

# COVID 19: Wave 2: Trend Analysis & Projection

**15 May 2021**

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

**Mission:** Actively contribute towards Right to Health as a constitutional right of Indian citizens.

**Project: Jeevan Raksha** has been in the forefront of providing sharper analytical insights on emerging patterns 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.

# Contents

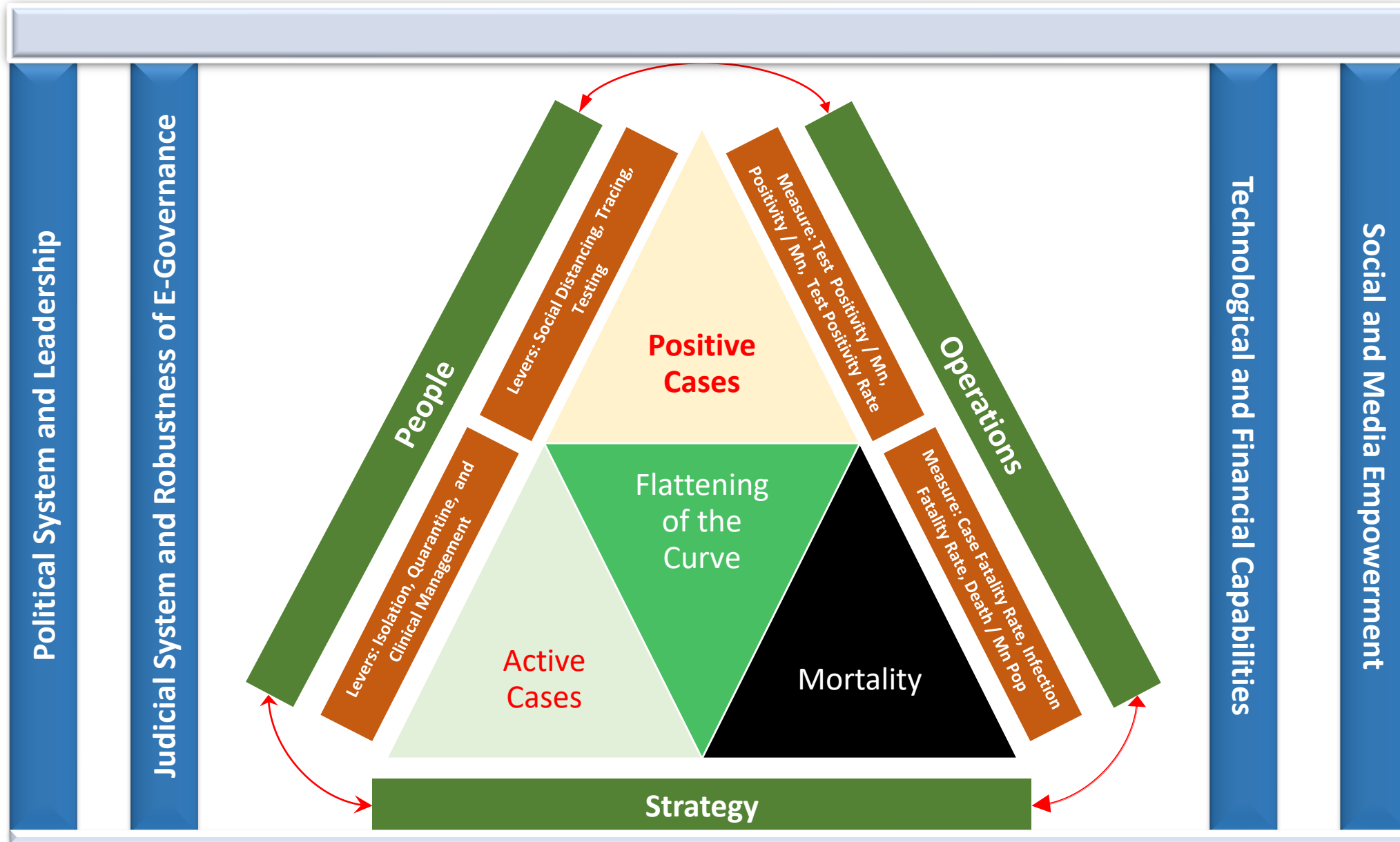
- Proxima Pandemic & Epidemic Management System (PPMS)
- Impact of Qualitative and Quantitative Testing
- Key Factor for occurrence of 2nd Wave
- COVID Management: Performance Review: States & UTs: 11 April – 10 May: Positivity and Mortality Growth
- COVID 19: Wave 2: Projections: 10 May – 10 June

## ANNEXURE: 1:

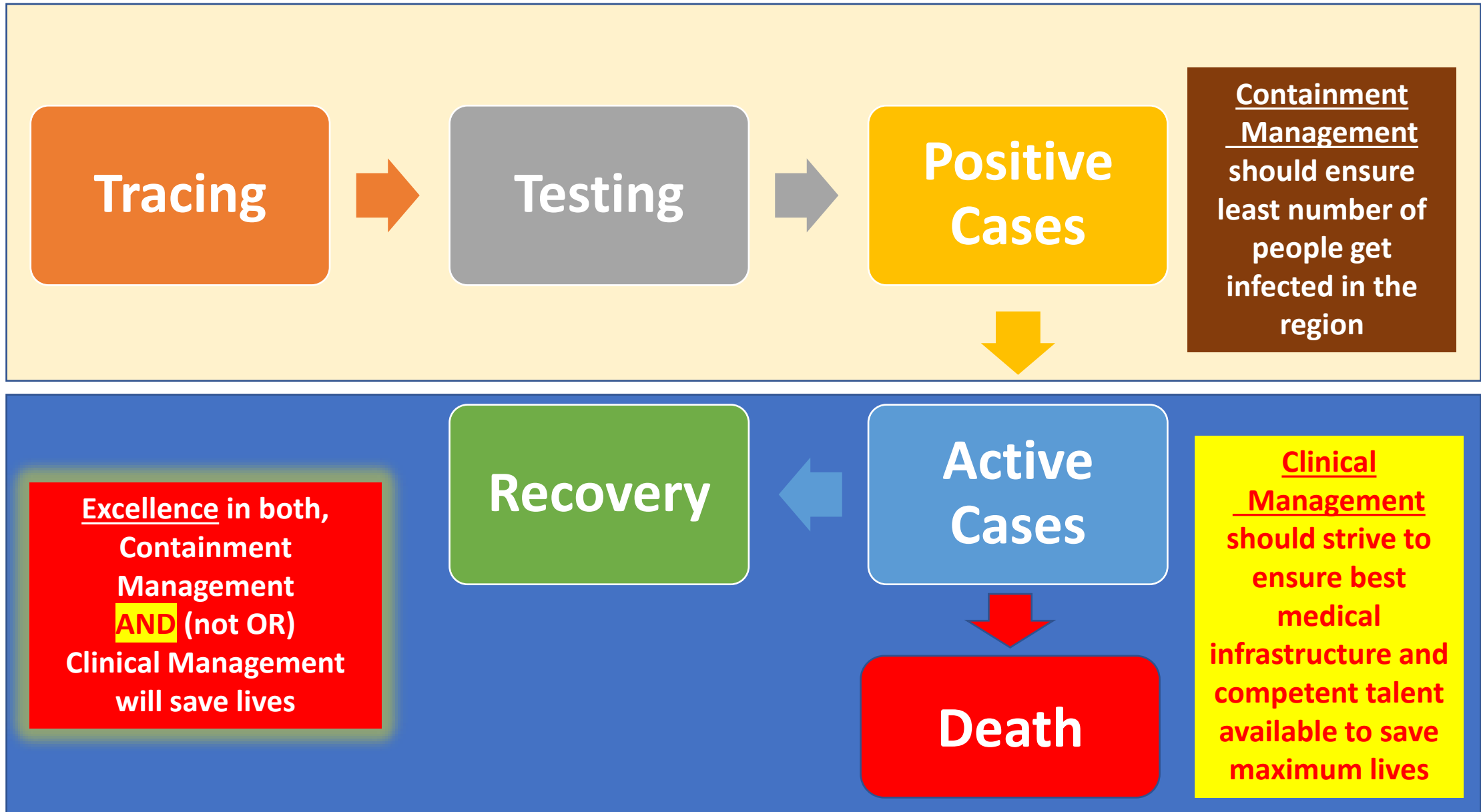
- Testimony
- COVID 19: WAVE 1: Projection and Actuals: Snapshot (August 2020 – January 2021)

# Proxima Pandemic & Epidemic Management System (PPMS)

**JEEVAN RAKSHA**  
PROTECTING LIVES



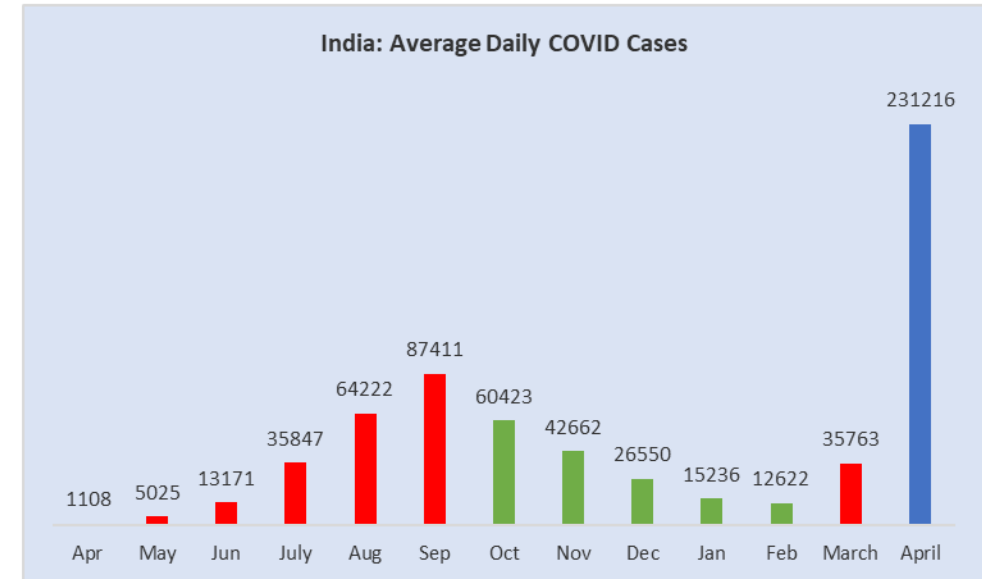
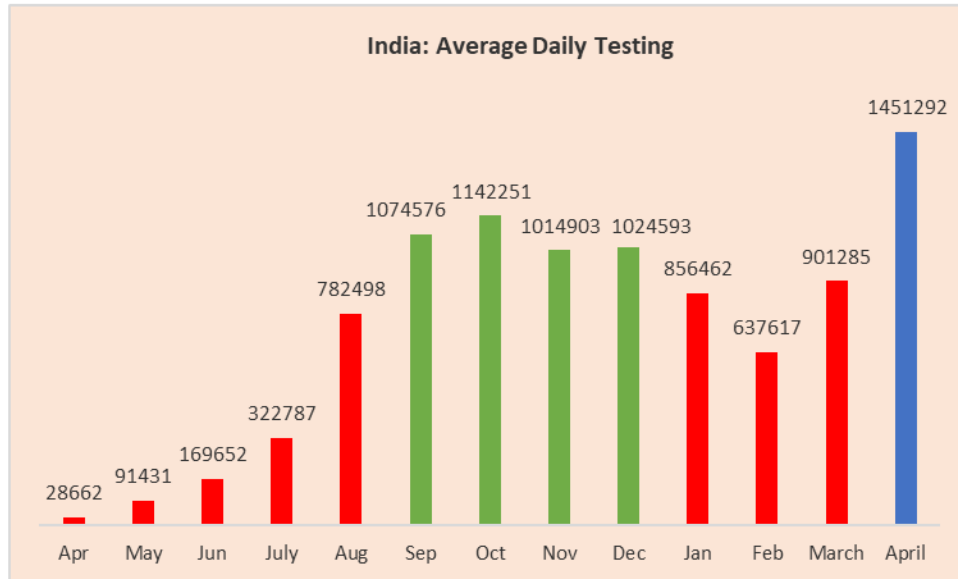
# Qualitative and Quantitative Testing will determine the fate of the people



## Causes for 2<sup>nd</sup> Wave

- **Inadequate and Slow Testing in 2021, coincided with Assembly Elections**
- **COVID Inappropriate Governance: Ignored Technical Advisors warnings**

## In 2021, India let down its guard: Average Tests / Day drops by 40% in Feb compared to Oct-Dec Period



- **Positivity and Testing Relationship:** In Pandemic, positivity is directly related to testing. When the testing is inadequate, positive cases will increase in higher proportion to the testing. India witnessed this scenario during Apr – Sept 2020.
- **Reaching Threshold testing point and Checkmating the virus:** During Sep – December, India's average tests / day was above 1 Mn. During this period, the average number of COVID cases/ day declined from 87,000 to 26,000. This validates that when the speed of testing is faster than the spread of virus in the given period, in the subsequent period we would witness sharp decline in active cases.
- **Cost of abrupt informal dismantling containment management:** In Jan and February, tests / Day dropped below 1 Mn. In January it dropped to 8.56 Lakhs, February 6.37 lakhs. Further, socio-economic activities was almost near to the Pre-Covid period. Due to sharp decline in average tests / day, informal dismantling of containment management especially tracing of 2<sup>nd</sup> and 3<sup>rd</sup> level, gave opportunity to virus to spread faster and wider. This resulted in tripling of average daily COVID cases
- **Inadequate and Slow Testing in April:** Even though India increased the testing to 1.4 Mn Tests / Day, it was not adequate and fast enough to control the spread of virus. This resulted in the average daily cases surging to 2.3 Lakh and 3.8 in May.



# States with Weak Containment Management Process

- **Pan India:** Goa and Delhi has weakest Containment Management Process. This has resulted in having highest infected people per million population. In Goa it is 76K people / Mn Population and in Delhi it is 71414 people / Mn Population
- **Mega States:** Kerala has highest Cases / Mn Population. It has 22415 infected People / Mn population, followed by Maharashtra and Karnataka.
  - **EAG States:** Chattisgarh, Uttarakhand, Rajasthan are facing challenge to contain the spread of virus
    - **North-Eastern States:** Mizoram, Arunachal Pradesh, and Nagaland
      - **Union Territory:** Puducherry, Chandigarh, and Ladakh

## Overview of Positive Cases Growth Pattern during 11 April – 10 May

Containment Management: Zonewise Positive Cases Per Million Population				
Zone	Total Cases (Upto 10 May)	New Cases (11 April - 10 May)	New Positive Cases / Mn (11 April - 10 May)	Total Positive Cases / Mn (Upto 10 May)
Mega States	15505145	5919186	9243	24212
EAG States	5829820	2891274	4188	8445
Micro States (Including Goa)	270117	90009	5011	15037
North-East States	148467	30663	1707	8265
Goa	121650	59346	37413	76690
Delhi	1336218	611021	32656	71414
Union Territory (Excluding Delhi)	157010	62240	15984	40323

Containment Management: Poor Performing States based on Incremental New Cases added Per Million Population (11 Apr - 10 May)					
Zone	States	Total Cases (Upto 10 May)	New Cases (11 April - 10 May)	New Positive Cases / Mn (11 April - 10 May)	Total Positive Cases / Mn (Upto 10 May)
Mega States	Kerala	1967406	800215	22415	55110
Mega States	Maharashtra	5179929	1772684	14395	42064
Mega States	Karnataka	1973683	908393	13445	29213
EAG States	Chhattisgarh	863343	420046	14270	29329
EAG States	Uttarakhand	249814	141002	12533	22204
EAG States	Rajasthan	773194	409401	5052	9542
North-East States	Mizoram	7623	3011	2430	6151
North-East States	Arunachal Pradesh	20575	3693	2352	13101
North-East States	Nagaland	16283	3878	1724	7238
Union Territories	Puducherry	75024	30981	21917	53075
Union Territories	Chandigarh	51070	20327	17546	44084
Union Territories	Ladakh	15429	4649	16085	53383

# States / UTs with Highest Deaths / Mn Population (DPM)

- Pan India: Goa and Delhi has unfortunately seen maximum number of deaths per million population. Death Per Million (DPM) has crossed 4 digit mark. Goa DPM is 1090 and 1051
- Mega States: In 1 month (11 Apr – 10 May), at Maharashtra 156 people died for every 1 Mn population due to COVID. In Himachal Pradesh it is 110 and Punjab it is 106
- EAG States: In Chattisgarh, DPM on 11 April was 167, it increased to 365. 54% of the total deaths in Chattisgarh occurred in April/May period. Uttarakhand and Jharkand are the two other states which witnessed relatively higher mortality after Chattisgarh.

## Overview of Mortality Pattern during 11 April – 10 May

Containment Management: Zonewise Deaths Per Million Population				
Zone	Total Deaths (Upto 10 May)	New Deaths (11 April - 10 May)	Deaths / Mn Pop (11 April - 10 May)	Deaths / Mn (Upto 10 May)
Mega States	172342	45604	71	269
EAG States	54048	25207	37	78
Micro States (Including Goa)	3270	1209	67	182
North-East States	1541	328	20	94
Goa	1729	881	555	1090
Delhi	19663	8380	448	1051
Union Territories	1832	547	140	470

Containment Management: Poor Performance States based on Incremental New Deaths Per Million Population (11 Apr - 10 May)					
Zone	States	Total Deaths (Upto 10 May)	New Deaths (11 April - 10 May)	New Deaths / Mn (11 April - 10 May)	Deaths / Mn (Upto 10 May)
Mega States	Maharashtra	77191	19204	156	627
Mega States	Himachal Pradesh	1925	823	110	258
Mega States	Punjab	10704	3197	106	355
EAG States	Chattisgarh	10742	5843	198	365
EAG States	Uttarakhand	3896	2136	190	346
EAG States	Jharkhand	3982	2769	72	103
North-East States	Sikkim	169	33	48	245
North-East States	Manipur	489	113	37	158
North-East States	Nagaland	150	57	25	67
Union Territories	Puducherry	1018	327	231	720
Union Territories	Chandigarh	399	176	152	344
Union Territories	Ladakh	157	26	90	543

# COVID 19: Wave 2: Projections: 10 May – 10 June

The projection is an effort to help the Central and State Government to examine and initiate necessary steps by effectively mobilising the required resources and achieve the core objective of reducing mortality.

## COVID 19: Wave 2: Positive Cases Projections: India and Zones

30-Day COVID Cases Growth Projection (+/- 5%)					
Zones	11-Apr	11 May (Projection)	Actuals (10 May)	%ge Actual of Projected	June 10 (Projection)
Mega States	9585959	12094000	15505145	128	20915000
EAG States	2938546	3963500	5829820	147	8295000
Micro States	180108	198700	270117	136	388500
Union Territories	94770	115600	157010	136	231000
Delhi	725197	1000000	1336218	134	1636218
<b>Total</b>	<b>13524580</b>	<b>17371800</b>	<b>23098310</b>	<b>133</b>	<b>31465718</b>

31-Day COVID Mortality Growth Projection (+/- 5%)					
Zones	11-Apr	11-May	Actuals (10 May)	%ge Actual of Projected	June 10 (Projection)
Mega States	126738	139250	172342	124	236700
EAG States	28841	34875	54048	155	85450
Micro States	2061	2113	3270	155	5705
Union Territories	1285	1375	1832	133	2785
Delhi	11283	12600	19663	156	27063
<b>Total</b>	<b>170208</b>	<b>190213</b>	<b>251155</b>	<b>132</b>	<b>357703</b>

- India's COVID Cases is expected to increase by around 8.3 Mn and reach 31.15 Mn on 10<sup>th</sup> June
- Unfortunately, India's COVID deaths toll is expected to increase by 1 Lakh and expected to be in the range of 3.5 lakh deaths on 10<sup>th</sup> June

## COVID 19: Wave 2: Positive Cases Projections: Mega States

Mega States	Actual (11 April)	Projection (10 May)	Actual (10 May)	%ge Actual of Projected	Projection (10 June)
Andhra Pradesh	925401	1000000	1302589	130	1775000
Gujarat	347495	480000	692604	144	1000000
Haryana	316881	390000	628615	161	1000000
Himachal Pradesh	69686	84000	135782	162	250000
Jammu & Kashmir	138390	165000	224898	136	325000
Karnataka	1065290	1290000	1973683	153	3000000
Kerala	1167191	1300000	1967406	151	2600000
Maharashtra	3407245	4800000	5179929	108	6000000
Punjab	272772	360000	450674	125	700000
Tamil Nadu	933434	1100000	1409237	128	2100000
Telangana	327278	405000	506988	125	640000
West Bengal	614896	720000	1032740	143	1525000
<b>Total</b>	<b>9585959</b>	<b>12094000</b>	<b>15505145</b>	<b>128</b>	<b>20915000</b>

- During the forecasted period
  - COVID cases in Mega States is expected to increase by around 5.5 Mn. Karnataka is expected to witness relatively higher surge when compared with other Mega States.
  - Karnataka is expected to add 1 Mn new cases during the forecasted period, followed by Maharashtra (8.5 lacs), Tamil Nadu (7 Lakh), and Kerala (6.5 Lakh)

## COVID 19: Wave 2: Death Projections: Mega States

Mega States	Actual (11 April)	Projection (10 May)	Actual (10 May)	%ge Actual of Projected	Projection (10 June)
Andhra Pradesh	7300	7600	8791	116	10800
Gujarat	4800	6100	8511	140	11000
Haryana	3268	3600	5766	160	10650
Himachal Pradesh	1102	1250	1925	154	3800
Jammu & Kashmir	2034	2150	2847	132	4700
Karnataka	12889	13600	19372	142	35000
Kerala	4784	5200	5959	115	8000
Maharashtra	57987	65000	77191	119	92000
Punjab	7507	8750	10704	122	17500
Tamil Nadu	12908	13450	15880	118	22300
Telangana	1759	1900	2803	148	3700
West Bengal	10400	10650	12593	118	17250
<b>Total</b>	<b>126738</b>	<b>139250</b>	<b>172342</b>	<b>124</b>	<b>236700</b>

- Number of deaths in Mega States is likely to increase from 64300. Unfortunately, 50% of these deaths are likely to occur in **Karnataka** and **Maharashtra**. During the forecast period, both states are expected to witness over 15,000 new deaths each.
- **Tamil Nadu** and **Haryana** are the other 2 states among mega States which is expected to witness relatively higher number of deaths. In Tamil Nadu, the number of deaths is expected to increase by 7,000 and in Haryana it will be around 4800.



## COVID 19: Wave 2: Positive Cases and Deaths Projections: EAG States

EAG States	Actual (11 April)	Projection (10 May)	Actual (10 May)	%ge Actual of Projected	Projection (10 June)
Assam	220310	228500	298171	130	400000
Bihar	283229	375000	601650	160	850000
Chattisgarh	443297	685000	863343	126	1150000
Jharkhand	139384	195000	292530	150	440000
Madhya Pradesh	338145	485000	681478	141	930000
Odisha	349561	375000	544873	145	825000
Rajasthan	363793	480000	773194	161	1300000
Uttar Pradesh	692015	1000000	1524767	152	2000000
Uttarakhand	108812	140000	249814	178	400000
<b>Total</b>	<b>2938546</b>	<b>3963500</b>	<b>5829820</b>	<b>147</b>	<b>8295000</b>

EAG States	Actual (11 April)	Projection (10 May)	Actual (10 May)	%ge Actual of Projected	Projection (10 June)
Assam	1118	1150	1753	152	4000
Bihar	1610	1700	3357	197	5100
Chattisgarh	4899	8050	10742	133	15000
Jharkhand	1213	1675	3982	238	7300
Madhya Pradesh	4184	4750	6501	137	8850
Odisha	1979	2000	2250	113	2750
Rajasthan	2926	3150	5825	185	9800
Uttar Pradesh	9152	10550	15742	149	23000
Uttarakhand	1760	1850	3896	211	9650
<b>Total</b>	<b>28841</b>	<b>34875</b>	<b>54048</b>	<b>155</b>	<b>85450</b>

- New COVID Cases: Rajasthan and Uttar Pradesh is expected to add additional 5 Lakh COVID cases each during the forecasted period
- Odisha even though it is expected to add additional 2.8 Lakh cases of COVID cases, it is expected to have relatively lesser mortality.

## COVID 19: Wave 2: Positive Cases and Deaths Projections: Micro States

Micro States	Actual (11 April)	Projection (10 May)	Actual (10 May)	%ge Actual of Projected	Projection (10 June)
Arunachal Pradesh	16882	17000	20575	121	25000
Goa	62304	77000	121650	158	190000
Manipur	29496	29700	35778	120	50000
Meghalaya	14274	15000	20129	134	35000
Mizoram	4612	5200	7623	147	10500
Nagaland	12405	12500	16283	130	21000
Sikkim	6405	7400	9924	134	13000
Tripura	33730	34900	38155	109	44000
<b>Total</b>	<b>180108</b>	<b>198700</b>	<b>270117</b>	<b>136</b>	<b>388500</b>

Micro States	Actual (11 April)	Projection (10 May)	Actual (10 May)	%ge Actual of Projected	Projection (10 June)
Goa	848	900	1729	192	3125
Tripura	390	390	410	105	440
Manipur	376	376	489	130	930
Nagaland	93	93	150	161	350
Arunachal Pradesh	56	56	68	121	90
Meghalaya	151	151	233	154	480
Sikkim	136	136	169	124	250
Mizoram	11	11	22	200	40
<b>Total</b>	<b>2061</b>	<b>2113</b>	<b>3270</b>	<b>155</b>	<b>5705</b>

- Among Micro States, Goa is expected to additional 70K new COVID cases and in Meghalaya incremental positive cases will increase by 14K.
- Number of Deaths in NE States will increase by 1K. In Manipur number of death is likely to increase by around 440, Nagaland by 200
- In Meghalaya, number of deaths is likely to increase from 233 to 480

## COVID 19: Wave 2: Positive Cases and Deaths Projections: Union Territories

Union Territories	Actual (11 April)	Projection (10 May)	Actual (10 May)	%ge Actual of Projected	Projection (10 June)
Andaman & Nichobar	5190	5600	6398	114	7000
Chandigarh	30743	40000	51070	128	80000
Dadra & Nagar Haveli	4014	6000	9089	151	11000
Ladakh	10780	12000	15429	129	18000
Puducherry	44043	52000	75024	144	115000
<b>Total</b>	<b>94770</b>	<b>115600</b>	<b>157010</b>	<b>136</b>	<b>231000</b>

Union Territories	Actual (11 April)	Projection (10 May)	Actual (10 May)	%ge Actual of Projected	Projection (10 June)
Puducherry	691	720	1018	141	1700
Ladakh	131	131	157	120	180
Dadra & Nagar Haveli	2	2	4	200	5
Chandigarh	399	460	575	125	800
Andaman & Nichobar	62	62	78	126	100
<b>Total</b>	<b>1285</b>	<b>1375</b>	<b>1832</b>	<b>133</b>	<b>2785</b>

- Both, Puducherry and Chandigarh is expected to witness surge of COVID cases by over 50%
- Unfortunately, Puducherry and Chandigarh is likely to witness surge in mortality by 70% and 40%

**ANNEXURE: 1**  
**COVID 19: WAVE 1: Projection and Actuals: Snapshot (August 2020 – January 2021)**

Thank you for sending your forecast. I am impressed that you have accurately forecast the growth in the last month. We will prepare for the scenario you have outlined for the next month.

Regards,

**T M Vijay Bhaskar IAS**

Chief Secretary

Government of Karnataka

19<sup>th</sup> August 2019

# COVID 19: Wave 1: Zonewise Projections and Actuals: Positivity and Mortality



30-Day COVID Cases Growth Projection																
Consolidated	16-Aug	12-Sep		%ge Actual of Projected	12-Oct		%ge Actual of Projected	12-Nov		%ge Actual of Projected	12-Dec		%ge Actual of Projected	12-Jan		%ge Actual of Projected
	Actuals	Projection	Actual		Projections	Actuals		Projections	Actuals		Projections	Actuals		Projections	Actuals	
Mega States	1852408	3245361	3279953	101	5229600	5002180	96	6503100	6025325	93	6800000	6712696	99	7235000	7155680	99
EAG States	538721	1146000	1065505	93	1765000	1681197	95	2115400	2027541	96	2315000	2306290	100	2523000	2465664	98
Micro States	32020	61400	66477	108	124700	113834	91	144100	142017	99	164100	159616	97	172600	166739	97
Union Territories	15424	34200	35722	104	59200	57342	97	72400	66713	92	76900	73308	95	78400	76841	98
Delhi	151928	185000	209748	113	330000	311188	94	400000	467028	117	675000	605470	90	660000	630892	96
<b>Total</b>	<b>2590501</b>	<b>4671961</b>	<b>4657405</b>	<b>100</b>	<b>7508500</b>	<b>7165741</b>	<b>95</b>	<b>9235000</b>	<b>8728624</b>	<b>95</b>	<b>10031000</b>	<b>9857380</b>	<b>98</b>	<b>10669000</b>	<b>10495816</b>	<b>98</b>

30-Day COVID Mortality Projection																
Consolidated	16-Aug	12-Sep		%ge Actual of Projected	12-Oct		%ge Actual of Projected	12-Nov		%ge og Actual of Projected	12-Dec		%ge og Actual of Projected	12-Jan		%ge og Actual of Projected
	Actuals	Projection	Actual		Projections	Actuals		Projections	Actual		Projections	Actual		Projections	Actual	
Mega States	39610	68268	61242	90	91525	85942	94	103605	98276	95	107500	106620	99	114500	112191	98
EAG States	5946	11325	10503	93	16950	16468	97	21480	20597	96	23500	23617	100	25785	25587	99
Micro States	185	345	555	161	1067	1076	101	1665	1501	90	1822	1772	97	2040	1920	94
Union Territories	170	389	539	139	1008	878	87	1110	1003	90	1128	1105	98	1275	1159	91
Delhi	4188	4700	4687	100	5500	5809	106	7000	7332	105	10300	9981	97	11500	10707	93
<b>Total</b>	<b>50099</b>	<b>85027</b>	<b>77526</b>	<b>91</b>	<b>116050</b>	<b>110173</b>	<b>95</b>	<b>134860</b>	<b>128709</b>	<b>95</b>	<b>144250</b>	<b>143095</b>	<b>99</b>	<b>155100</b>	<b>151564</b>	<b>98</b>

# COVID 19: Wave 1: Mega States: Projections and Actuals: Positivity



Mega States	16-Aug	12-Sep		%ge Actual of Projected	12-Oct		%ge og Actual of Projected	12-Nov		%ge og Actual of Projected	12-Dec		%ge og Actual of Projected	12-Jan		%ge og Actual of Projected
	Actuals	Projectio n	Actual		Projectio n	Actual		Projectio ns	Actual		Projectio ns	Actual		Projectio ns	Actual	
Andhra Pradesh	281817	580000	547686	94	875000	758951	87	900000	849705	94	900000	875025	97	890000	885234	<b>99</b>
Gujarat	77663	100000	110971	111	150000	152764	102	190000	184964	97	220000	226508	103	255000	253161	<b>99</b>
Haryana	46410	60000	88332	147	160000	143221	90	170000	193111	114	280000	251402	90	280000	265391	<b>95</b>
Himachal Pradesh	3993	7000	8784	125	17000	17578	103	25000	28183	113	50000	48951	98	70000	56596	<b>81</b>
Jammu & Kashmir	28021	50000	50712	101	100000	84031	84	100000	100968	101	120000	115626	96	125000	122764	<b>98</b>
Karnataka	219926	450000	440411	98	700000	717915	103	1000000	855912	86	925000	900214	97	930000	928806	<b>100</b>
Kerala	42885	90000	102255	114	200000	295133	148	660000	508257	77	660000	664633	101	785000	819766	<b>104</b>
Maharashtra	584754	1000000	1015681	102	1750000	1535315	88	1875000	1736329	93	1850000	1876699	101	1975000	1974488	<b>100</b>
Punjab	30041	62000	74616	120	150000	124535	83	150000	139869	93	160000	159579	100	175000	169479	<b>97</b>
Tamil Nadu	332105	520000	491571	95	675000	661264	98	820000	752521	92	810000	797693	98	825000	827614	<b>100</b>
Telangana	91361	91361	152602	NA	152600	213084	NA	213100	254666	120	290000	277151	96	295000	290309	<b>98</b>
West Bengal	113432	235000	196332	84	300000	298389	99	400000	420840	105	535000	519215	97	630000	562072	<b>89</b>
<b>Total</b>	<b>1852408</b>	<b>3245361</b>	<b>3279953</b>	<b>101</b>	<b>5229600</b>	<b>5002180</b>	<b>96</b>	<b>6503100</b>	<b>6025325</b>	<b>93</b>	<b>6800000</b>	<b>6712696</b>	<b>99</b>	<b>7235000</b>	<b>7155680</b>	<b>99</b>

# COVID 19: Wave 1: Mega States: Projections and Actuals: Mortality



Mega States	16-Aug	12-Sep		%ge Actual of Projected	12-Oct		%ge og Actual of Projected	12-Nov		%ge og Actual of Projected	12-Dec		%ge og Actual of Projected	12-Jan		%ge og Actual of Projected
	Actuals	Projectio n	Actual		Projectio n	Actuals		Projectio ns	Actual		Projectio ns	Actual		Projectio ns	Actual	
Andhra Pradesh	2562	6250	4779	76	7000	6256	89	7000	6837	98	7150	7052	99	7125	7133	<b>100</b>
Gujarat	2765	3000	3181	106	3600	3577	99	3900	3785	97	3950	4160	105	5500	4350	<b>79</b>
Haryana	528	700	932	133	1800	1592	88	2000	1979	99	2450	2710	111	3200	2964	<b>93</b>
Himachal Pradesh	18	25	70	280	175	246	141	375	405	108	650	793	122	1190	949	<b>80</b>
Jammu & Kashmir	527	1500	854	57	1300	1333	103	1700	1566	92	1800	1793	100	2060	1912	<b>93</b>
Karnataka	3832	6700	7067	105	11200	10314	92	12800	11474	90	12000	11939	99	12200	12149	<b>100</b>
Kerala	147	400	411	103	800	1026	128	2000	1797	90	2600	2595	100	3350	3348	<b>100</b>
Maharashtra	19749	31000	28724	93	44000	40514	92	48000	45682	95	49000	48139	98	50000	50151	<b>100</b>
Punjab	771	4000	2212	55	4800	3860	80	4800	4412	92	5200	5057	97	5800	5456	<b>94</b>
Tamil Nadu	5641	9000	8234	91	10500	10314	98	12200	11440	94	12150	11883	98	12200	12236	<b>100</b>
Telangana	693	693	950	137	950	1228	129	1230	1393	113	1550	1489	96	1525	1568	<b>103</b>
West Bengal	2377	5000	3828	77	5400	5682	105	7600	7506	99	9000	9010	100	10350	9975	<b>96</b>
<b>Total</b>	<b>39610</b>	<b>68268</b>	<b>61242</b>	<b>90</b>	<b>91525</b>	<b>85942</b>	<b>94</b>	<b>103605</b>	<b>98276</b>	<b>95</b>	<b>107500</b>	<b>106620</b>	<b>99</b>	<b>114500</b>	<b>112191</b>	<b>98</b>



# COVID 19: Wave 1: EAG States: Projections and Actuals: Positivity & Mortality



EAG States	16-Aug	12-Sep		%ge Actual of Projected	12-Oct		%ge og Actual of Projected	12-Nov		%ge og Actual of Projected	12-Dec		%ge og Actual of Projected	12-Jan		%ge og Actual of Projected
	Actuals	Projectio n	Actual		Projectio n	Actuals		Projectio ns	Actual		Projectio ns	Actual		Projectio ns	Actual	
Assam	75559	165000	138339	84	215000	195304	NA	195400	209835	107	215000	214584	100	220000	216690	<b>98</b>
Bihar	101906	225000	155445	69	200000	197000	99	230000	225500	98	245000	242748	99	260000	257335	<b>99</b>
Chattisgarh	15045	25000	58643	235	145000	145247	100	225000	207740	92	265000	255761	97	300000	290813	<b>97</b>
Jharkhand	22672	50000	59040	118	110000	93035	85	115000	105493	92	112000	111366	99	115000	117088	<b>102</b>
Madhya Pradesh	44433	75000	83619	111	145000	148298	102	200000	180997	90	210000	222397	106	250000	249553	<b>100</b>
Odisha	57126	120000	143117	119	250000	254662	102	335000	305986	91	335000	323364	97	333000	332331	<b>100</b>
Rajasthan	59979	100000	99036	99	150000	161184	107	225000	219327	97	285000	289999	102	325000	313718	<b>97</b>
Uttar Pradesh	150061	365000	299045	82	500000	439161	88	520000	505424	97	565000	564132	100	610000	594175	<b>97</b>
Uttarakhand	11940	21000	29221	139	50000	47306	95	70000	67239	96	83000	81939	99	110000	93961	<b>85</b>
<b>Total</b>	<b>538721</b>	<b>1146000</b>	<b>1065505</b>	<b>93</b>	<b>1765000</b>	<b>1681197</b>	<b>95</b>	<b>2115400</b>	<b>2027541</b>	<b>96</b>	<b>2315000</b>	<b>2306290</b>	<b>100</b>	<b>2523000</b>	<b>2465664</b>	<b>98</b>

EAG States	16-Aug	12-Sep		%ge Actual of Projected	12-Oct		%ge og Actual of Projected	12-Nov		%ge og Actual of Projected	12-Dec		%ge og Actual of Projected	12-Jan		%ge og Actual of Projected
	Actuals	Projecti on	Actual		Projecti on	Actuals		Projecti ons	Actual		Projecti ons	Actual		Projecti ons	Actual	
Assam	182	400	430	108	900	826	NA	830	958	115	1050	1000	95	1030	1064	<b>103</b>
Bihar	515	1100	797	72	1100	955	87	1100	1167	106	1350	1317	98	1440	1443	<b>100</b>
Chattisgarh	134	525	518	99	1600	1286	80	2350	2527	108	3100	3084	99	3500	3517	<b>100</b>
Jharkhand	229	500	532	106	900	798	89	1000	917	92	1000	995	100	1030	1048	<b>102</b>
Madhya Pradesh	1094	1500	1691	113	2500	2645	106	3600	3065	85	3350	3391	101	3630	3726	<b>103</b>
Odisha	386	800	658	82	1000	1093	109	1500	1536	102	2000	1855	93	1975	1947	<b>99</b>
Rajasthan	862	1200	1207	101	1650	1665	101	2150	2032	95	2400	2568	107	2930	2739	<b>93</b>
Uttar Pradesh	2393	5000	4282	86	6600	6438	98	7700	7302	95	8000	8056	101	8650	8514	<b>98</b>
Uttarakhand	151	300	388	129	700	762	109	1250	1093	87	1250	1351	108	1600	1589	<b>99</b>
<b>Total</b>	<b>5946</b>	<b>11325</b>	<b>10503</b>	<b>93</b>	<b>16950</b>	<b>16468</b>	<b>97</b>	<b>21480</b>	<b>20597</b>	<b>96</b>	<b>23500</b>	<b>23617</b>	<b>100</b>	<b>25785</b>	<b>25587</b>	<b>99</b>

# COVID 19: Wave 1: Micro States: Projections and Actuals: Positivity & Mortality

Micro States	16-Aug Actuals	12-Sep		%ge Actual of Projected	12-Oct		%ge og Actual of Projected	12-Nov		%ge og Actual of Projected	12-Dec		%ge og Actual of Projected	12-Dec		%ge og Actual of Projected
		Projectio n	Actual		Projectio n	Actual		Projectio ns	Actual		Projectio ns	Actual		Projectio ns	Actual	
Arunachal Pradesh	2658	4500	5825	129	11000	12367	112	19000	15701	83	17700	16504	93	16900	16782	99
Goa	11339	23500	23445	100	45000	38674	86	51000	45605	89	50000	49305	99	51500	51983	101
Manipur	4390	7500	7579	101	11000	13556	123	20000	21211	106	29000	27036	93	31500	28725	91
Meghalaya	1292	2250	3447	153	6000	7771	130	12400	10512	85	13300	12743	96	15000	13651	91
Mizoram	777	1600	1379	86	3700	2184	59	2600	3242	125	4300	4024	94	4200	4299	102
Nagaland	3340	7000	4946	71	10000	7240	72	9500	9615	101	10300	11676	113	14000	11997	86
Sikkim	1148	2000	2026	101	3000	3367	112	4600	4369	95	5500	5316	97	6000	5996	100
Tripura	7076	12200	17830	146	35000	28675	82	25000	31762	127	34000	33012	97	33500	33306	99
<b>Total</b>	<b>32020</b>	<b>60550</b>	<b>66477</b>	<b>110</b>	<b>124700</b>	<b>113834</b>	<b>91</b>	<b>144100</b>	<b>142017</b>	<b>99</b>	<b>164100</b>	<b>159616</b>	<b>97</b>	<b>172600</b>	166739	<b>97</b>

Micro States	16-Aug Actuals	12-Sep		%ge Actual of Projected	12-Oct		%ge og Actual of Projected	12-Nov		%ge og Actual of Projected	12-Dec		%ge og Actual of Projected	12-Jan		%ge og Actual of Projected
		Projectio n	Actual		Projectio n	Actual		Projectio ns	Actual		Projectio ns	Actual		Projectio ns	Actual	
Goa	98	240	276	115	525	511	97	750	656	87	800	705	88	730	749	<b>103</b>
Tripura	55	60	182	303	375	314	84	400	356	89	400	372	93	400	385	<b>96</b>
Manipur	13	20	44	220	100	93	93	150	207	138	300	322	107	415	365	<b>88</b>
Nagaland	7	9	8	89	10	13	130	40	50	125	60	68	113	100	84	<b>84</b>
Arunachal Pradesh	5	7	10	143	12	24	200	85	47	55	60	55	92	80	56	<b>70</b>
Meghalaya	6	7	24	343	30	64	213	90	98	109	100	125	125	155	143	<b>92</b>
Sikkim	1	1	11	1100	15	57	380	150	85	57	100	118	118	150	129	<b>86</b>
Mizoram	0	1	0	0	0	0	0	0	2	#DIV/0!	2	7	350	10	9	<b>90</b>
<b>Total</b>	<b>185</b>	<b>345</b>	<b>555</b>	<b>161</b>	<b>1067</b>	<b>1076</b>	<b>101</b>	1665	1501	<b>90</b>	1822	1772	<b>97</b>	2040	1920	<b>94</b>

# COVID 19: Wave 1: Union Territories: Projections and Actuals: Positivity & Mortality



Union Territories	16-Aug	12-Sep		%ge Actual of Projected	12-Oct		%ge og Actual of Projected	12-Nov		%ge og Actual of Projected	12-Dec		%ge og Actual of Projected	12-Jan		%ge og Actual of Projected
	Actuals	Projectio n	Actual		Projectio n	Actual		Projectio ns	Actual		Projectio ns	Actual		Projectio ns	Actual	
Andaman & Nichobar	2306	6500	3494	54	4500	4023	89	4400	4507	102	5000	4805	96	5000	4966	99
Chandigarh	2009	3500	7292	208	17000	13264	78	15500	15543	100	18500	18572	100	20000	20378	102
Dadra & Nagar Haveli	1846	3200	2682	84	3500	3167	90	3500	3273	94	4400	3349	76	5400	3368	62
Ladakh	1909	3000	3228	108	4200	5151	123	7000	7211	103	10000	9138	91	10000	9634	96
Puducherry	7354	18000	19026	106	30000	31737	106	42000	36179	86	39000	37444	96	38000	38495	101
<b>Total</b>	<b>15424</b>	<b>34200</b>	<b>35722</b>	<b>104</b>	<b>59200</b>	<b>57342</b>	<b>97</b>	<b>72400</b>	<b>66713</b>	<b>92</b>	<b>76900</b>	<b>73308</b>	<b>95</b>	<b>78400</b>	<b>76841</b>	<b>98</b>

Union Territories	16-Aug	12-Sep		%ge Actual of Projected	12-Oct		%ge Actual of Projected	12-Nov		%ge Actual of Projected	12-Dec		%ge Actual of Projected	12-Jan		%ge Actual of Projected
	Actuals	Projectio n	Actual		Projectio n	Actual		Projectio ns	Actual		Projectio ns	Actual		Projectio ns	Actual	
Puducherry	106	270	365	135	750	565	75	650	607	93	650	619	95	650	639	<b>98</b>
Ladakh	10	15	38	253	45	64	142	90	89	99	100	123	123	150	128	<b>85</b>
Dadra & Nagar Haveli	2	4	2	50	3	2	67	30	2	7	3	2	67	25	2	<b>8</b>
Chandigarh	28	50	83	166	150	192	128	250	244	98	300	300	100	360	328	<b>91</b>
Andaman & Nichobar	24	50	51	102	60	55	92	90	61	68	75	61	81	90	62	<b>69</b>
<b>Total</b>	<b>170</b>	<b>389</b>	<b>539</b>	<b>139</b>	<b>1008</b>	<b>878</b>	<b>87</b>	<b>1110</b>	<b>1003</b>	<b>90</b>	<b>1128</b>	<b>1105</b>	<b>98</b>	<b>1275</b>	<b>1159</b>	<b>91</b>

## 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](http://www.google.com); [www.wikipedia.org](http://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**