

COVID 19: Mega Cities: Trend Analysis

15 May 2021

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.

Mega Cities Overview



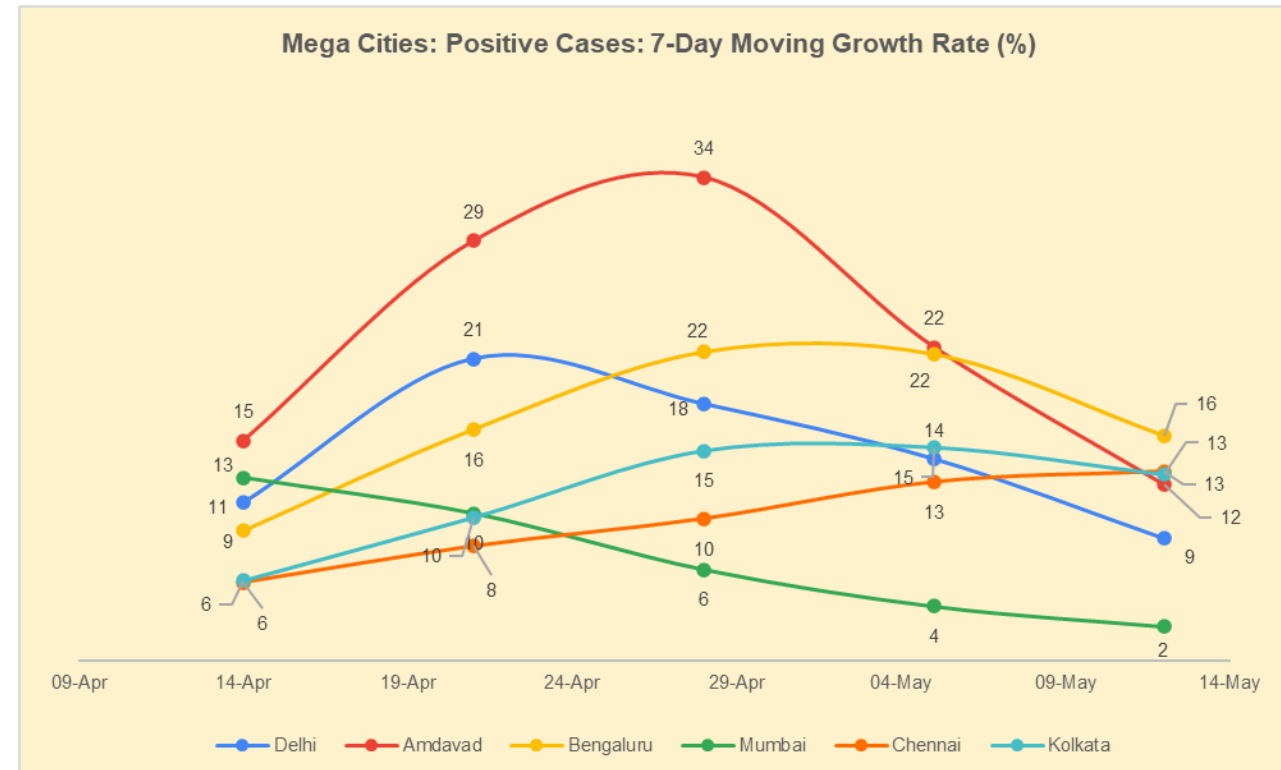
- 8.45 Mn people (6% of India's population) live in 6 Mega Cities – Amdavad, Bengaluru, Chennai, Delhi. Kolkata and Mumbai
- 4.2% of total population of these 6 Mega Cities are infected with COVID 19
- 15% of COVID Patients in India live in these 6 mega cities. As on 12th May, the cumulative number of Positive cases in these 6 cities are 3547258
- 16% of Active COVID Patients in India live in these 6 mega cities. As on 12th May, the cumulative number of Active cases in these 6 cities are 594029
- 1 in every 5 deaths in India, occur in these 6 mega cities. As on 12th May, the cumulative number of COVID deaths in these 6 cities are 55657
- Each Mega City has developed its own COVID Management strategy and witnessing mixed results.
- Bengaluru and Delhi have already conducted number of tests equivalent to 90% of its population.

Only Mumbai is eligible for Lockdown Relaxation



- In India, every 1,00,000 new cases, @ 1.1% Case Fatality Rate (CFR), leads to incremental increase in COVID death by 1,100. Therefore, in order to reduce the number of deaths, it is absolute necessary to reduce the growth rate of positive cases. Therefore, according to Containment Management Module of PPMS it is recommended that, the **7-Day Moving Growth Rate (MGR) should be below 2%** with a goal to achieve 0%.
- Mumbai** has been successful in reducing the 7-Day Moving Growth Rate (MGR) to 2%, least amongst the mega cities. This implies that the average daily new cases in Mumbai has reduced which implies that the doubling period for positive cases has increased. Therefore, Mumbai is eligible to relax the curbs imposed in the city with appropriate control measures.
- Bengaluru's** COVID management performance is of serious concern. The 7-Day MGR of Positive cases has increased from 9% in the week ending 14th April to 16% in the week ending 12 May. This implies that the daily average number of new cases has increased and also the doubling period has reduced. The surge is witnessed inspite of complete lockdown being imposed in the city since 27th April.
- The 7-Day MGR of Positive Cases has increased in other Mega cities which include – Chennai (13%), Kolkata (13%), Amdavad (12%), and Delhi (9%). This indicates poor testing, both qualitative as well as quantitative.

Mega Cities: Cumulative Positive Cases					
Mega Cities	14-Apr	21-Apr	28-Apr	05-May	12-May
Delhi	767438	930179	1098051	1253902	1361986
Amdavad	89640	116062	155449	189684	213148
Bengaluru	502024	583675	710347	863380	999805
Mumbai	545195	601713	640409	665057	681233
Chennai	272118	294073	323452	364081	412505
Kolkata	145343	160010	183632	211154	238793
Mega Cities	2321758	2685712	3111340	3547258	3907470



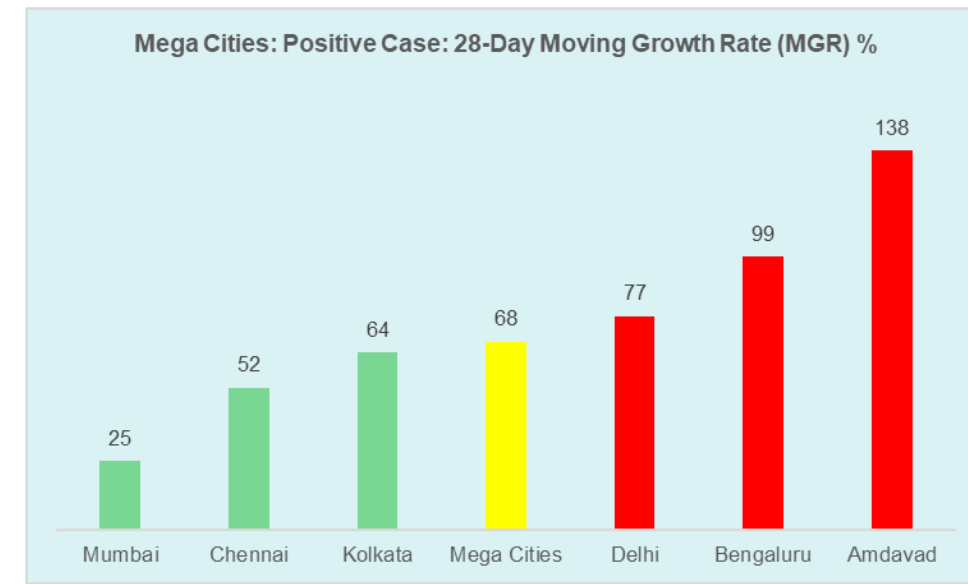
7-Day MGR should be below 2% before relaxing the curbs

28-Day: Positive Cases: Moving Growth Rate Pattern

- During 14 Apr – 12 May, Mega Cities have collectively added nearly 1.6 Mn COVID Cases, increase of 68%. 2/3rd of the increase was contributed by Bengaluru (4.97 Lacs) and Delhi (5.94 lacs). However, last few days pattern has indicated downwards movement of positive cases, which is a good sign.
- In Amdavad, COVID cases has increased by 138%, highest among Mega Cities. This is a strong indicator that medical infrastructure is stretched.
- Kolkata added 93450 cases during this period, least among mega cities
- Need for improvement in Quality of Testing: In Bengaluru and Delhi, nearly 75% of its population have been tested (after factoring 20% repeat tests), whereas 28-Day MGR is highest in these two cities, 100% in Bengaluru and 77% in Delhi. This reflects the need for improvement in quality of testing

Lockdown in Delhi and Bengaluru has failed to save lives: The primary purpose of imposing restrictions is to save lives. Whereas lockdown in Delhi and Bengaluru has yielded limited results in terms of curbing both the growth rate of positivity and mortality. During the period, COVID cases has doubled in Bengaluru from 5 Lakh to 10 Lakh and in Delhi it has surged from 7.6 Lakh cases to 13.6 Lakh. This is the primary reason for Delhi and Bengaluru to contribute 75% of the total death (17007) occurred in these 6 mega cities.

Mega Cities: Positive Cases: 28 Day Moving Growth Rate (%)			
Mega Cities	14-Apr	12-May	MGR
Mumbai	545195	681233	25
Chennai	272118	412505	52
Kolkata	145343	238793	64
Delhi	767438	1361986	77
Bengaluru	502024	999805	99
Amdavad	89640	213148	138
Mega Cities	2321758	3907470	68



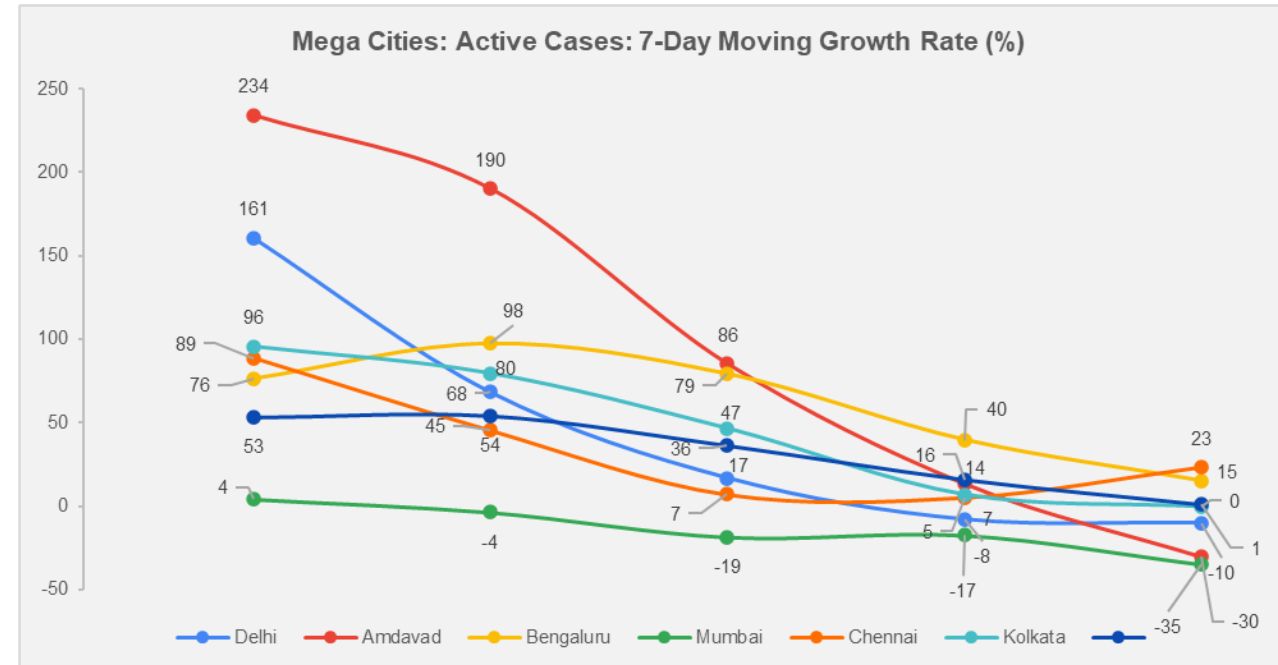
7-Day: Active Cases: Moving Growth Rate Pattern

Increase in Active Cases Moving Growth Rate (MGR) indicates increase in demand for hospitalisation and vice-versa.

Further, if MGR of Active Cases decreases, it indicates that the region has been successful in containing the spread of virus and also increasing recovery due to timely medical intervention in the said period.

- In the week ending 12 May, when compared with previous weeks, 7-Day Active cases MGR in all the Mega Cities has **DECLINED**, except in Bengaluru and Chennai.
 - In Chennai, active cases has increased by 23% during the same period whereas in Bengaluru it has increased by 15%.
- 60% of the Active cases of Mega Cities are in Bengaluru
- Mumbai has witnessed consistent decline in active cases
- It is strange to note that in Amdavad inspite of 12% increase in positive cases, the active cases has degrown by 30% during the week ending 12 May 2021. This pattern is the indicator of declaring of large number of COVID patients as RECOVERED before the mandatory isolation period and also without carrying out test to confirm the recovery. The same pattern is seen in Kolkata as well. In Kolkata positive cases has increased by 13%, there is no corresponding increase in active cases.

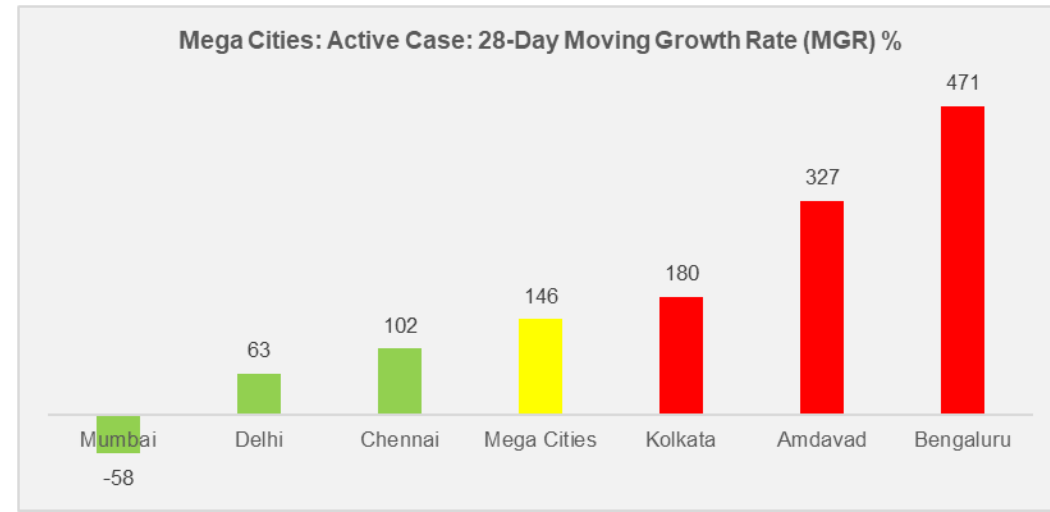
Mega Cities:Active Cases					
Mega Cities	14-Apr	21-Apr	28-Apr	05-May	12-May
Delhi	50736	85364	99752	91859	82725
Amdavad	11049	32084	59527	67649	47174
Bengaluru	63167	124894	224152	313314	360619
Mumbai	86635	83450	67984	56153	36595
Chennai	20147	29259	31298	32920	40616
Kolkata	9380	16854	24709	26402	26300
Mega Cities	241114	371905	507422	588297	594029



28-Day: Active Cases: Moving Growth Rate Pattern

- In 4 Weeks (14 Apr – 12 May), Active cases in Mega cities increased by 3.5 Lacs, nearly 150% surge, of which Bengaluru added 3 Lakh cases, 85% of the total active cases cumulatively added by all the Mega cities.
- Mumbai is the only Mega city to witness negative growth of active cases. It is successful in reducing the active cases by nearly 60% from 86K to 36K. On the other hand, Active cases in Delhi Shot-up by over 60% from 50+K to 82+K
- Active cases in Kolkata grows over 2.5 times, from 9380 to 26300
- Active cases in Amdavad increase by over 4 times from 11049 to 47174

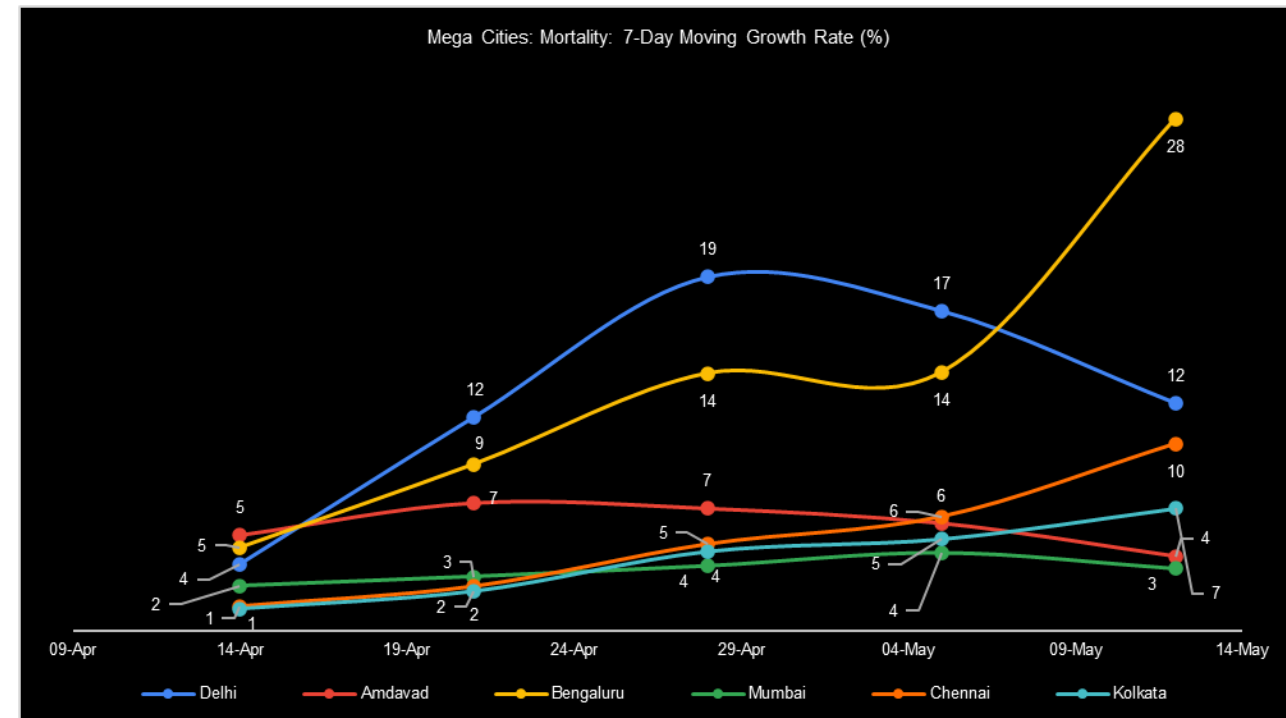
Mega Cities: Active Cases: 28 Day Moving Growth Rate (%)			
Mega Cities	14-Apr	12-May	MGR
Mumbai	86635	36595	-58
Delhi	50736	82725	63
Chennai	20147	40616	102
Kolkata	9380	26300	180
Amdavad	11049	47174	327
Bengaluru	63167	360619	471
Mega Cities	241114	594029	146



7-Day: Mortality: Moving Growth Rate Pattern

- During the week ending 12th May, 5534 deaths occurred in 6 mega cities, of which 35% occurred at Bengaluru (1958)
- Average daily deaths during the week: Delhi (321), Bengaluru (280), Chennai (72), Mumbai (66), Kolkata (34), and Amdavad (18).
- Bengaluru is having highest Mortality MGR of 28%, this means the doubling period is relatively shorter. This also indicates that the average daily number of deaths has increased when compared with previous weeks.
- Mumbai has the least Mortality MGR of 3%, infact, it is the only mega city to achieve negative mortality MGR which validates excellent and timely clinical intervention through right testing and right tracing.
- 506 deaths occurred in Chennai, Amdavad (124), Mumbai (461), and Kolkata (236).

Mega Cities: Number of Deaths					
Mega Cities	14-Apr	21-Apr	28-Apr	05-May	12-May
Delhi	11540	12887	15377	18063	20310
Amdavad	2514	2690	2870	3039	3163
Bengaluru	4933	5382	6139	7006	8964
Mumbai	12147	12508	12954	13511	13972
Chennai	4341	4447	4658	4949	5455
Kolkata	3175	3244	3385	3555	3793
Mega Cities	38650	41158	45383	50123	55657

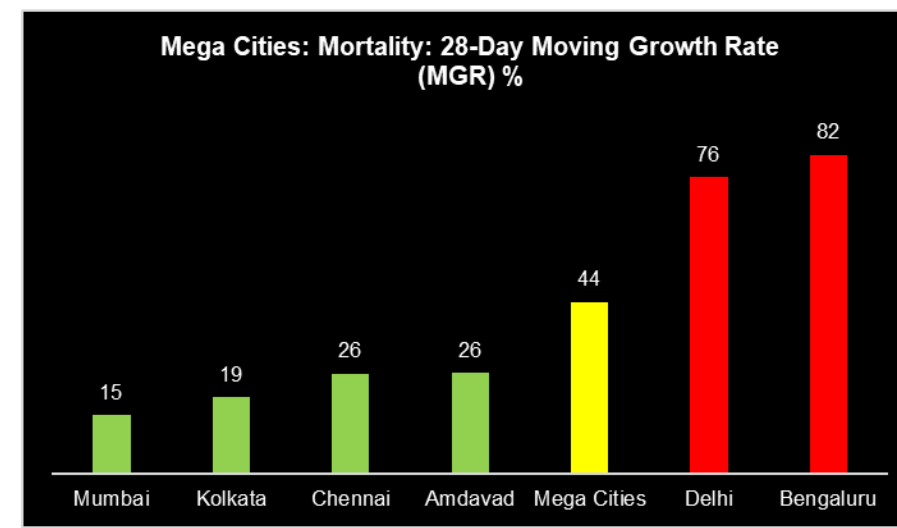


28-Day: Mortality: Moving Growth Rate Pattern

During the 4-Week period: 14 Apr – 12 May:

- 17,000 people succumbed to COVID in these 6 mega cities, over 50% occurred in Delhi 24% in Bengaluru.
- Bengaluru is having highest 28-Day Mortality MGR of 82%, followed by Delhi 76%. This means the doubling period for deaths is shorter than other mega cities. This indicates that both cities are relatively facing more challenges to early detect the infected people and accordingly provide appropriate medical intervention.
- On the other Mumbai witnessed 1825 deaths, 11% of the total deaths occurred in mega cities. It also has the least MGR of 15%, which indicates that Mumbai has relatively longer than any other mega cities.
- During the period, Chennai witnessed 1114 deaths, Kolkata 618, and Amdavad 649.

Mega Cities: Mortality: 28 Day Moving Growth Rate (%)			
Mega Cities	14-Apr	12-May	MGR
Mumbai	12147	13972	15
Kolkata	3175	3793	19
Chennai	4341	5455	26
Amdavad	2514	3163	26
Delhi	11540	20310	76
Bengaluru	4933	8964	82
Mega Cities	38650	55657	44



Data source and disclaimer

- 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/>
- The user of this presentation is advised to revalidate the shared data from authorised public institutions.

For more details, send email to:

Mysore Sanjeev

Convenor

Project: Jeeavan Raksha

email: jeevanrakshe1@gmail.com

Thank you