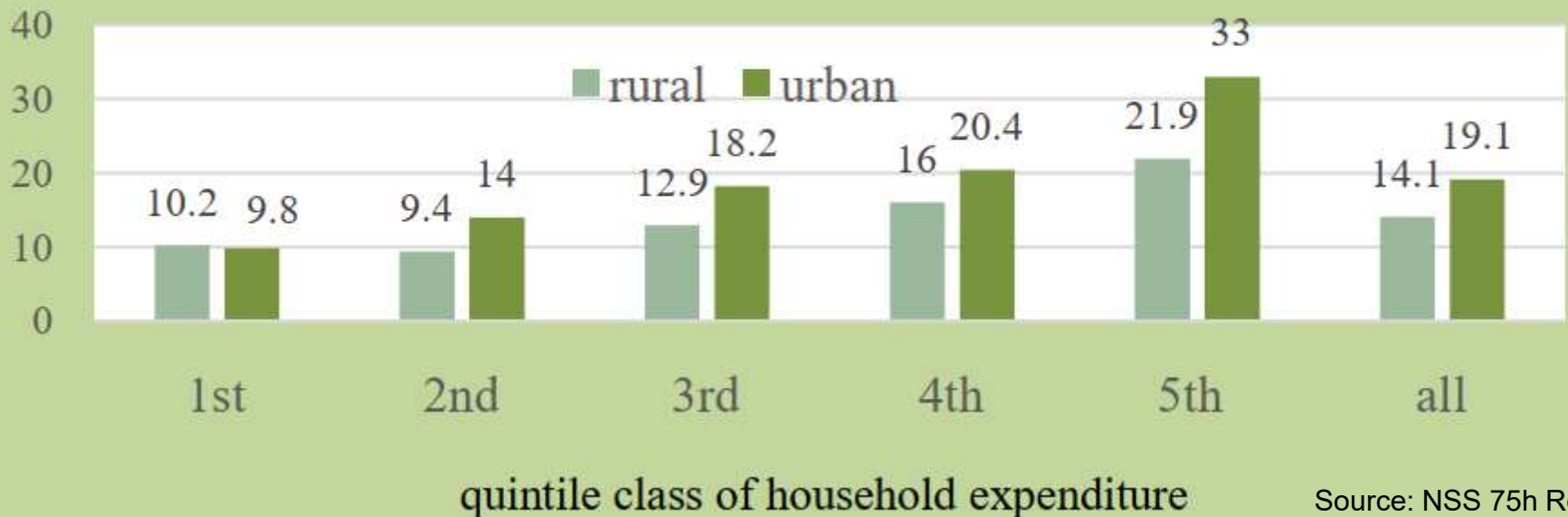
Population age distribution (2018)



India: Health Profile

- Public expenditure on health: 1.28% of GDP (2017-18)
- Centre : State share in total public expenditure on health was 37:63 in 2017-18.
- Per capita public expenditure on health in nominal terms has gone up from INR 621 in 2009-10 to INR 1657 in 2017-18.
- Close to 65% health expenditures are private out-of-pocket expenditures

Fig. 5: Percentages of persons having health expenditure coverage



PROGRESSION OF COVID-19 IN INDIA

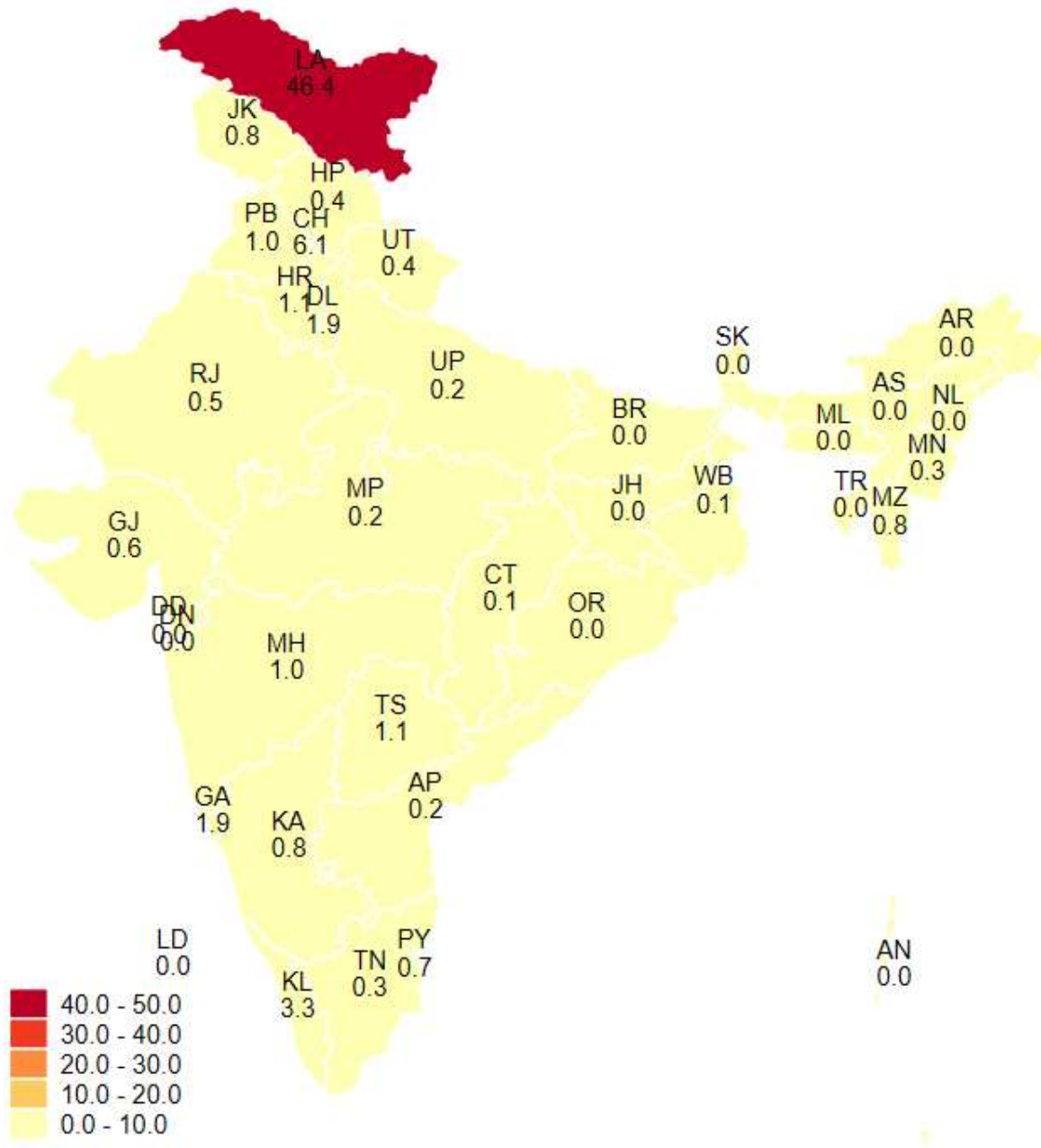
Chronology of COVID19 in India

Date	Events	Cases	Deaths	TPR (%)
30-01-20	Wuhan Student in Kerala	1	0	-
03-02-20	Kerala declares state calamity	3	0	-
06-03-20	Screening for ALL intl passengers at airports	31	0	-
08-03-20	100K cases in 100 countries reported	39	0	-
11-03-20	WHO declares COVID-19, a pandemic	71	0	-
12-03-20	Haryana Declares COVID19 a pandemic	81	1	-
	>>Odisha declared COVID-19 a 'disaster'			
13-03-20	>>MoHFW said COVID19 not a health emergency	91	1	1.4
15-03-20	100 cases mark.	100	1	1.7
	Testing primarily limited to symptomatic airport travelers and contacts with known sources			
17-03-20		146	1	2.2
	ICMR expands testing guidelines to include those with symptoms but no travel history			
20-03-20		256	1	1.7
22-03-20	Janata Curfew: 14 hour “voluntary” lockdown	403	1	2.2
	>>Nationwide lockdown for 21 days			
25-03-20	>>An exodus of migrant workers begin	657	1	2.6

Source: The Wire (2020) & www.covid19india.org & author's calculations

Confirmed COVID19 Cases per million on March 25

(India Total: 657.0; Cases per million: 0.5)



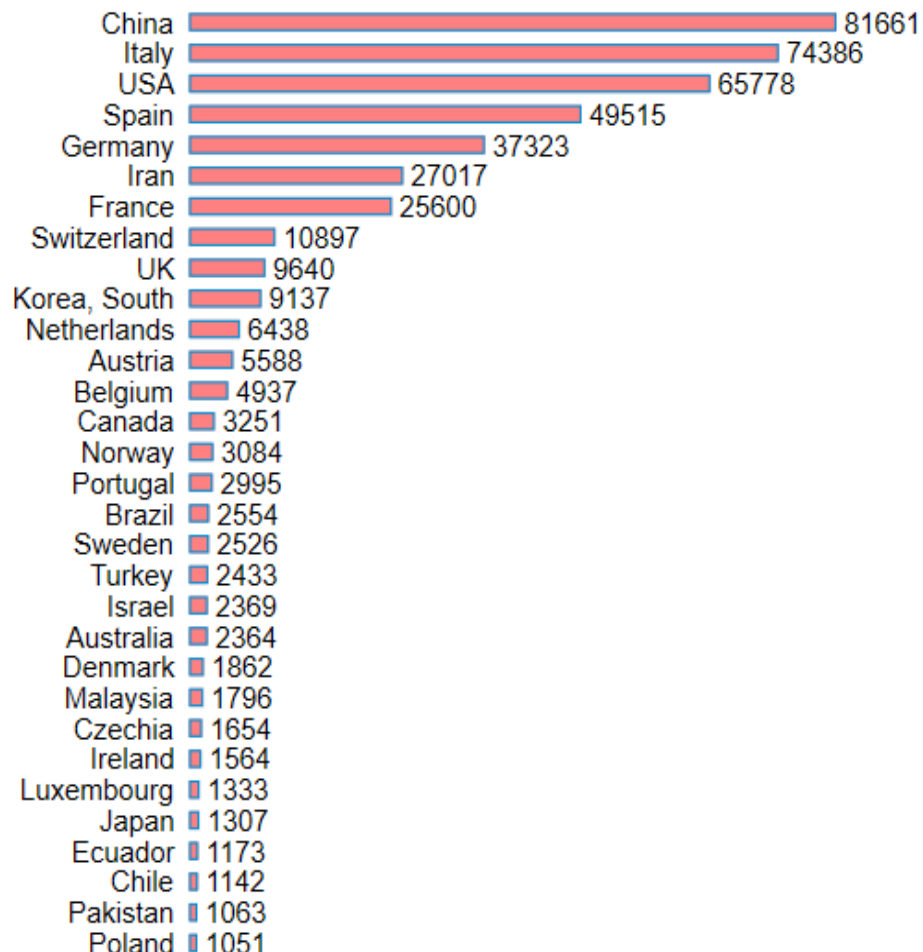
States	Cases
MH	122
KL	118
KA	51
TS	41
RJ	38
GJ	38
UP	38
DL	35
HR	31
PB	31
TN	26
MP	15
LA	13
JK	11
AP	10
WB	9
CH	7
UT	5
BR	4
HP	3
GA	3
CT	3
OR	2
MN	1
MZ	1
PY	1

Total COVID-19 cases in countries when India went into nationwide lockdown

Cases till Jan 31



Cases till March 25
(In countries with at least 1000 cases)



INDIA'S RESPONSE

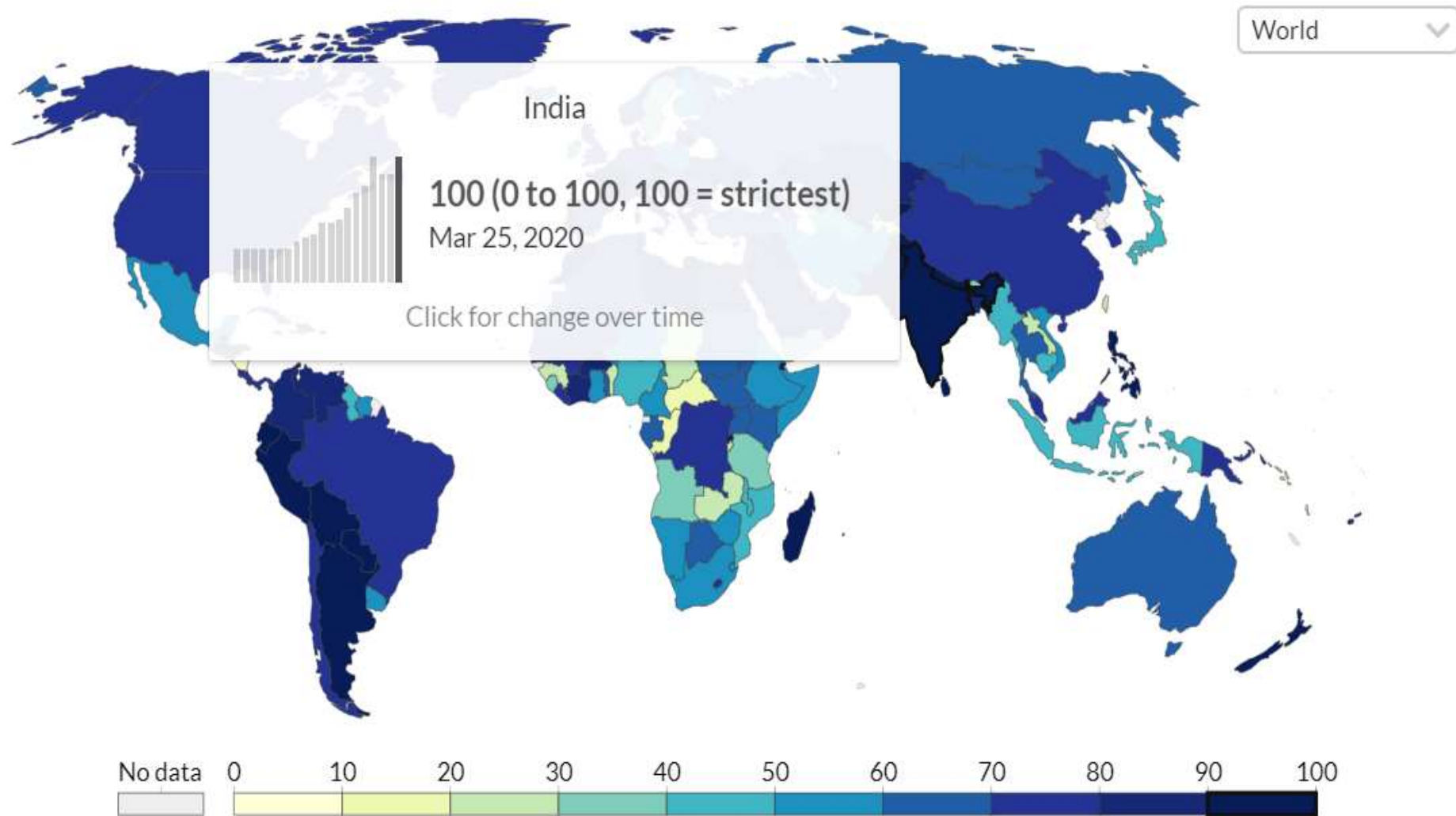
The Nation-wide lockdown

- India did a staggered nationwide complete lockdown from 25th March to 1st June (Approx. 72 days)
- India had about 600 total cases (about 0.5 cases per million population while this lockdown was announced)
- Announcing the lockdown at 9PM on 24th March the Prime Minister of India said:

“from midnight tonight, a full ban is being imposed on people from stepping out of their homes. All the States in the country, all the Union Territories, each district, each municipality, each village, each locality is being put under lockdown...this lockdown will last 21 days ”

COVID-19: Government Response Stringency Index, Mar 25, 2020

The Government Response Stringency Index is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 = strictest response).



Source: Hale, Webster, Petherick, Phillips, and Kira (2020). Oxford COVID-19 Government Response Tracker – Last updated 10 August, 07:30 (London time)

Note: This index simply records the number and strictness of government policies, and should not be interpreted as 'scoring' the appropriateness or effectiveness of a country's response.

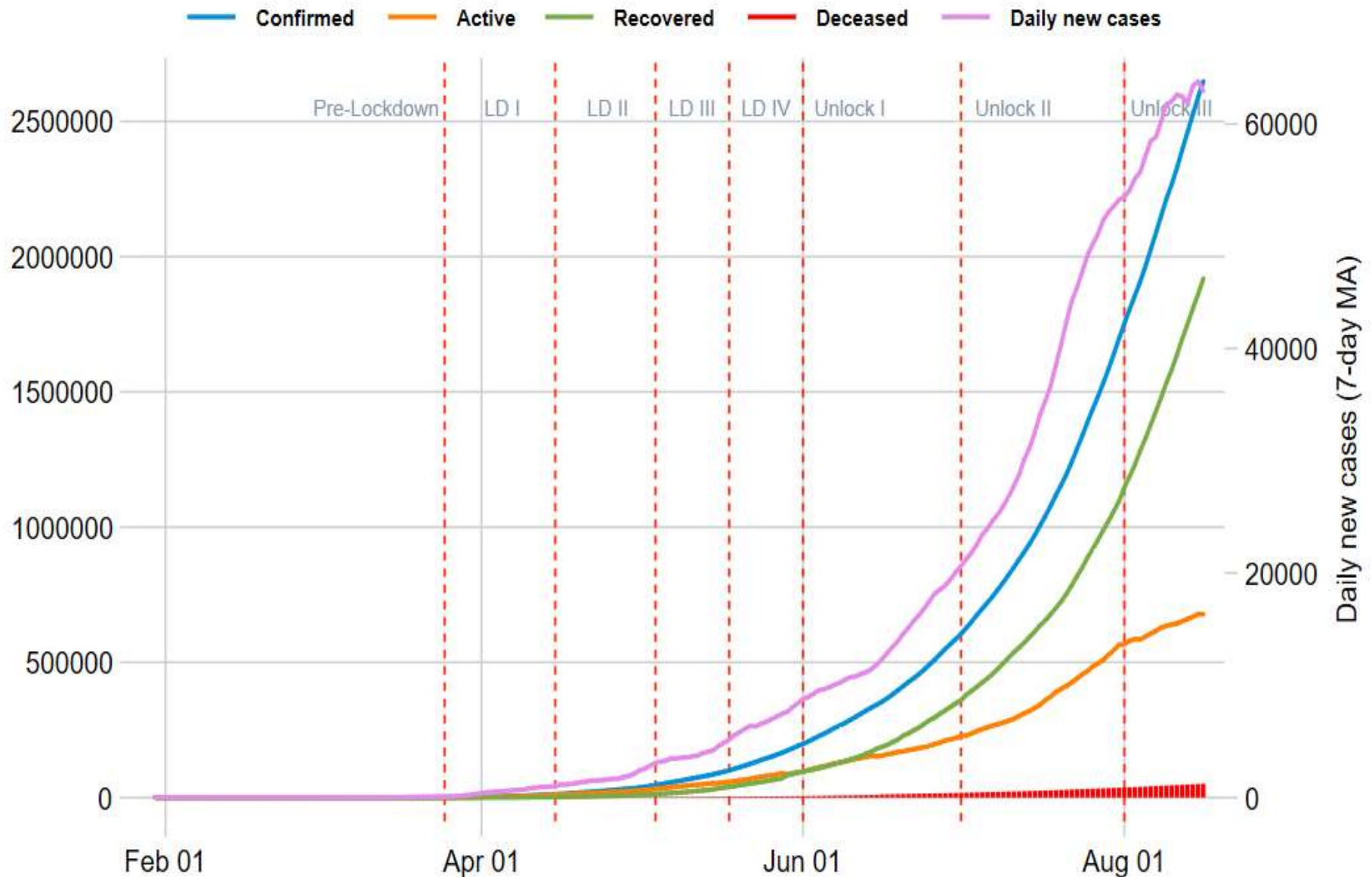
OurWorldInData.org/coronavirus • CC BY

Economic Stimulus Plan (GoI)

- March 26: Announced INR 1.76 Trillion (\$22.6 billion) economic stimulus plan
 - Direct cash transfers to 200 million women and the elderly
 - Free cooking gas cylinders to 83 million poor families
 - 5 kg. of staple food-grains wheat or rice and a kilogram of pulses free once a month for three months to about 800 million poor people
 - A plan for medical insurance cover of 5 million rupees (\$66,000) for every frontline health worker
 - **The additional fiscal stimulus component was INR 0.8 Trillion (approx. 0.4% of GDP)**
- May 17: Announced INR 20.7 Trillion (\$270 billion)
 - Collateral-free loans to MSMEs, ration cards useable anywhere, credit facilities
 - **The additional fiscal stimulus component was about INR 1.3 trillion (approx. 0.7% of GDP)**

CURRENT TRENDS IN COVID-19: National & Sub-National

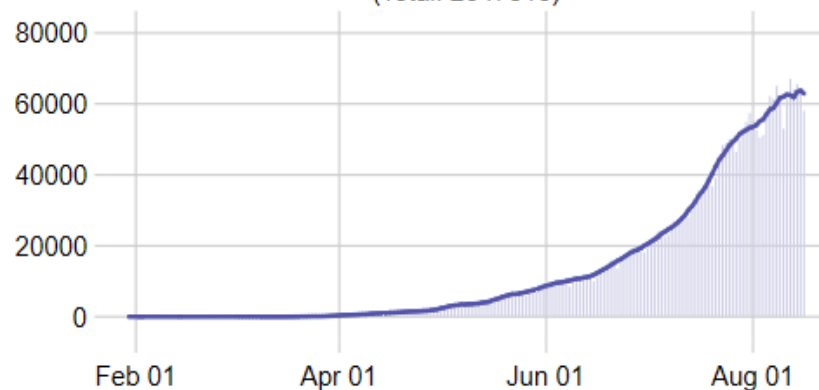
Progression of COVID-19 cases in India as on Aug 16



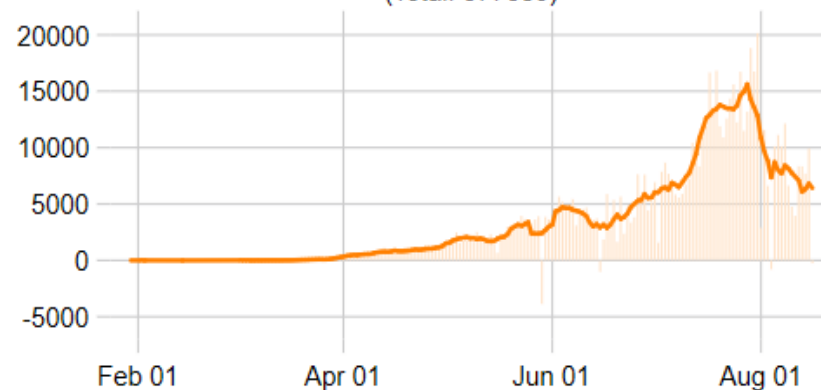
Data Source: India COVID-19 Tracker, <https://www.covid19india.org/>
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Trends in COVID-19 cases, deaths & Tests in India

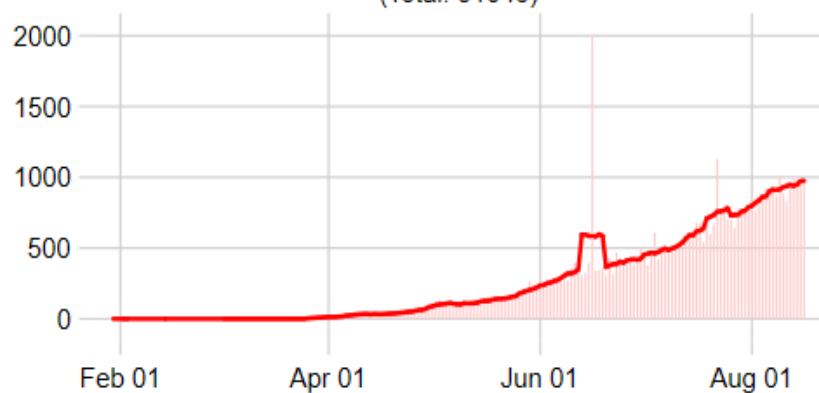
Daily Cases
(Total: 2647316)



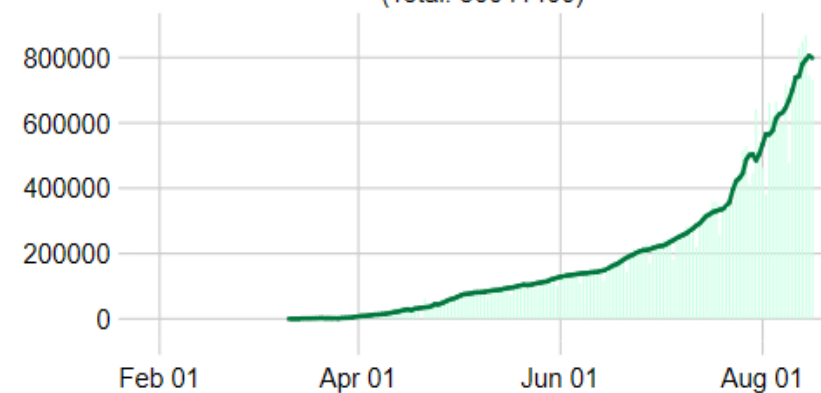
Daily Active
(Total: 677689)



Daily Deaths
(Total: 51045)

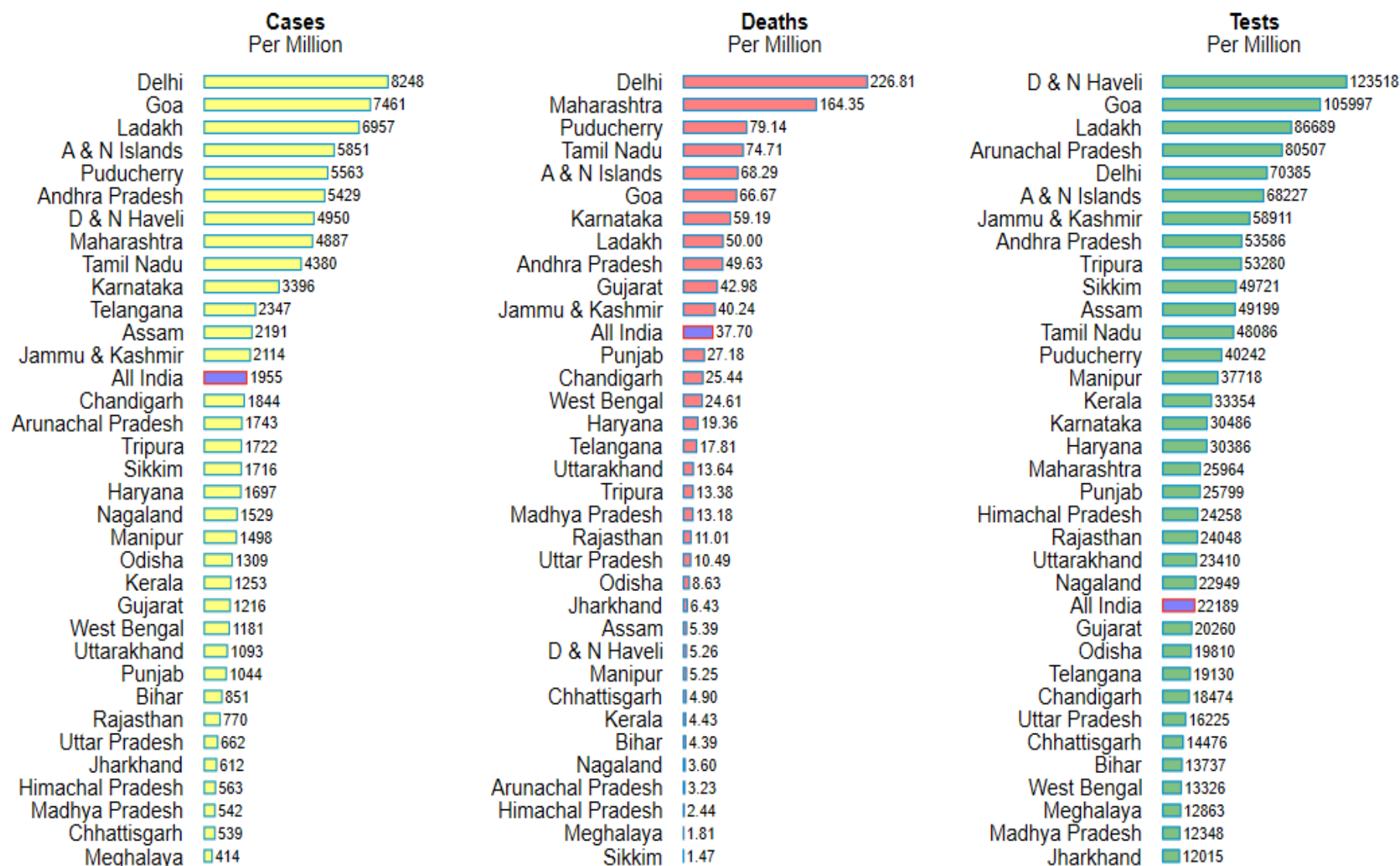


Daily Tests
(Total: 30041400)



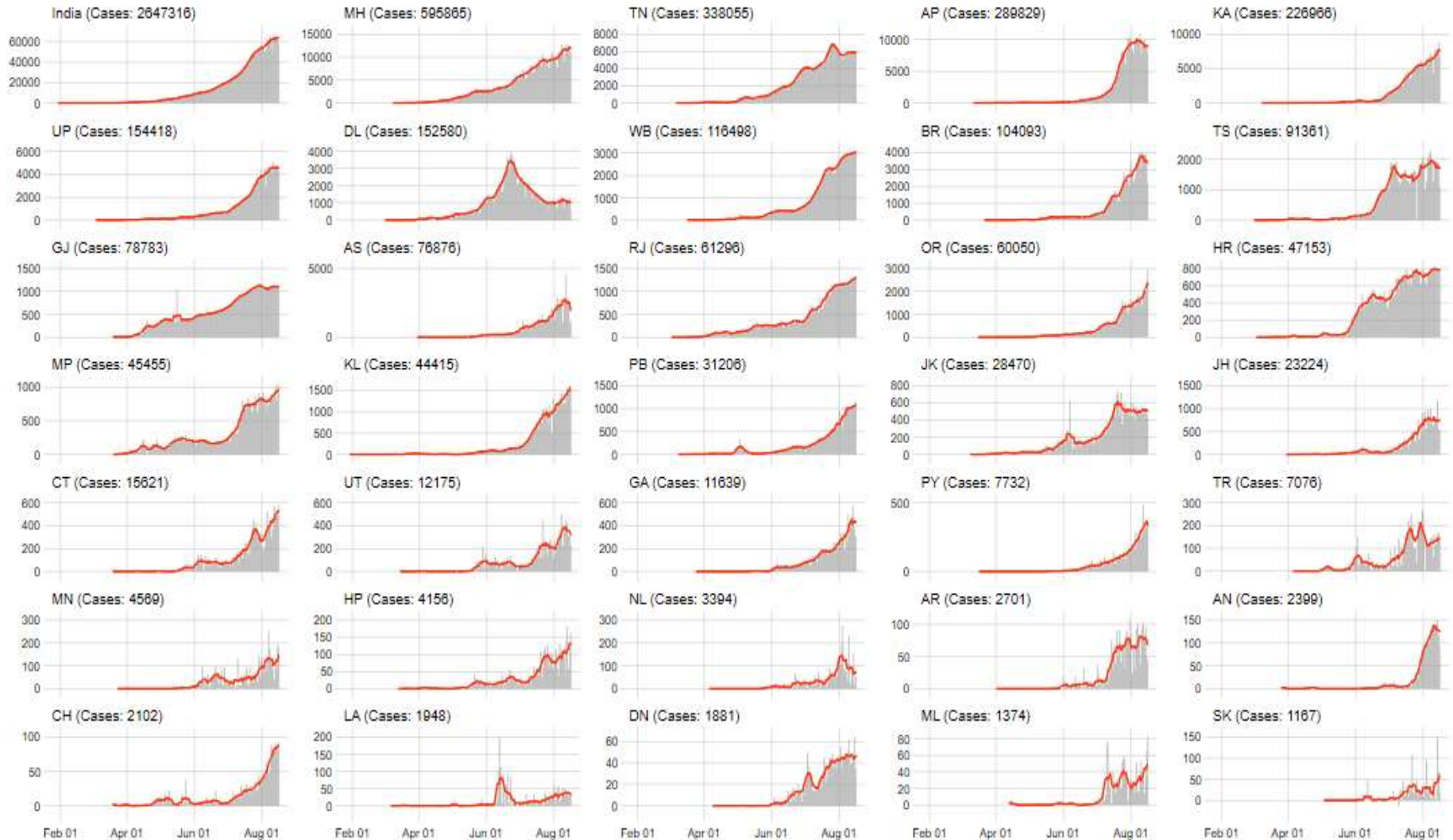
Data Source: <https://api.covid19india.org/>
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Indian states with 1000+ confirmed COVID-19 cases on Aug 16



COVID-19: daily new cases and 7-day moving average in states with 1000+ confirmed cases as on Aug 16

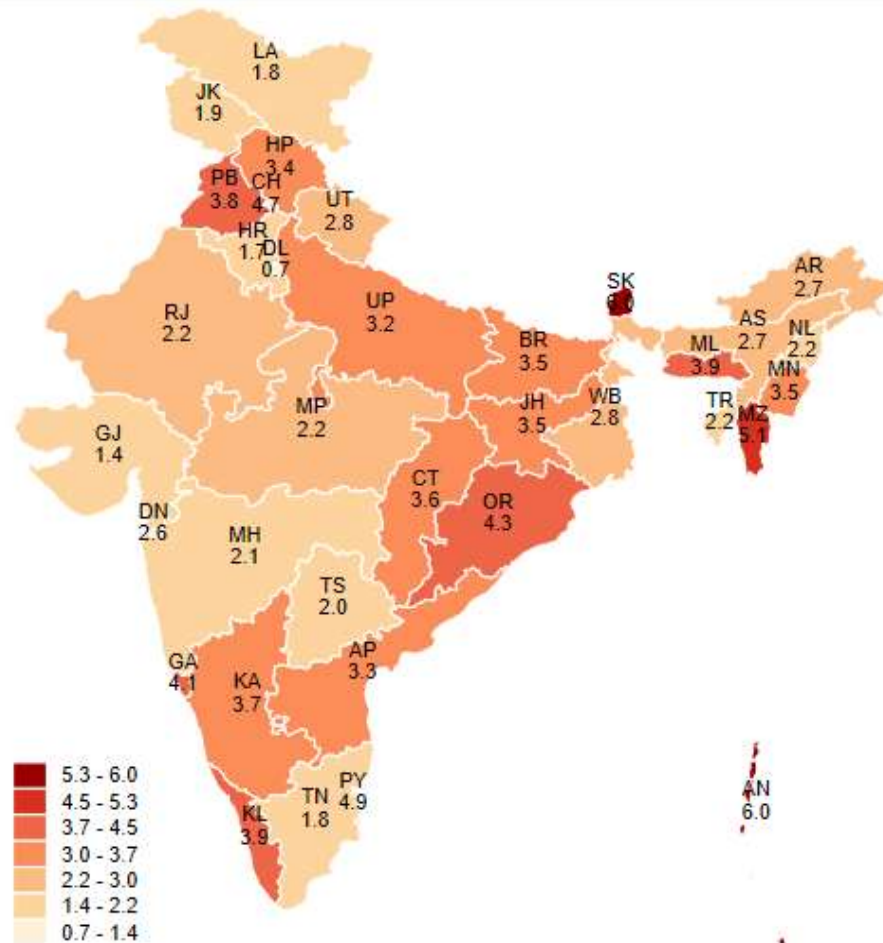
— Daily new cases — 7-Day MA



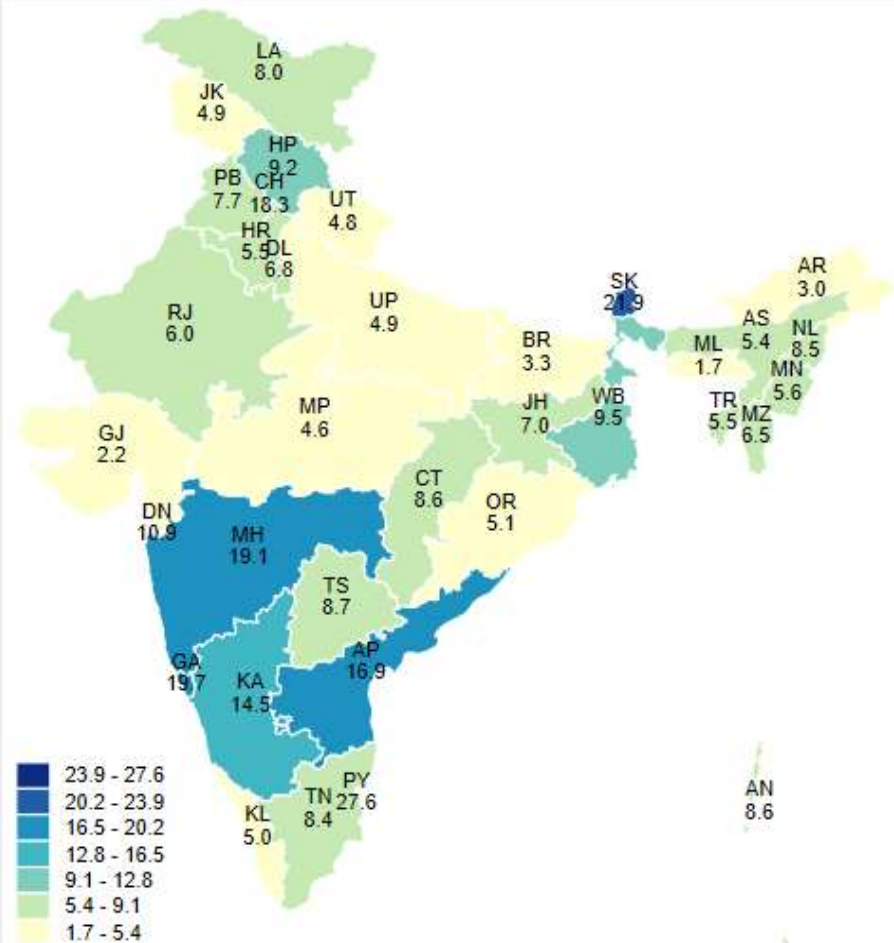
Data Source: India COVID-19 Tracker, <https://www.covid19india.org/>
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Daily growth of COVID-19 cases, daily test positive rates & mortality rates across Indian states as on Aug 16

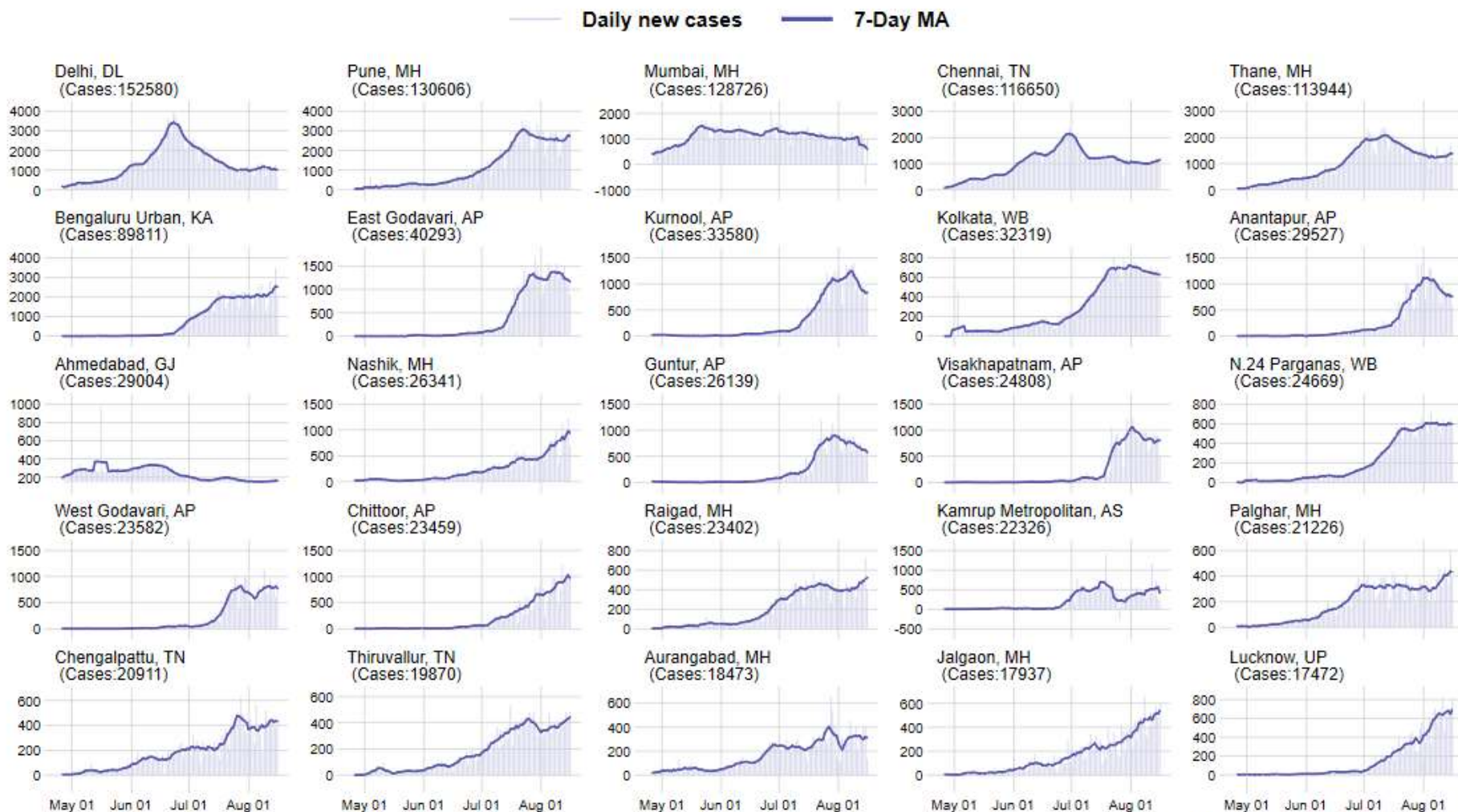
Daily Growth Rate of Cases (%) (7-day Avg.)
(Indian Avg.: 2.5%)



Daily Test Positivity Rate (%) (7-day Avg.)
(Indian Avg.: 7.9%)



COVID-19: daily new cases and 7-day moving average in top 25 districts as on Aug 16 (Total Confirmed cases in parenthesis)



Data Source: <https://api.covid19india.org/>
Rijo M. John, PhD (CPPR, Kochi, Kerala) Twitter: @RijoMJohn

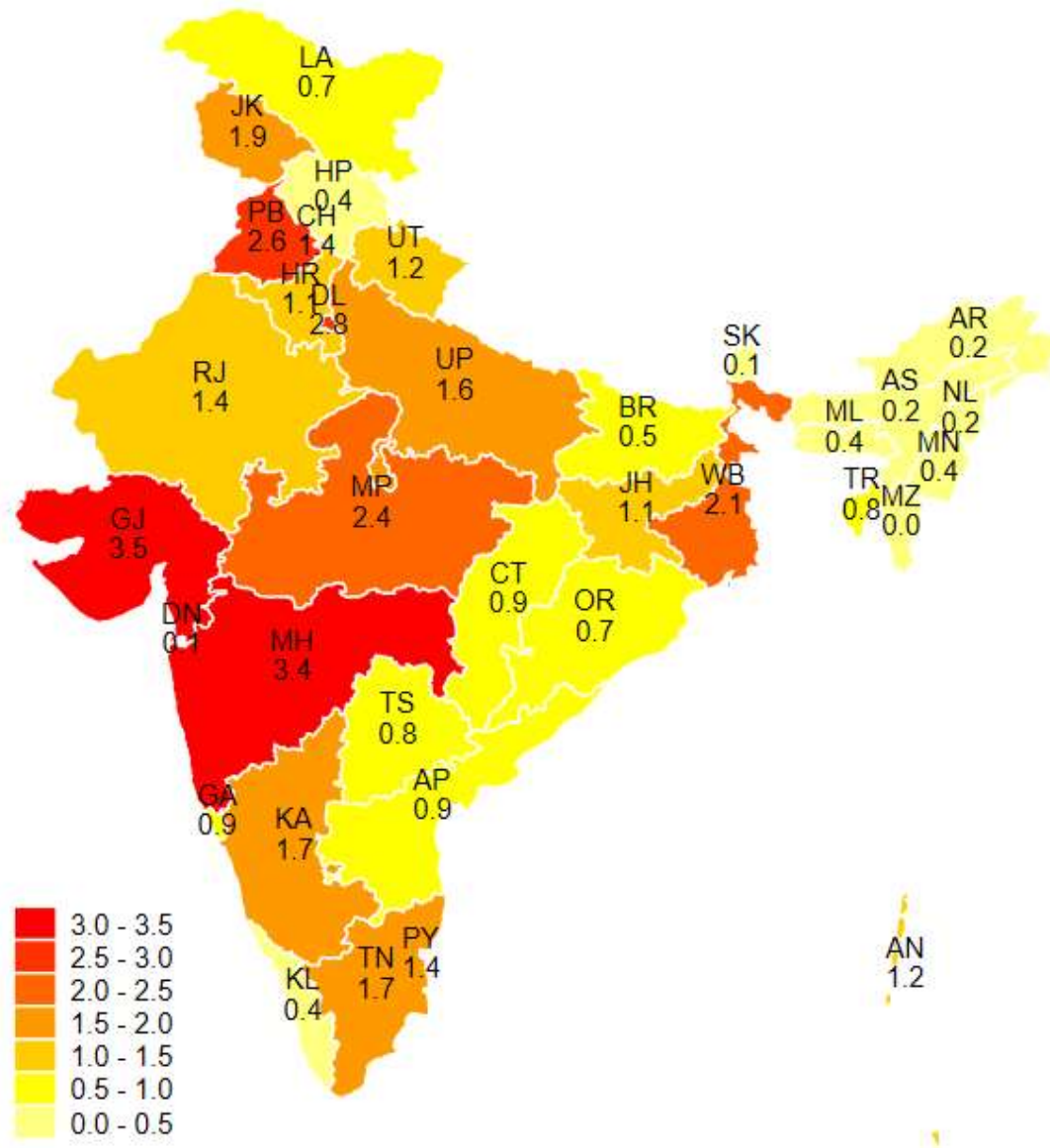
About 46% of the cases & 60% of the deaths from this top 25 districts

MORTALITY & TESTING STRATEGIES

Mortality Rate from COVID19 across Indian states/UTs

(MR=total reported deaths/reported cases)

(Indian Avg.: 1.9%)



Death Reporting in India

states	Confirmed COVID19 cases	COVID19 Deaths	Population Share (%)	Death Registrati on (%)*	Medical Certification of Deaths (%)
Maharashtra	595,865	20,037	9.0	98.4	34.8
Tamil Nadu	338,055	5,766	5.7	125.9	45
Andhra Pradesh	289,829	2,650	3.9	106.4	14.9
Karnataka	226,966	3,956	4.9	120.7	31.1
Uttar Pradesh	154,418	2,449	17.2	60.8	5.1
Delhi	152,580	4,196	1.4	194.0	62.3
West Bengal	116,498	2,428	7.3	91.8	12.9
Bihar	104,093	537	9.0	34.6	13.6
Share in Total	74.7%	82.3%	58.5%	-	-
All India	2647316	51045	100	86	21.1

Source: Annual Report on Vital Statistics of India based on CRS – 2018; Medical Certification of Cause of Death, 2018;
 COVID19 data: <https://www.covid19india.org/>

*Death Registration computed as Registered deaths/estimated deaths in each state (computed from CRS and MCCD 2018)

Reporting of COVID19 Deaths

- State of WB had excluded close to 50% of the COVID related deaths on account of “comorbidities” in early March and April
- Death counts were partly adjusted by the govt. of Delhi for the under counting in April and May.
- Maharashtra adjusted COVID fatalities up by 1328 on June 16th
- Tamil Nadu made upward adjustments to its earlier reported fatality numbers
- In Gujarat, while the total cases have increased by >200% in the past two months the deaths increased only about 79%.
- States of Madhya Pradesh & Telangana also have had instances of discrepancies in fatality numbers
- Attributing covid19 deaths to comorbidities
- Mismatches in data from crematoriums & graveyards.
- Some later added as “reconciled” fatalities

Sero-prevalence surveys

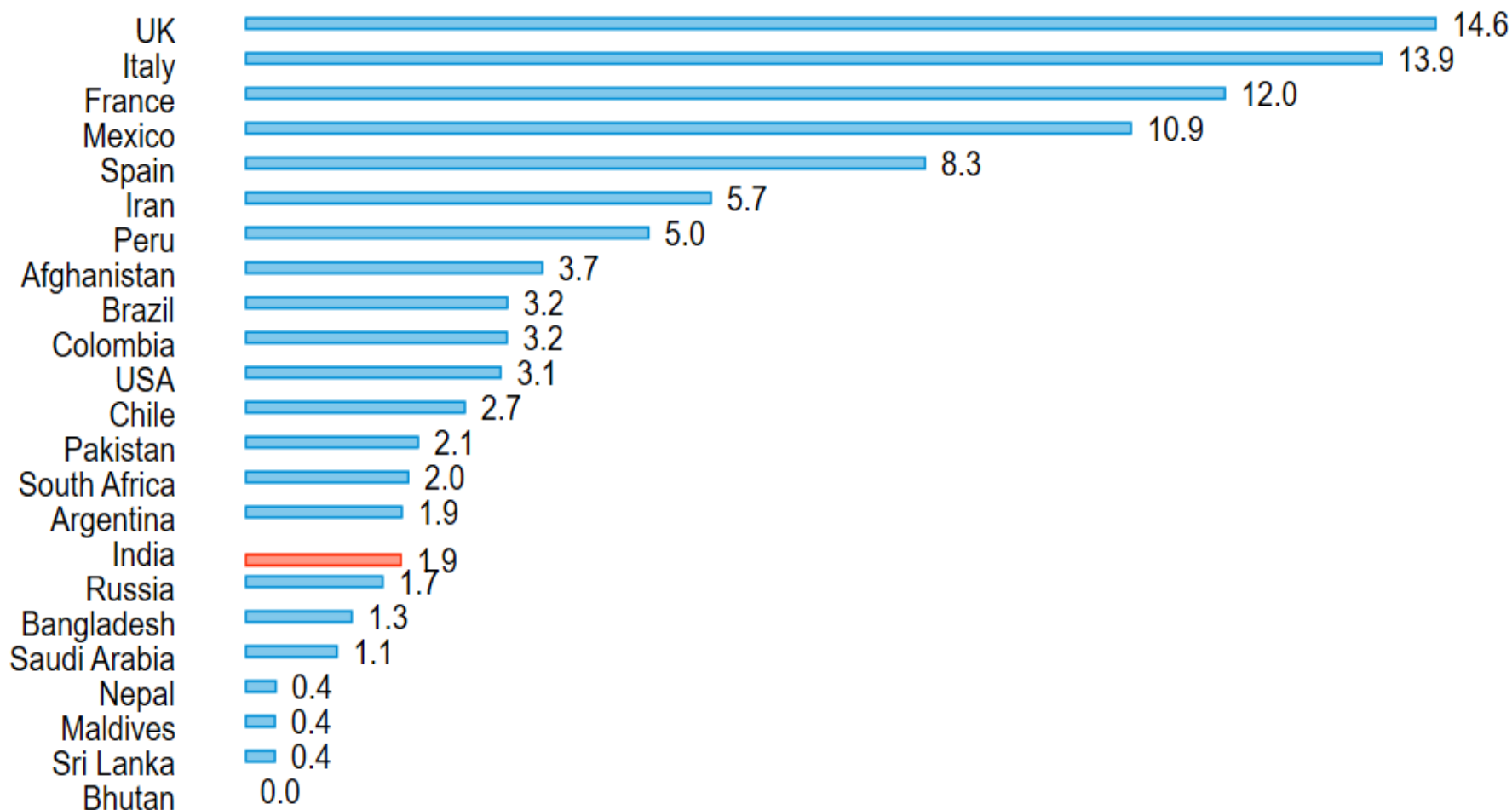
Place / Agency	Period of Survey	Sample Size	Prevalence	Population	Crude IFR*	Actual Cases
83 Dists (ICMR)	May	26,400	0.73%		0.08%	0.2M
Delhi (Gov. of Delhi)	27 June – 10 July	22,853	23%	19M	0.07%	0.11M
Mumbai – 3 municipal wards (BMC)	1-15 July	6,936	33%	13.5M	0.12%	0.1M
Ahmedabad (AMC)	16 June – 11 July	30,054	18%	6M	0.14%	22K
Berhampur (OD) BeMC/RMRC	3-7 August	2,830	31%	0.5M	0.02%	2.5K
Pune (Research institutions)	20 July - 5 Aug	1664	51.5%	0.4M		

*Crude IFR based on the assumption of no under counting of deaths (Murad Banaji, 2020)

High sero-prevalence compared to similar studies in other countries & deaths are not commensurate with it.

Mortality Rate from COVID-19 in select countries

(Countries with at least 0.25M cases or from South Asia)



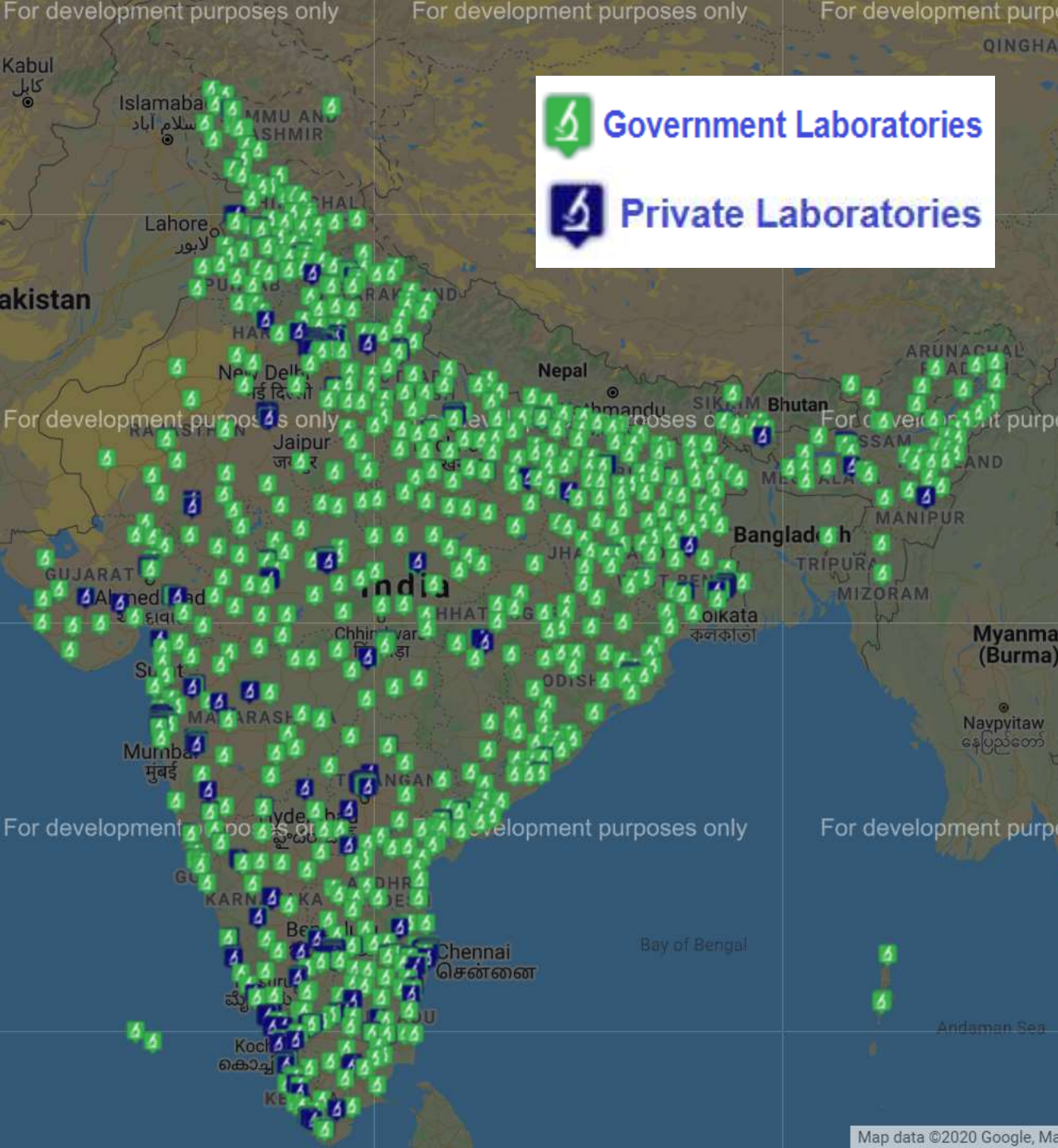
Data source: Data Repository by Johns Hopkins CSSE
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Testing strategies by ICMR

- March 17:
 - All asymptomatic people who have undertaken International travel
 - All contacts of laboratory confirmed positive cases
 - Symptomatic health care workers
- March 20:
 - All hospitalized patients with Severe Acute Respiratory Illness
 - Asymptomatic direct and high-risk contacts of a confirmed case
- April 4:
 - All symptomatic ILI (fever, cough, sore throat, runny nose) patients in hotspots/clusters
- May 18:
 - Symptomatic frontline workers involved in containment and mitigation of COVID19
 - All hospitalised patients who develop ILI symptoms
 - All symptomatic ILI among returnees and migrants

Testing strategies by ICMR

- June 14:
 - Rapid antigen detection tests (RADTs) recommended as a PoC test in containment zones/hotspots and healthcare settings
 - Suspected individuals who test -ve by RADT should be definitely tested sequentially by RT-PCR to rule out infection, whereas a +ve test should be considered as a true +ve and does not need reconfirmation by RT-PCR test
 - Kits by 3 private companies have been validated & approved for testing by ICMR so far.
- 0.9M tests y'day alone. About 44% of tests on average are RADT
- A quantity over quality strategy or a shift towards mitigation over containment strategy of test & trace



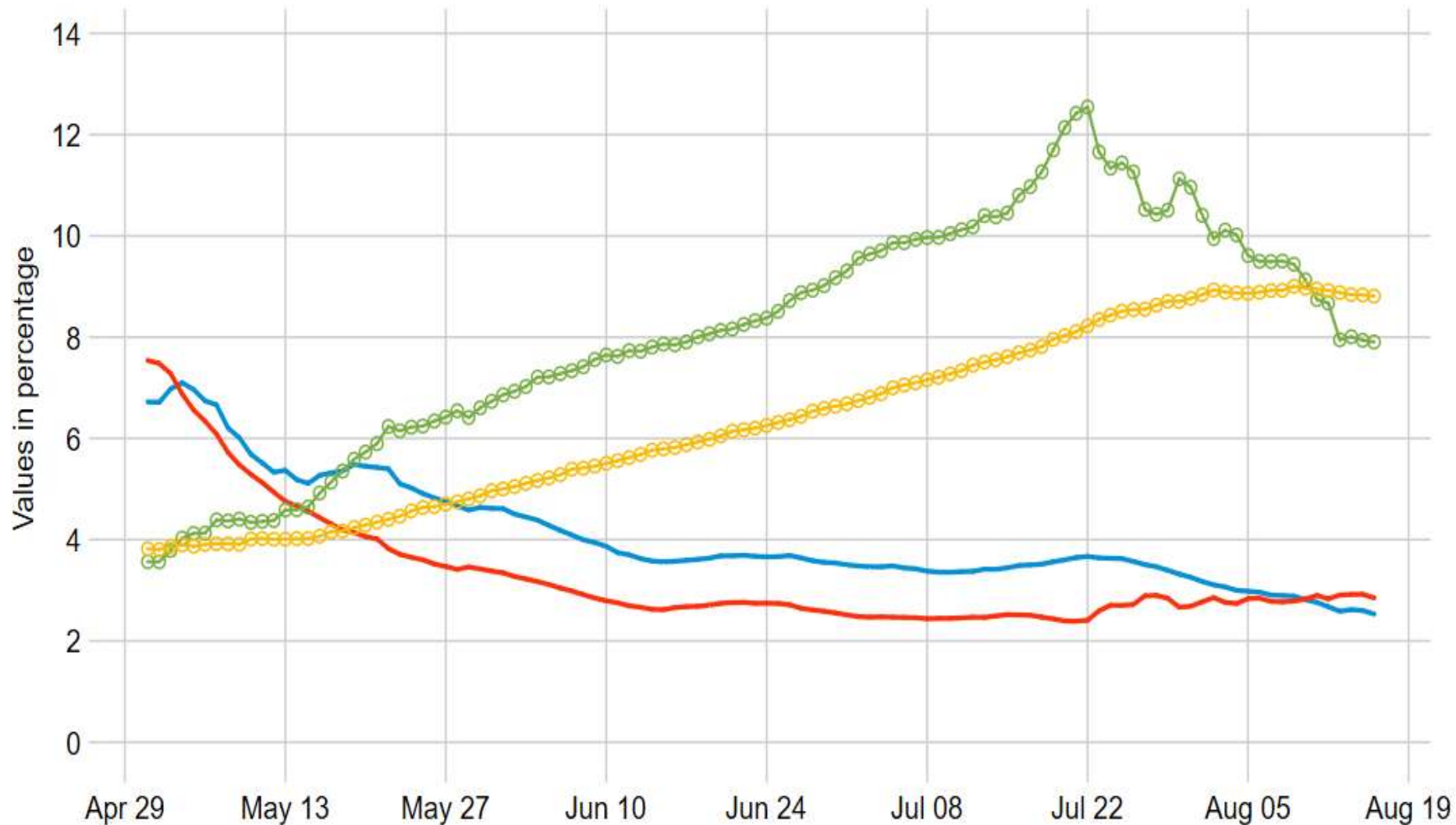
- COVID-19 Testing labs approved by ICMR
- Total: 1476 labs as on 17, Aug.
 - 971 Govt.
 - 505 Pvt.

Testing in practice

- States are increasingly using Rapid Antigen Tests unlike the RT-PCR tests most of them used earlier
- 40% to 70% of total tests are RADT in states like Delhi, Andhra Pradesh & Karnataka
- About 11 states/UTs are now reporting separate testing numbers for RT-PCR and Rapid Antigen Test
- Only a few percentage of –ves from RADT are retested
 - For example, of the 300K+ RADT Delhi govt. did between June 18 to July 16, 280K were –ve, but only about 0.5% of these were re-tested with RT-PCR. 15% of these re-tested turned out +ve.
- States seem to be partly replacing RT-PCRs with RADT instead of supplementing it thus not utilizing even the existing capacity for RT-PCR.

Trends in daily test positivity rates & daily growth of COVID19 cases & tests in India (7-day rolling averages)

— Growth of cases — Growth of tests ○ TPR Daily ○ TPR Cumulative

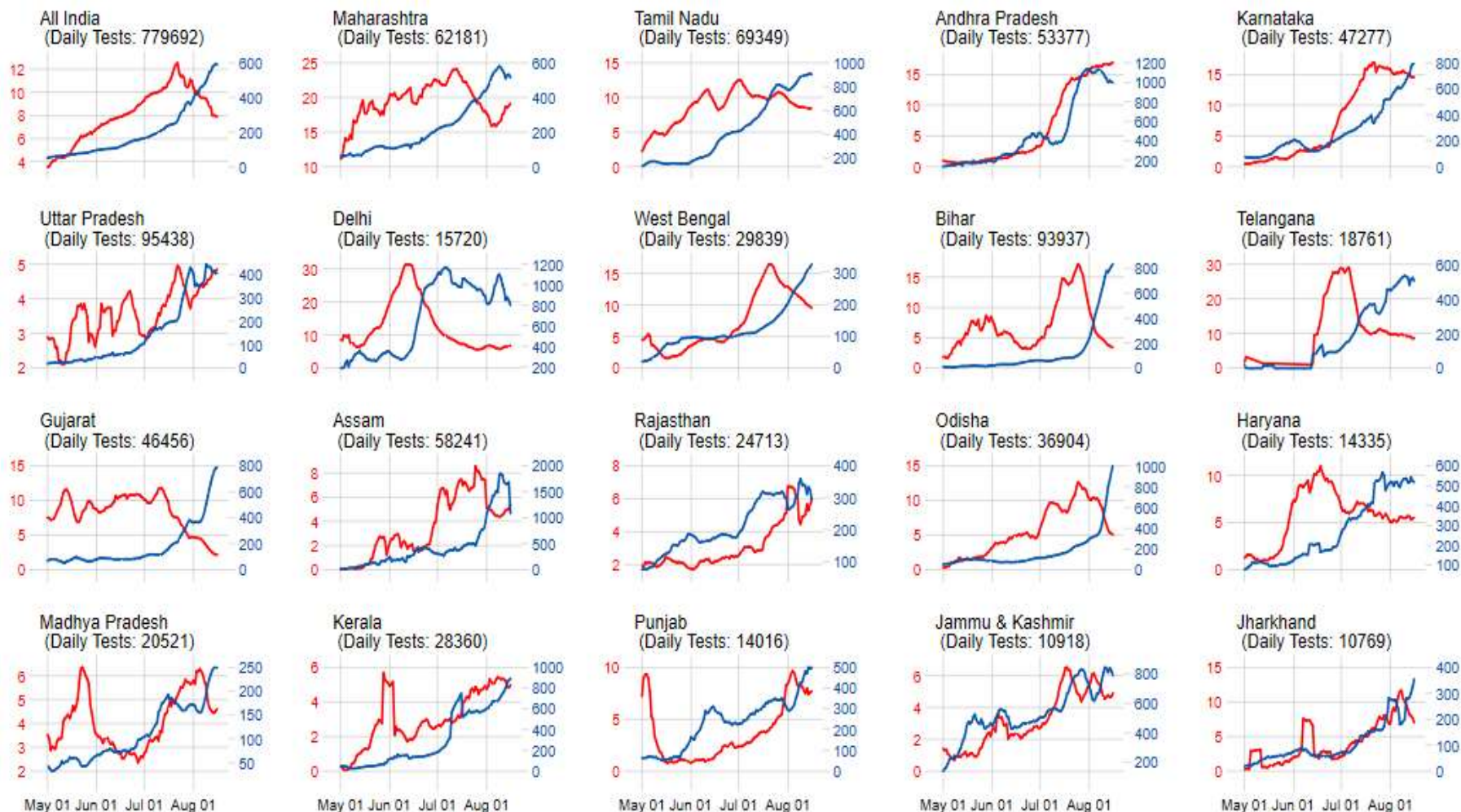


Data Source: India COVID-19 Tracker, <https://www.covid19india.org/>
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Trends in daily test +ve rate and tests per million per day in Indian states with 20K+ cases

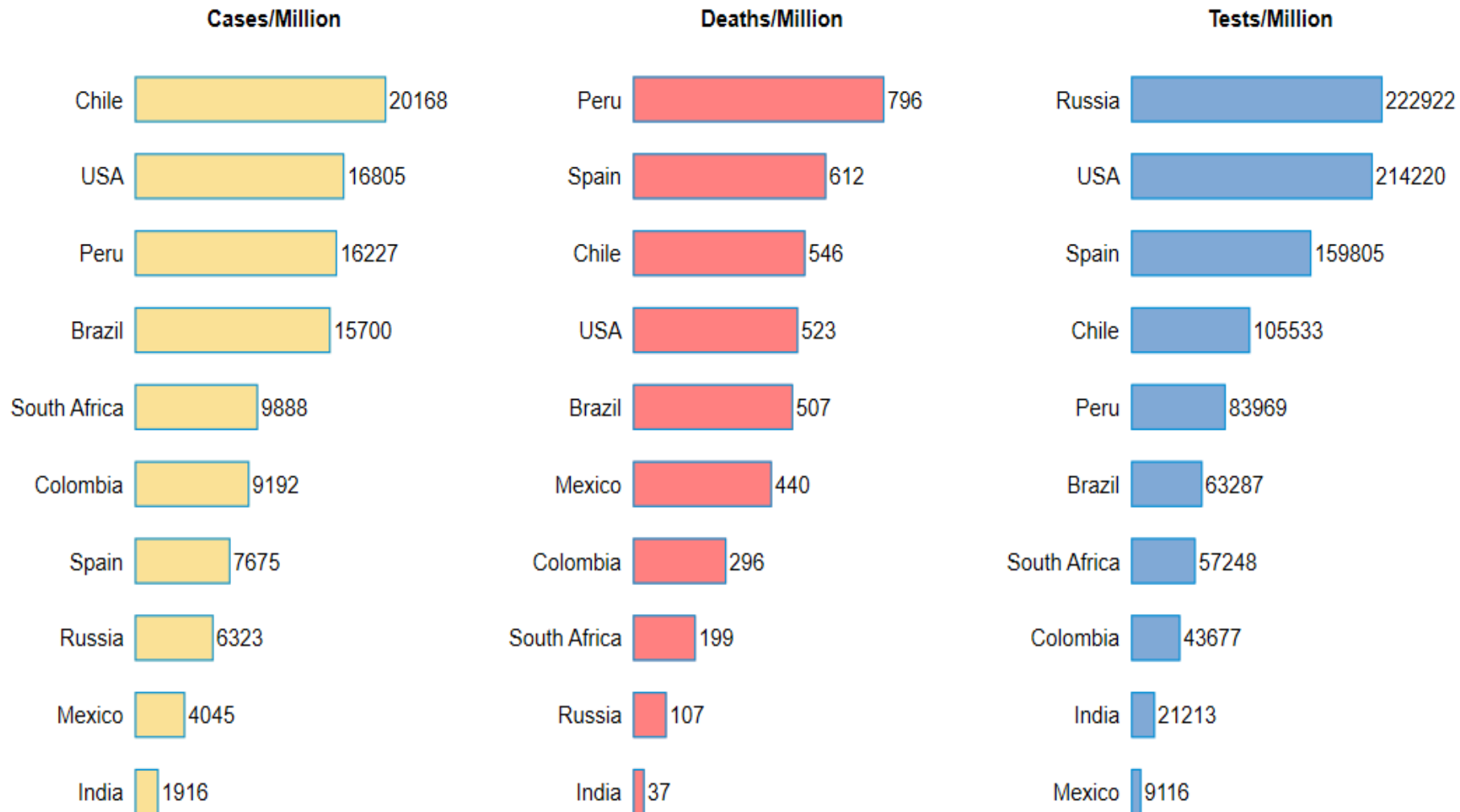
(All values are 7-day moving averages)

— Test Positive Rate (%) — TPM Per Day



Data Source: India COVID-19 Tracker, <https://www.covid19india.org/>
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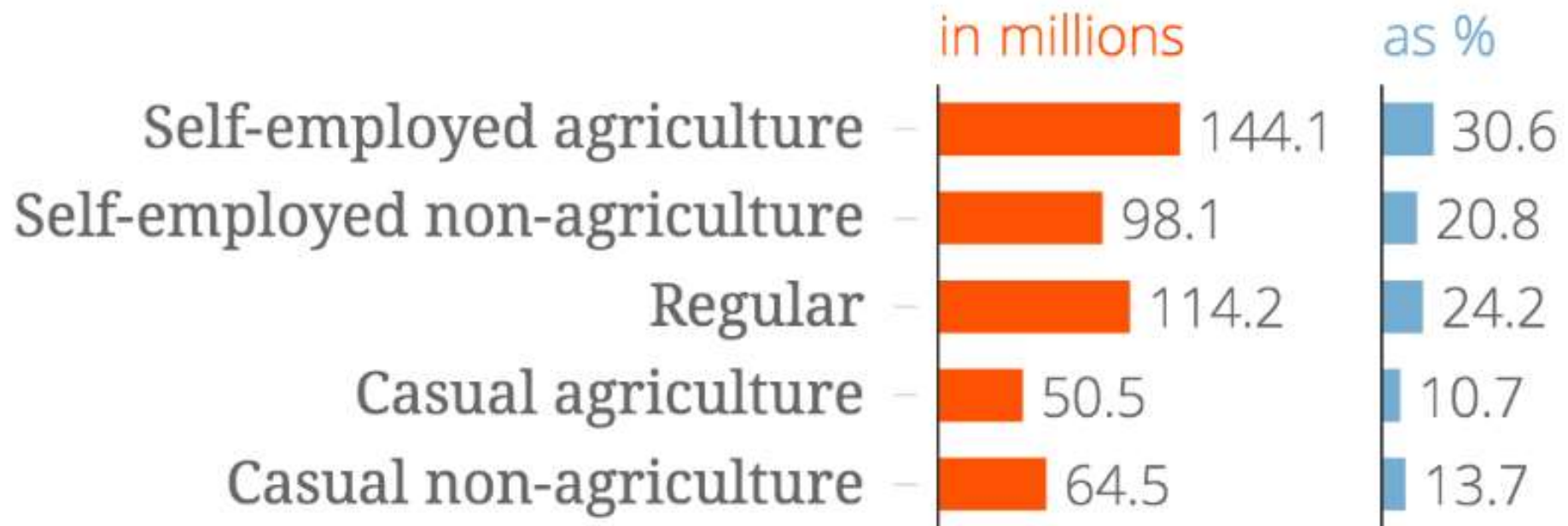
COVID-19 cases, deaths & tests per million population (Top 10 countries in terms of the reported cases)



India reports about 65K cases, close to 1000 deaths & 850K tests daily

IMPACT ON THE ECONOMY

India's workforce composition in 2018



Source: PLFS 2017-18, NSO (Estimated by Thomas, J. 2020)

- India's workforce consists of 471.5M workers
- Total wage incomes earned by all workers in the country in a month is estimated at about INR 4.8 trillion or 2.5% of the country's annual GDP in 2018 (Thomas, J (2020))

Lost wage income during lockdown

- CMIE estimates 122M people (26% of workforce) lost jobs in India in April 2020.
 - Some studies put this figure at 60% to 85%.
- Almost all casual workers and vast sections of the self-employed in India have lost their wages
- Nearly half of all regular workers (49.4%) in the country do not receive any form of social security
- Study by Thomas, J (2020) estimates India's workers may have lost approx. INR 4 trillion (2.2% of GDP) in 2 months during the lockdown

Arrivals in the agricultural markets between March 15 & May 31, for selected crops in India in 2019 & 2020 (tonne & per cent)

Crop	Total arrivals between March 15 and May 31, 2019 (in tonne)	Total arrivals between March 15 and May 31, 2020 (in tonne)	Arrivals in 2020 as per cent of arrivals in 2019 (%)
Paddy	19,40,434	17,07,024	88
Wheat	1,83,15,110	1,01,86,771	55.6
Maize	4,70,034	6,38,122	135.8
Barley	4,02,966	1,61,802	40.2
Gram (chana)	17,75,383	4,76,704	26.9
Pigeon pea (arhar)	2,90,474	1,18,335	40.7
Lentil (masur)	1,91,725	1,58,967	82.9
Potato	24,00,594	12,10,066	50.4
Tomato	5,13,851	4,10,711	79.9
Onion	30,17,686	10,74,346	35.6
Cabbage	1,29,757	86,923	67
Cauliflower	1,40,924	88,270	62.6
Peas (matar)	1,07,057	43,472	40.6
Lady's finger	1,01,125	71,187	70.4
Banana	3,86,328	3,13,567	81.2
Mango	3,69,991	95,719	25.9

Source: Computed from the CMIE commodities database, June 1, 2020 (R. Ramakumar, 2020)

Forecasted Percentage Change in Real GDP Growth

Projections	2019	2020	2021
IMF June 2020	4.2	-4.5	6
WB June 2020	4.2	-3.2	3.1
OECE June 2020	4.2	-3.7	7.9
ICRA July 2020 (for FY 20-21)	-	-9.5	-
SBI August 2020 (for Q1 FY20-21)	-	-16.5	-

Sources: Congressional Research Service, 2020 & others.

Estimated GDP loss due to lockdown

- Study by Pronab Sen, Programme Director, IGC India Programme
- The supply effect of the lockdown affecting 50 to 55% of the economy, leads to a weekly loss of approx. INR 2 Trillion (1% of 2019-20 GDP) translating to a loss of INR 19T (9.5% of GDP) for the lockdown period till May 31
- Adding the partial lockdowns by other states prior leads to a loss of INR 23T (11.5% of GDP)
- The ripple effects it creates on incomes can eventually lead to a loss of INR 40T (20% of GDP)
- Assuming already budgeted govt. expenditures were expected to generate a 6% growth in FY 20-21, the net loss will be a reduction of GDP in 20-21 by INR 23.3T, a shortage of close to 12%.
- If we also factor in possible fall in exports as global trade contracts, the estimated impact on India's GDP will be even larger
- ***The net -ve effect of the lockdown, export slowdown, and the fiscal stimulus provided so far in 2020-21 is estimated to be at least INR 25T or a GDP growth rate -12.5%***

Projected GDP trends, 2019-20 to 2023-24

	GDP	Growth rate		GDP	Growth rate
Financial Year	(Rs. Tr. 19-20 prices)	(year-on-year)	Financial Year	(Rs. Tr. 19-20 prices)	(year-on-year)
2019-20 (Pre-Covid)	207.1	5.0%	-	-	-
2019-20 (Post-Covid)	203.4	3.0%	2021-22 Annual	162.5	-8.80%
Q1 FY 21	30.8	-37.5%	Q1 FY 23	39.7	17.9%
Q2 FY 21	47.2	-3.9%	Q2 FY 23	41.3	12.4%
Q3 FY 21	47.8	-7.5%	Q3 FY 23	43.1	4.6%
Q4 FY 21	52.3	1.7%	Q4 FY 23	48.2	-5.2%
2020-21 Annual	178.2	-12.4%	2022-23 Annual	172.3	6.0%
Q1 FY 22	33.7	9.5%	Q1 FY 24	42	5.9%
Q2 FY 22	36.8	-22.2%	Q2 FY 24	43.8	6.0%
Q3 FY 22	41.2	-14.0%	Q3 FY 24	45.7	6.0%
Q4 FY 22	51	-2.8%	Q4 FY 24	51.1	6.0%
2021-22 Annual	162.5	-8.8%	2023-24 Annual	182.6	6.0%

Source: Pronab Sen, 2020, <https://tinyurl.com/y58x4jyb>

RECAP

- COVID-19 has spread far and wide in India and the daily numbers are still rising
- India's cases, deaths and tests should all be looked at per million population due to the sheer size of its population
- Success and failures of containment and/or mitigation differ so widely among states and has to do with each state's health infrastructure
- The mortality rate from COVID19 vary widely across states in India. For the country as a whole, it is on the lower side even if one allows for some under reporting of deaths
- The current testing strategy seems to be an effort at mitigation in a more cost effective manner which is suggestive of an acknowledgement that containment is no more possible

RECAP

- India had one of the most comprehensive, stringent and extended lockdowns anywhere in the world
- One could argue the pandemic could've been worse had such a lockdown not been there
- It could be also argued the pandemic could've been contained with the opportunity it got from the longest and stringent lockdown if it was better managed & planned
- In hindsight, seeing the devastating impact of a country wide lockdown which happened without much preparation, one could argue a more localized strategy could've been just as effective perhaps at a much lesser cost
- Going by the bottom-line (mortality), it is now clear that the damage to the country on account of a stringent lockdown is far more disconcerting than that from the pandemic itself.

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THANK YOU!!

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