

COVID 19: Mega Cities: Testing and Mortality Pattern

08 November 2020

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**)



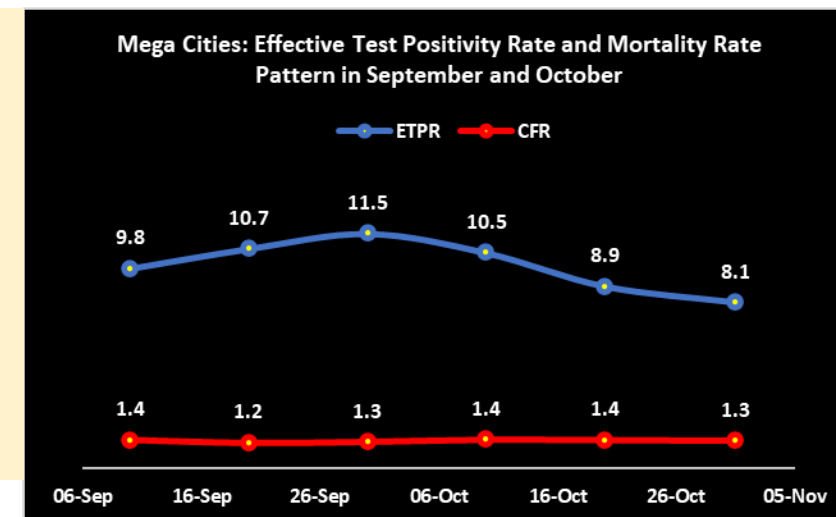
satyam-eva jayate, Truth alone triumphs, was adopted as the national motto of India on 26 January 1950

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: Decline in Test Positivity Rate, New cases continue to increase; Mortality Rate Unmoved!!



- In Mega Cities both COVID cases and deaths has increased in October when compared to September.
- On the other hand, the total Effective Testing (after reducing 20% towards retests) in Mega cities has increased from 2.86 Mn to 3.3 Mn. Almost all incremental testing (4.2 lacs) was carried out by Bengaluru alone
- The drop in ETPR of Mega cities from 11.5% in September to 8.1% in October is primarily due to poor quality of testing of Bengaluru and Mumbai
- In October, Amdavad reduced the number of monthly tests to 3.02 lacs against 4.2 lacs in September
- Delhi inspite of witnessing surge in COVID cases as well as deaths, has marginally increased testing in October



Mega Cities: September Analysis: 10-Day Pattern of ETPR and CFR																		
Mega Cities	01 - 10 September					11 - 20 September					21 - 30 September					September Total		
	Tests	Cases	Deaths	ETPR	CFR	Tests	Cases	Deaths	ETPR	CFR	Test	Cases	Deaths	ETPR	CFR	Test	Cases	Deaths
Delhi	314419	30734	222	9.8	0.7	474310	41229	316	8.7	0.8	419966	33004	379	7.9	1.1	1208695	104967	917
Amdavad	177322	1685	33	1.0	2.0	139870	1738	34	1.2	2.0	103622	1906	30	1.8	1.6	420814	5329	97
Bangaluru	235800	31080	375	13.2	1.2	204682	34555	317	16.9	0.9	213774	37903	279	17.7	0.7	654256	103538	971
Chennai	108909	10009	174	9.2	1.7	96477	10033	137	10.4	1.4	99362	11737	152	11.8	1.3	304748	31779	463
Mumbai	94765	17310	365	18.3	2.1	100119	21324	446	21.3	2.1	82630	20829	460	25.2	2.2	277514	59463	1271
Kolkata	0	4800	143	0	3.0	0	5170	148	0.0	2.9	0	6285	129	0.0	2.1	0	16255	420
Total	931215	95618	1312	9.8	1.4	1015458	114049	1398	10.7	1.2	919354	111664	1429	11.5	1.3	2866027	321331	4139

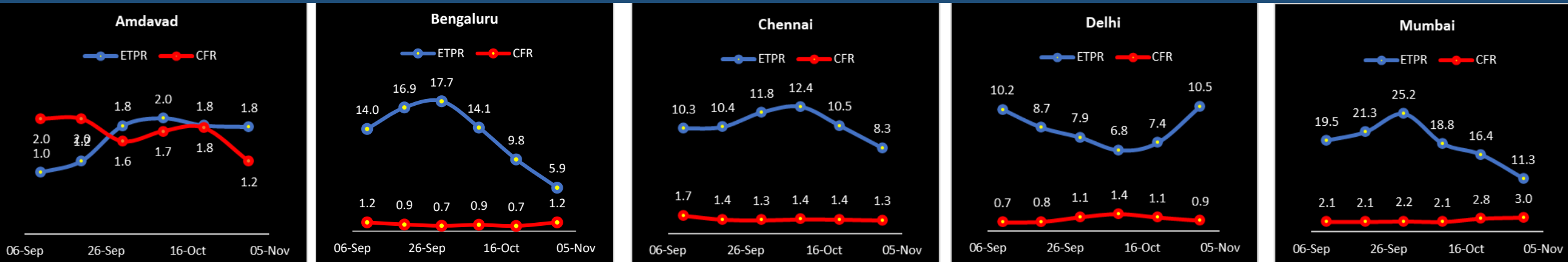
Mega Cities: October Analysis: 10-Day Pattern of ETPR and CFR																		
Mega Cities	1 - 10 October					11 - 20 October					21 - 31 October					October Total		
	Tests	Cases	Deaths	ETPR	CFR	Tests	Cases	Deaths	ETPR	CFR	Tests	Cases	Deaths	ETPR	CFR	Test	Cases	Deaths
Delhi	395761	26844	379	6.8	1.4	407048	30191	341	7.4	1.1	477775	49956	430	10.5	0.9	1280584	106991	1150
Amdavad	95992	1889	33	2.0	1.7	99192	1829	33	1.8	1.8	107005	1948	24	1.8	1.2	302189	5666	90
Bangaluru	313074	44271	384	14.1	0.9	366249	35908	258	9.8	0.7	397281	23627	286	5.9	1.2	1076604	103806	928
Chennai	108258	13375	186	12.4	1.4	104614	11003	150	10.5	1.4	97786	8162	105	8.3	1.3	310658	32540	441
Mumbai	116889	22008	462	18.8	2.1	103255	16984	473	16.4	2.8	117172	13237	397	11.3	3.0	337316	52229	1332
Kolkata	0	7274	151	0.0	2.1	0	7776	158	0.0	2.0	0	9826	187	0.0	1.9	0	24876	496
Total	1029974	115661	1595	10.5	1.4	1080358	103691	1413	8.9	1.4	1197019	106756	1429	8.1	1.3	3307351	326108	4437

Mega Cities: - Inconsistent Testing Quality, leading to decline in Testing Yield & continued spread of virus

- Bengaluru:** In September, 6.5 lacs tests were conducted which yielded 1.3 lacs cases, the Effective Test Positivity Rate (ETPR) was 15.8%, whereas in October, 1.07 Mn tests yielded only 1.03 lac cases, ETPR* it dropped to 9.6%. This indicates deteriorated quality of testing. On the other hand, the number of deaths has marginally reduced from 971 to 928
- Chennai:** Continues to be in AUTO MODE. Not much improvements for last 6-8 weeks in any of the critical parameters. During 1 – 10 September 1.08 lakh tests yielded 10008 cases with ETPR* of 9.2, whereas during 1 – 10 October, same quantity of testing (1.08 lacs) yielded 13375 cases with ETPR of 12.4%.
- Mumbai:** Even though having highest number of deaths, which continues to increase, the number of tests conducted by Mumbai is the least among the mega cities. Further, the quality of testing has deteriorated in October. In September, 2.77 lacs tests yielded 59K cases @ the ETPR of 21.4%. In October, the number of tests increased to 3.3 lacs, however the yield was on 52K cases @ the ETPR of 15.5%.
- Delhi:** Number of cases and deaths has surged, but no improvement in testing quality in October, whereas there is marginal increase in quantity of testing
- Amdavad:** Managing COVID relatively well on all parameters. On 19th July the Effective Test Positivity Rate (ETPR)* was 17.8%. The 10-day average ETPR for the period 1 – 10 September has dropped to 1%. Further,, the ETPR during September-October has been in the range of 1 – 1.8%. During September and October, 8576 people died in 6 mega cities, whereas in Amdavad fortunately only 187 people died (2%).

* ETPR: 20% of the COVID tests conducted are re-tests. Therefore, 20% is reduced from the total tests and TPR is calculated.

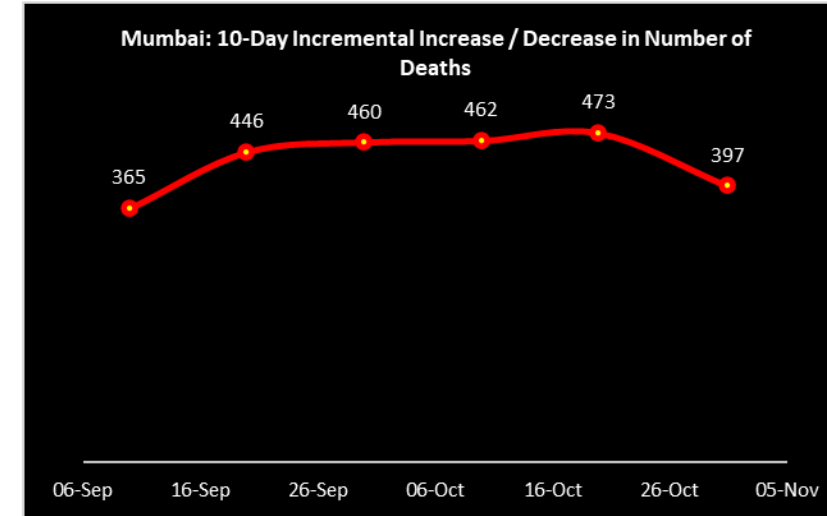
The downward movement of Effective Test Positivity Rate Curve and upward movement of Case Fatality Test confirms poor quality of testing



1.3% of Mumbai population have tested positive for COVID Need to improve testing: Qualitatively and Quantitatively

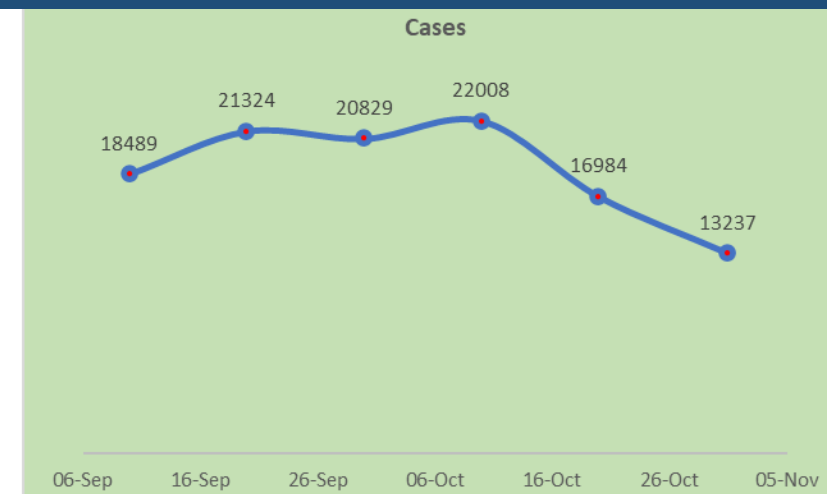
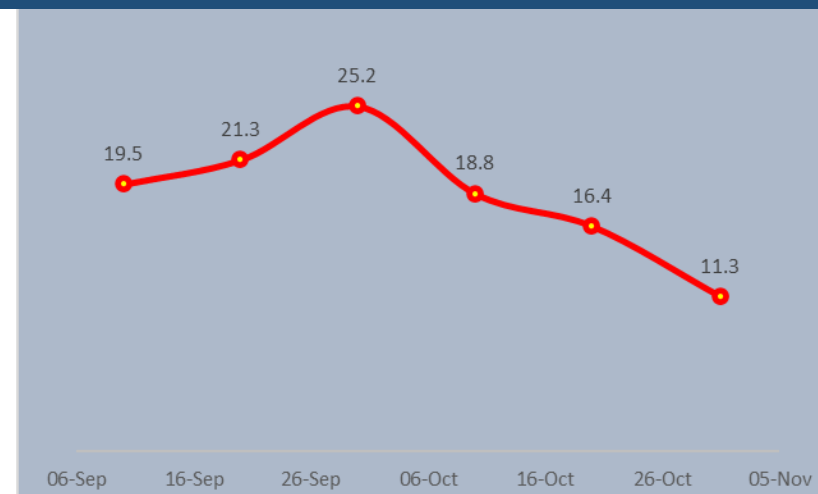
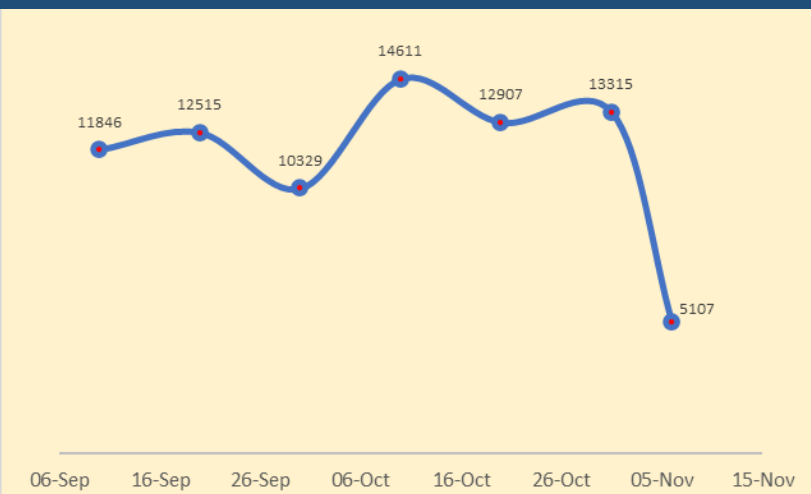
- **Active cases** has dropped from 29K to 16K in October.
- **Least Testing:** In spite of continued increase in number of deaths, Mumbai is testing 76918 / Mn population, least among all the mega cities
- **Poor Quality of Testing:** In spite of increase in testing, The Effective Test Positivity Rate (ETPR)* has dropped to 15.5% in October from 21.4% in September.
- **Increase in Mortality:** At the end of September, the death per million was 444, it has increased to 511. This reflects that the administration efforts are yielding limited results due to weak containment management

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In Pandemic, Higher testing will lead to more number of positive cases, vice-versa.

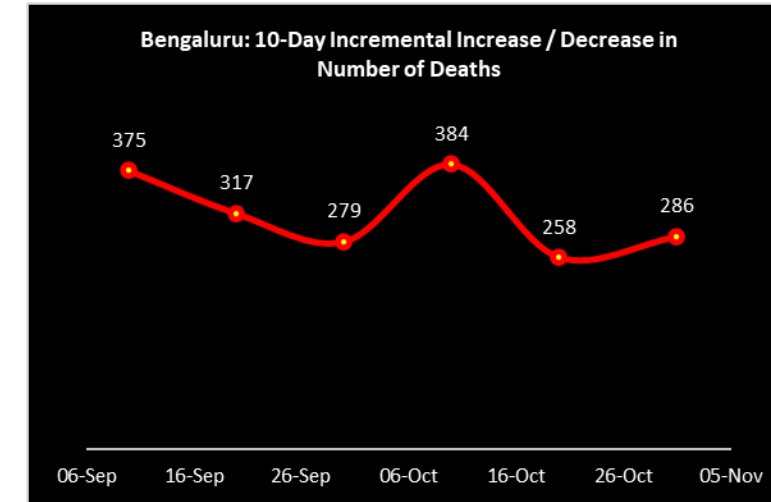
If movement of ETPR is downwards and number of death is moving upwards. indication of Poor tracing and high wastage of testing kits and resources



Bengaluru: High volume testing with low yield is delusory, will artificially deflate TPR, NOT reduce the virus spread and mortality!

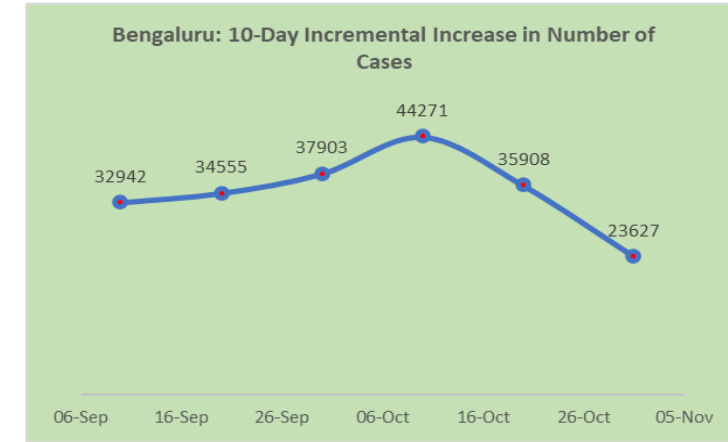
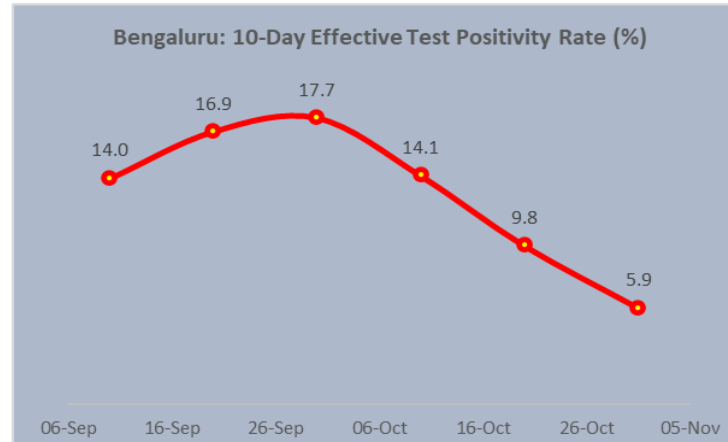
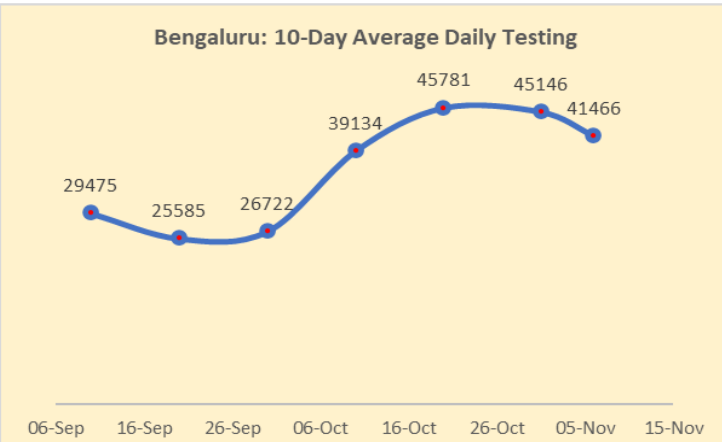


- **Substantial Decrease in Active Cases:** On 10 Oct, Bengaluru had 65K active cases, 47% of total active cases in Mega cities. This has reduced to 18K, 20% of total active cases in mega cities
- **Poor quality of Testing:** 6.6 lacs tests in September yielded 1.03 lacs COVID cases, yield of 15.8% ETPR*. Whereas in October, total testing was increased to 1.07 Mn, which yielded the same number of cases 1.03 lacs, the yield dropped to 9.64%.
 - **Conclusion:** Poor testing yield indicates high probability of testing of low risk people without clear justification for testing them. This would lead to increase in testing number and also negative reports
 - Increase in number of retests
 - High usage of Rapid Antigen Tests which has high probability of false negative repo
- **Marginal decrease in Death:** In September, Bengaluru witnessed 971 deaths, whereas in October 928 deaths occurred.
 - **Conclusion:** Need to increase the testing yield by improving the robustness of tracing and testing



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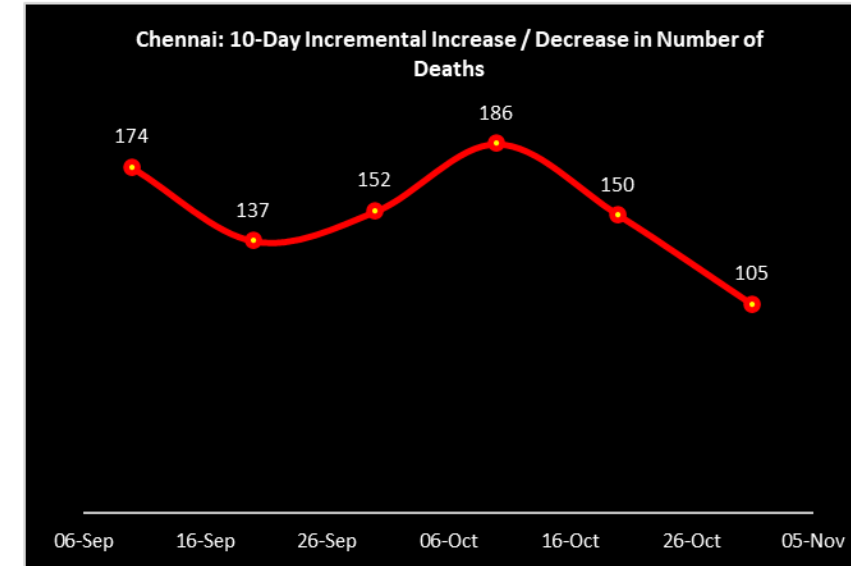
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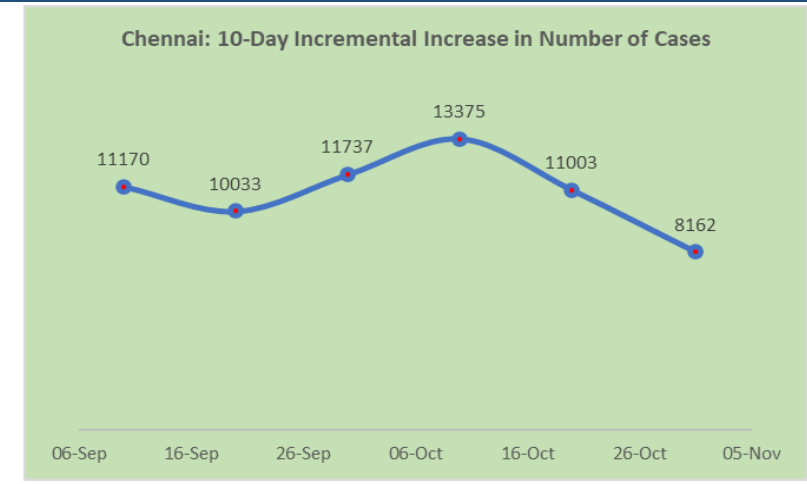
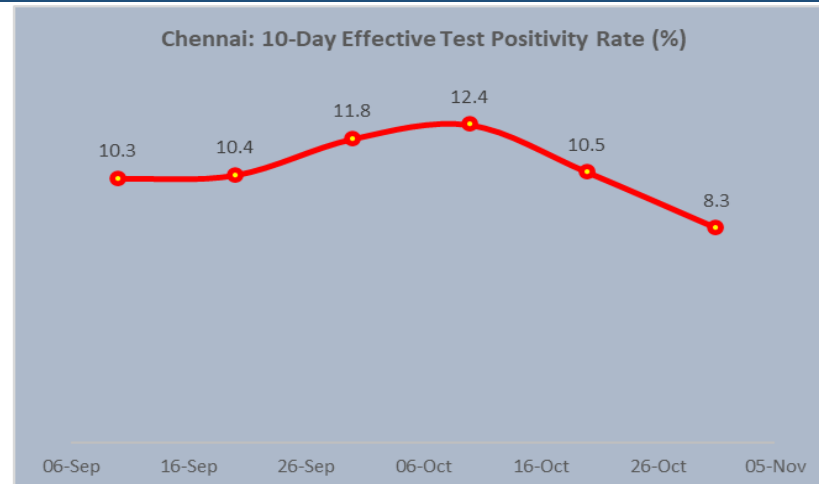
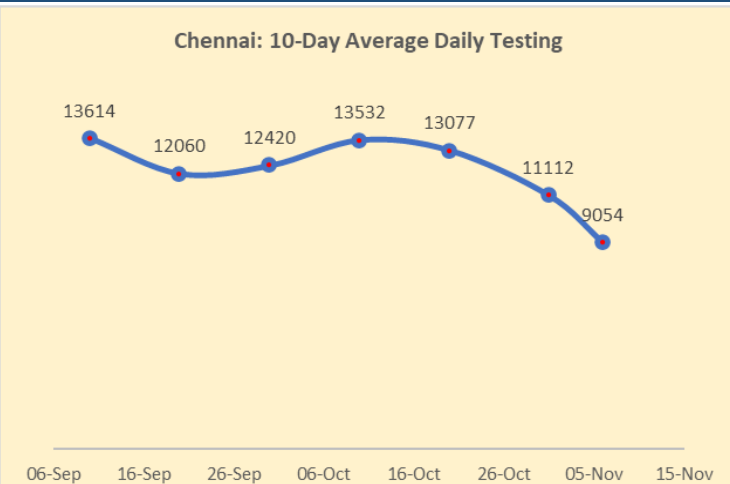
Chennai: Need to come out of AUTO MODE and push for Month-on-Month Improvement

- **Active Cases & RT-PCR:** Amongst the mega cities, Chennai is the only city which uses 100% RT-PCR kits for testing. This has helped to identify the very mildly infected people at the earliest and ensure they are recovered fast. Therefore, the number of active cases in Chennai is below 6K, 7% of the total active cases of mega cities
- **High Effective Test Positivity Rate (ETPR)*:** After Mumbai, Chennai has highest ETPR of 14.2%. There is a urgent need to strengthen the containment to stop the spread of virus

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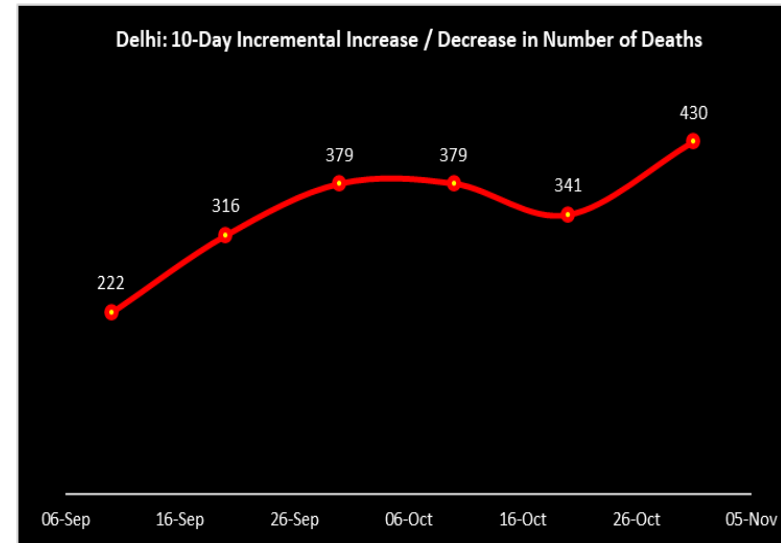


Delhi: Slow and Low Testing is leading to increase in number of deaths

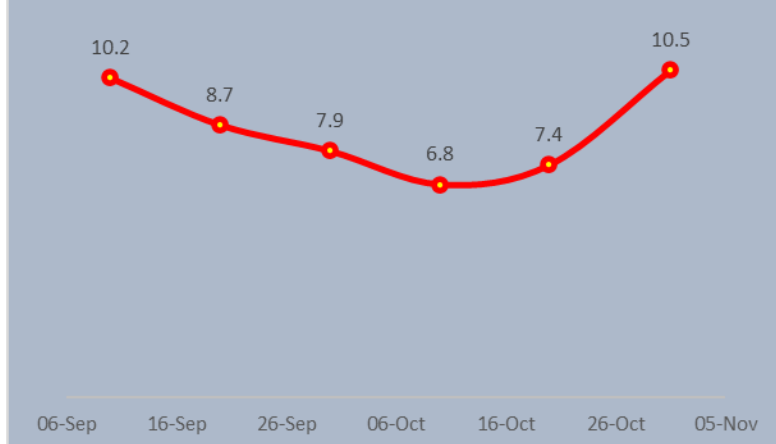
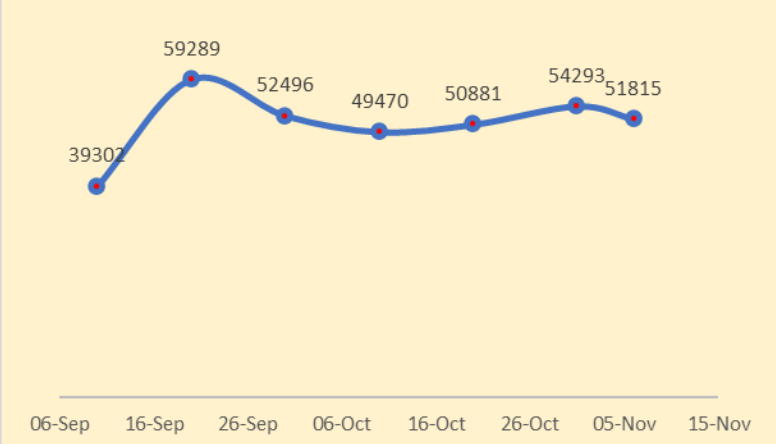


- **Surge in Active cases:** Delhi has 44% of the total active cases in Mega cities. The current situation could be partially attributed towards high leverage of Rapid Antigen Test (RAT).
- **Surge in Mortality:** Death Per Million has increased from 292 to 369, second highest after Mumbai (511). Delhi need to revisit its home isolation strategy especially for COVID patient with comorbidities.
- **Poor Containment Management:** In September, 1.5% of the total population had tested positive for COVID. This has increased to 2.3%. However, there is only nominal increase in increment testing in October.

* ETPR: 20% of the COVID tests conducted are re-tests. Therefore, 20% is reduced from the total tests and TPR is calculated.



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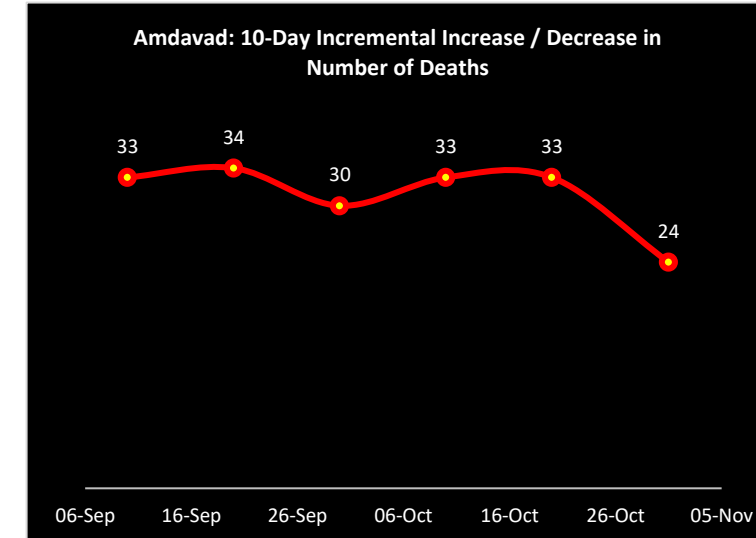
Amdavad: Need to strive to become first Mega City to achieve ZERO active cases



The pattern of Amdavad is strange, completely out of sync with other mega cities

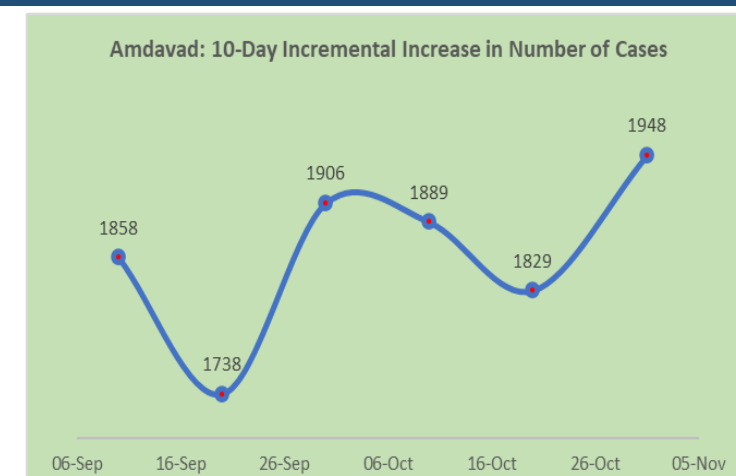
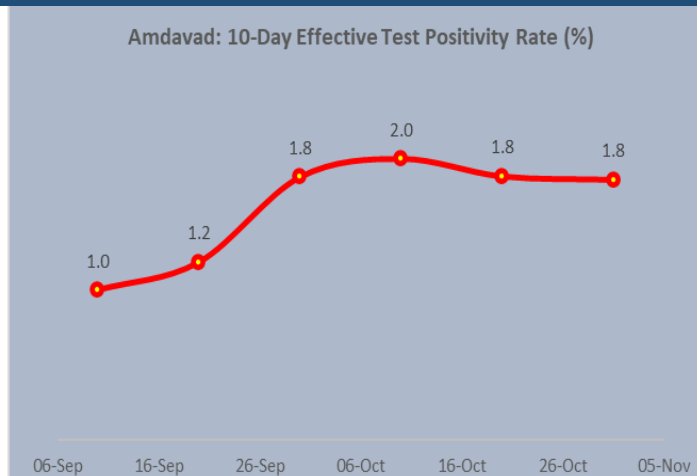
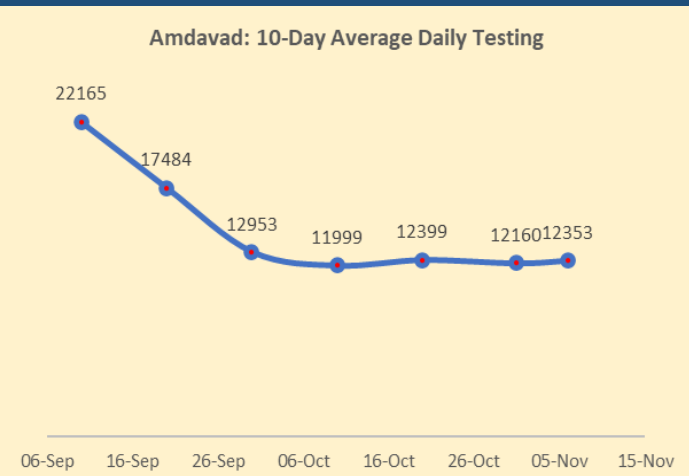
- Since July, Amdavad continues to have around 3500 active cases
- Month-on-month Number of death is constantly increasing in 80 – 120 range

The administration should strive to achieve ZERO active cases



In Pandemic, Higher testing will lead to more number of positive cases, vice-versa.

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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.

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