

COVID 19: Mega Cities: October Performance Review

01 November 2020

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Project: Jeevan Raksha is a initiative of Proxima which focuses on Advocacy, Analytics, and Awareness in the area of healthcare

Mission: Actively contribute towards **Right to Health** as constitutional right of Indian citizen

Project: Jeevan Raksha has been in the forefront of providing sharper analytical insights on emerging pattern of COVID 19 in India to the Central / State Government administrations, media, and general public. The contribution is appreciated by many state Governments.

Project: Jeevan Raksha acknowledges the technical support and guidance of Public Health Foundation of India (**PHFI**)

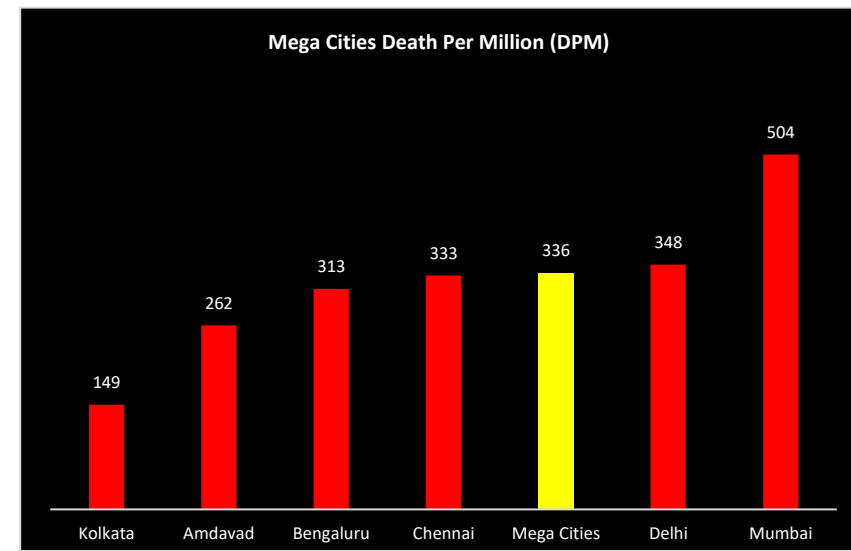
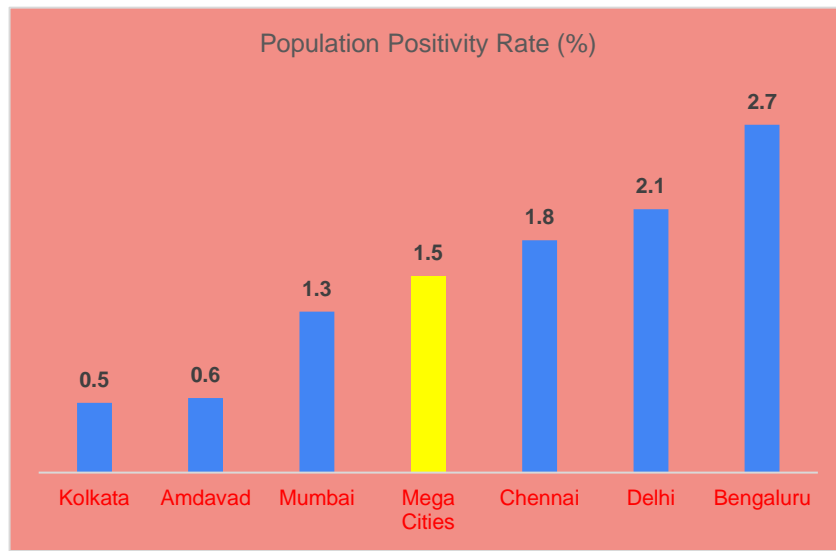


satyam-eva jayate, Truth alone triumphs, was adopted as the national motto of India on 26 January 1950

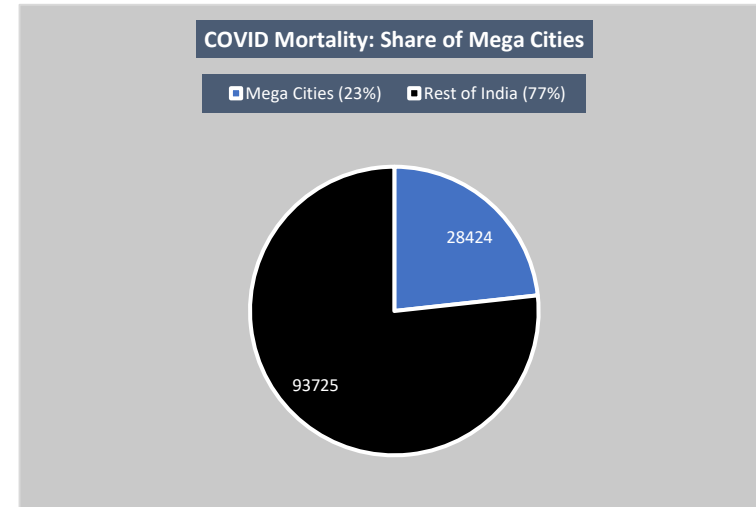
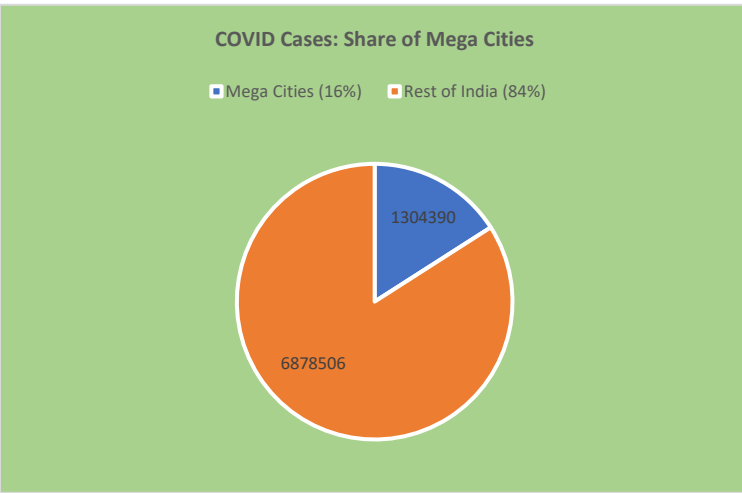
In COVID management, **Truthiness** in the disclosed data (data integrity) of Testing, Positivity, Recovery, and Fatality; or **truthfulness** of a individual about his/her (including family) health condition, is vital for India's efforts to save lives of the people.

1.5% of 8.45 Crores people living in 6 Mega Cities have so far tested positive for COVID 19

- 0.6% of India's total population have so far tested positive for COVID. Whereas in 6 mega cities, it is 1.5%, and Bengaluru has highest %ge of population who have tested positive
- Mumbai Death Per Million Population has crossed 500 mark, at a striking distance of France which is 563.
- DPM of Bengaluru, Chennai, and Delhi is over 300.



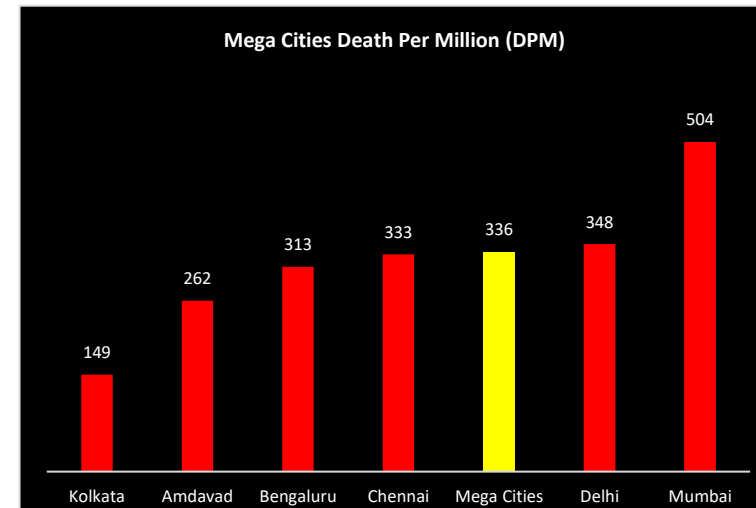
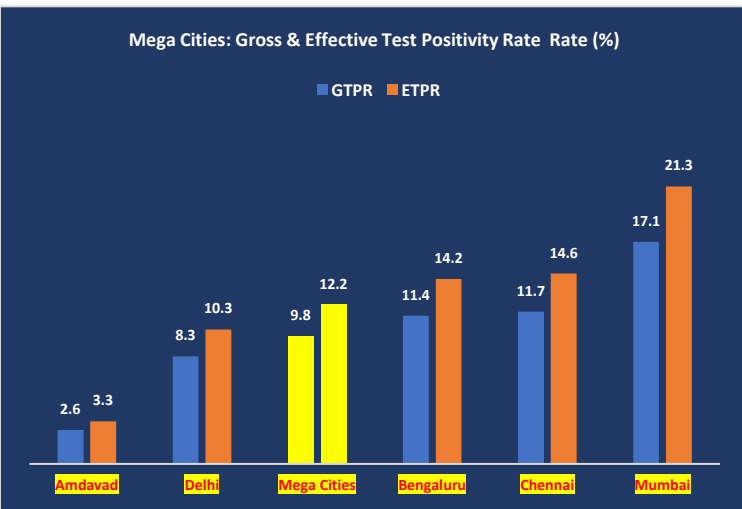
Lives of people living in 6 Mega Cities will be at high risk if restrictions are lifted without TPR coming down to WHO guidelines of below 5%



Recent surge in Europe, USA, and also in Delhi validates that ad-hoc lifting of restriction will put lives as well as livelihood of people at risk.

Government need to adhere to WHO guidelines of relaxing the restrictions subject to TPR falling below 5%

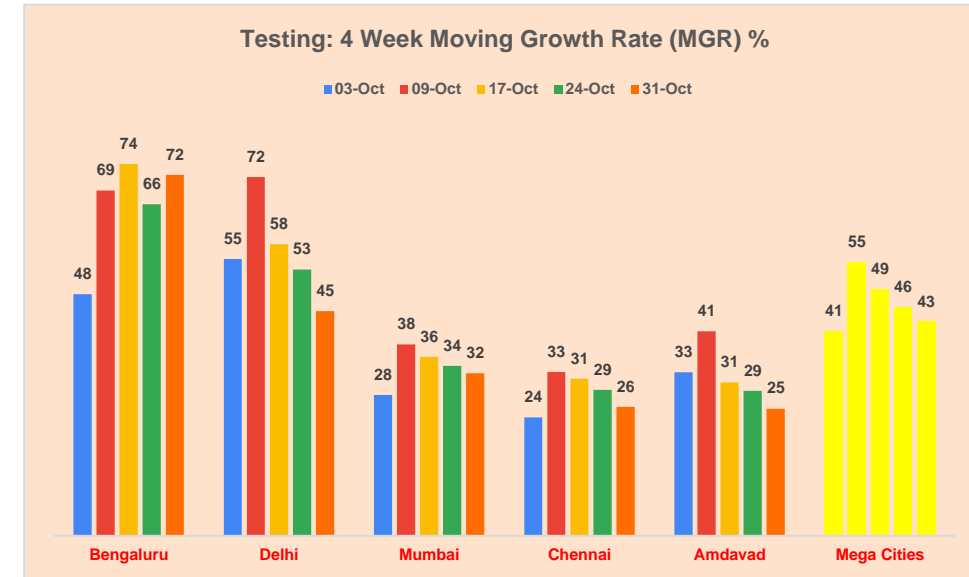
The average Effective TPR of 6 mega cities is 12.2%. Only Amdabad is ready for relaxing the restrictions.



* PS: Annexure for more details on ETPR

Mega Cities: Slow and Poor Quality Testing led to drop in Average Daily Positive Cases

- **Slowdown in Testing:** The average 4-Week Testing MGR of Mega Cities has dropped from 55% to 43%. This indicates the slowdown in Testing in Mega Cities.
- **TPR COVID period:** The Average Gross Test Positivity Rate (GTPR) and Effective Test Positivity Rate (ETPR) of Mega cities for the entire COVID period is 10.4% and 13.1%.
- **TPR in October:** During 03 – 31 October, 5 Mega cities collectively conducted 37.4 lacs COVID tests. The effective tests is 29.9 lacs (20% of the tests have been reduced as these are re-tests). Therefore, the effective Test Positivity Rate of Mega cities is only 9% in October as against 13.1% for the entire COVID period. This clearly indicates more number of people with least risk of COVID have been tested. This has resulted in decrease in average daily cases in Mega Cities.
- **Impact on Active cases:** As incremental new COVID cases was less in October due to the above reasons, as cascading effect, the number of active cases in Mega Cities reduced from 129739 to 103569, (-) 26170

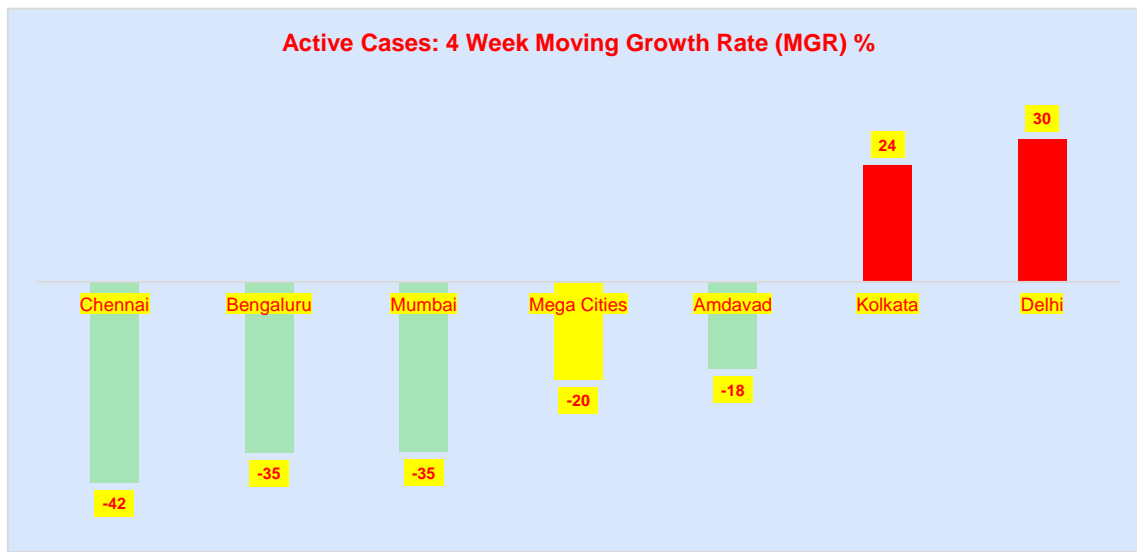


Mega Cities: Test Positivity Rate (Gross and Effective): 03 - 31 October (4 Wk)					
Cities	Positive Cases	Gross Tests	Effective Tests	Gross TPR	Effective TPR
Amdavad	5081	330000	264000	1.5	1.9
Delhi	98776	1450000	1160000	6.8	8.5
Bengaluru	90769	1240000	992000	7.3	9.2
Chennai	28501	350000	280000	8.1	10.2
Mumbai	45035	370000	296000	12.2	15.2
Mega Cities	268162	3740000	2992000	7.2	9.0

Mega Cities: Test Positivity Rate (Gross and Effective): Till Date					
Cities	Positive Cases	Gross Tests	Effective Tests	Gross TPR	Effective TPR
Amdavad	42514	1630000	1304000	2.6	3.3
Delhi	386706	4680000	3744000	8.3	10.3
Bengaluru	336469	2960000	2368000	11.4	14.2
Chennai	199916	1710000	1368000	11.7	14.6
Mumbai	257497	1510000	1208000	17.1	21.3
Mega Cities	1304390	12490000	9992000	10.4	13.1

Mega Cities: Drop in Active Cases: Causes and Effect

- 4 out of 6 mega Cities have negative growth.
- On 16th October, Bengaluru had 65664 Active cases. In a span of 2 weeks, the active cases has almost halved to 34459. The probable causes, which require deeper investigation, include – relatively faster testing leading to early detection when the onset of virus spread was mild. Another reason could be due to less number of incremental flow of new cases due to relatively poor quality in testing.
- Delhi had 21490 active cases in 13 October, it surged to 52%. One of the key reasons, which administration need to investigate in detail, is high usage of Rapid Antigen Test kits which has relatively high false negative reporting along with low rate of follow-up test in RT-PCR



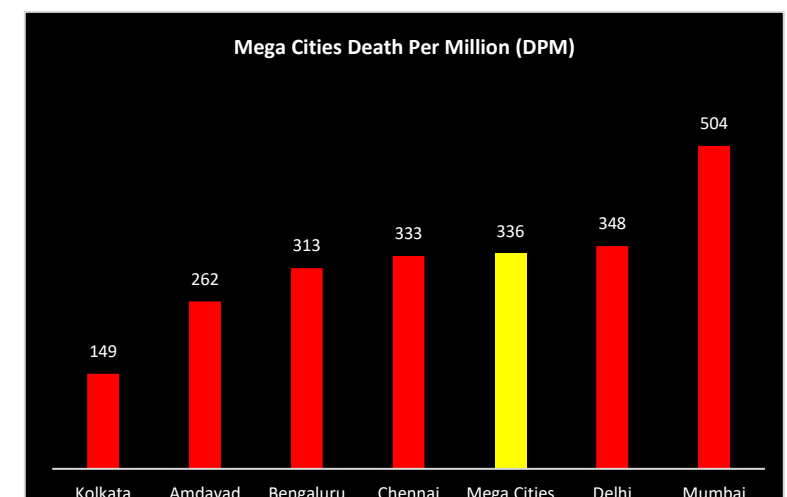
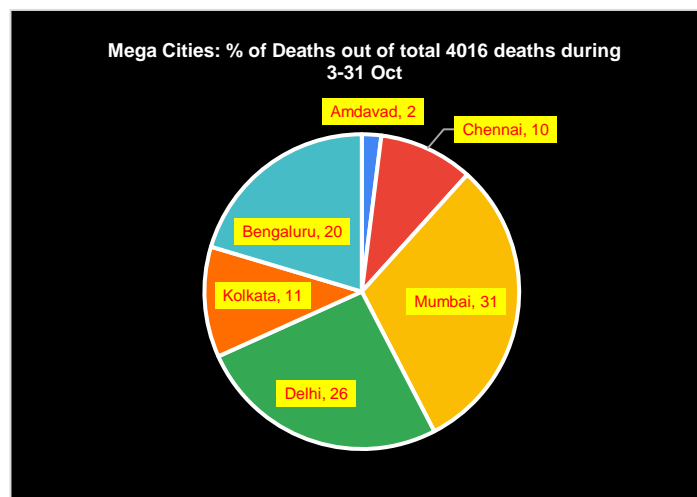
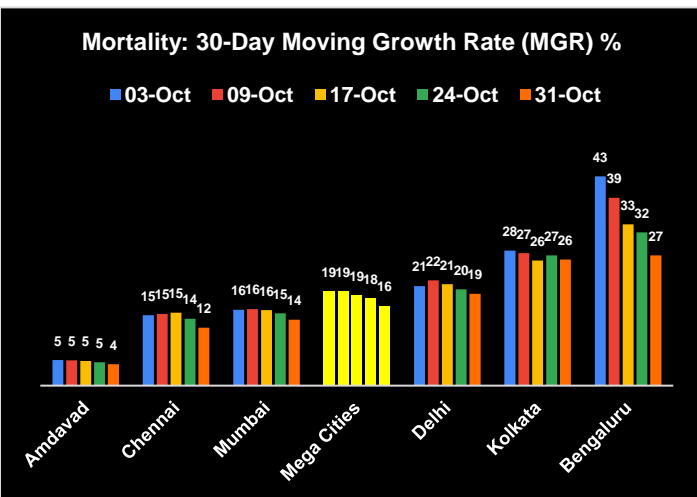
Mega Cities: Active Cases: 4 Week Moving Growth Rate (MGR) %			
Cities	03-Oct	31-Oct	MGR
Chennai	12314	7194	-42
Bengaluru	53292	34459	-35
Mumbai	29314	18980	-35
Mega Ciites	129739	103569	-20
Amdavad	3995	3278	-18
Kolkata	5590	6939	24
Delhi	25234	32719	30

Mega Cities: Mortality Pattern



- The Mortality growth Rate of mega cities has reduced from 19% to 16% in October. This indicates improvement in recovery.
- Bengaluru has witnessed sharp reduction in Mortality MGR in October from 43% to 27%. This is the effect of ramp-up of Testing in September which resulted in swift identification of infected people and isolating them while the onset of virus spread was mild
- Out of 4016 deaths during 03 – 31 October in 6 mega cities, % of deaths were high in Mumbai, Delhi, and Bengaluru

Mega Cities: Deaths: 3 - 31 October				
Cities	03-Oct	31-Oct	Increase	MGR
Amdavad	1822	1902	80	4
Chennai	3259	3648	389	12
Mumbai	9060	10293	1233	14
Delhi	5472	6511	1039	19
Kolkata	1750	2206	456	26
Bengaluru	3045	3864	819	27
Mega Cities	24408	28424	4016	16



WHO Goal

On May 12, 2020 the World Health Organization (WHO) advised governments that before reopening, rates of positivity in testing (TPR) (ie, out of all tests conducted, how many came back positive for COVID-19) of should remain at 5% or lower for at least 14 days.

Test Positivity Rate (TPR)

The Test Positivity Rate (i.e, out of all tests conducted, how many came back positive for COVID-19) is the most reliable way to determine if a government is testing enough.

- High TPR Implications: If a positivity rate is too high, that may indicate that the state is only testing the sickest patients who seek medical attention, and is not casting a wide enough net to know how much of the virus is spreading within its communities.
- Low TPR implications: A low rate of positivity in testing data can be seen as a sign that a state has sufficient testing capacity for the size of their outbreak and is testing enough of its population to make informed decisions about reopening.
- In order for governments to identify new cases and effectively respond to the pandemic through tracing and treatment, testing programs should be scaled to the size of the epidemic in the state, not the size of the population.
- Since confirmed case numbers may be dependent on how much testing a state is doing, it is also important to see how many tests have occurred in each state. If people who are infected cannot get tested, they will not be counted as a confirmed case in the state's data.

Introduction of Effective Test Positivity Rate (ETPR)

- One of the most important metrics for tracking the spread of COVID-19 is the “Test Positivity Rate” — or how prevalent positive cases of the disease are, when compared to the number of tests being done
- A high positivity rate is indicative of higher infection in the community and points to the need for ramping up testing. According to WHO, whenever positivity rate crosses 5%, it is an indication that testing is not keeping pace with rise in cases.
- A low positivity rate is a good sign. Because not everyone who has COVID-19 gets tested, rising case numbers could mean that the disease is spreading, or that testing efforts are identifying a larger share of the sick people in the country / state.

There are two ways to calculate Test Positivity Rate:

Method 1: Divide the number of people who have tested positive by the number of people who have been tested

Method 2: Divide the number of people who have tested positive by the number of total tests

These two methods won't produce the exact same numbers, depending on how many people get tested multiple times and how many people rack up multiple positive tests.

Effective Test Positivity Rate Model

Illustration: Impact of Re-tests on Test Positivity Rate (TPR)%			
Particulars		Rapid Antigen Test (RAT)	RT PCR
Number of People Tested	100000	50000	50000
Number of Positive Patients(8% TPR)	8000		
Re-test: Category-1*: False Negative Report (40%) of RAT			20000
Re-tests: Category-2*: Discharge		2000	2000
Total Number of People Tested (A)	100000	* % is re-tests due to false Negative report as well as discharge could vary from state to state.	
Total Number of Tests Conducted (B)	124000		
Effective Test Positivity Rate (%) when denominator is A	8		
Gross Test Positivity Rate (%) when denominator is B	6.5		

Data source and disclaimer

1. The data collated and analysed based on secondary data. The primary sources are:
<https://www.mohfw.gov.in/> <https://www.covid19india.org/> www.google.com; www.wikipedia.org;
<https://www.worldometers.info/coronavirus/#countries> / <https://coronavirus.jhu.edu/>
2. Updated testing data of 4 mega cities (Ahmedabad, Bengaluru, Chennai, Delhi, and Mumbai) are available in the public domain. Whereas, updated testing data of Kolkata and Hyderabad is not to be found by our researchers. The analysis of average testing data has limitation with respect to data of 5 mega cities. Therefore, readers of this report need to factor the same for further inferences.
3. Information related to current status of Telangana and its districts are not available in the public domain. Therefore, readers of this report need to factor the same for further inferences.
4. The user of this presentation is advised to revalidate the shared data from authorised public institutions.

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Thank you