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CHASING THE VIRUS

A COVID-19 Trend Review Report by

INDIA PROTECTORS ALLIANCE

A SAMHITA INITIATIVE

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About the India Protectors Alliance (IPA)

An initiative of Samhita, Bill & Melinda Gates Foundation and RBL Bank, the India Protectors Alliance is a collaborative of companies, philanthropic foundations, governments and experts, to help the country tide through the COVID-19 crisis. Our mission is to create resilient healthcare and sanitation ecosystems with a three-pronged approach – Prevent, Prepare and Provide.

For any queries or information on the Chasing the Virus report, kindly email:

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Executive Summary

As the big cities in India begin to experience reduction in COVID-19 active cases, there is a sense of relief among many and the feeling that as a country we need to look beyond the virus. However, the facts belie this feeling. The facts are as follows:

- India has the highest daily new case counts among all countries in the world
- The first 1.6 million cases in India took about 6 months, the next 1.6 million cases have occurred in less than 1 month
- The virus has moved to smaller districts, towns and rural areas. Between July 1, 2020 and August 17, 2020, 95% of new active cases and 63% of fatalities due to COVID-19 occurred in districts outside the Big 11 cities.
- The worst-hit states represent 60% of India's GDP. Without the pandemic being controlled, economic recovery will remain elusive.

We believe, India will have over 100,000 fatalities from COVID-19 by end of September 2020.

We believe the government alone cannot be responsible for this battle and philanthropies, corporate CSR and other donors (and the rest of the country) need to step in, to strengthen the healthcare system in the smaller districts.

We have identified 82 Priority 1 districts and 144 Priority 2 districts (out of total 739 districts in India) that need most attention (and account for 95% of active cases growth and 66% of fatalities in the period between July 1 to August 17, 2020).

We recommend a three-pronged approach to donors to help in the battle against COVID-19: Prevent, Prepare and Provide.

Methodology

To compile this report, we have used publicly available data on COVID-19 (www.covid19india.org), Census 2011 data (further adjusted for new districts that have been formed after the census was conducted) and state level GDP data.

We have used the Review Period of July 1, 2020 till August 17, 2020 to show recent trends (approximately 45 days).

Prioritization of districts have been done as follows:

- **Priority 1 districts:** Meet all of the following criteria:
  - **Fatalities:** Above average of India during the Review Period (India average fatalities in Review Period per district is 48)
  - **Active cases growth:** At least 500 during the Review Period
  - **Active cases total count:** More than 500 active cases as on August 17, 2020
  - **Average Fatalities Per Lakh of Population:** More than India average during the Review Period (India average fatalities per lakh of population in Review Period is 2.8)

- **Priority 2 districts:** Meet at least two of the above criteria.

India Picture

As on August 24, 2020, India has over 3 million total cases, with a 76% recovery rate, 1.8% mortality rate and over 7 Lakh active cases.

India has the highest daily new case among all countries in the world (it has held that position for most part of August). The first 1.6 million cases in India took about 6 months, the next 1.6 million cases have occurred in less than 1 month.

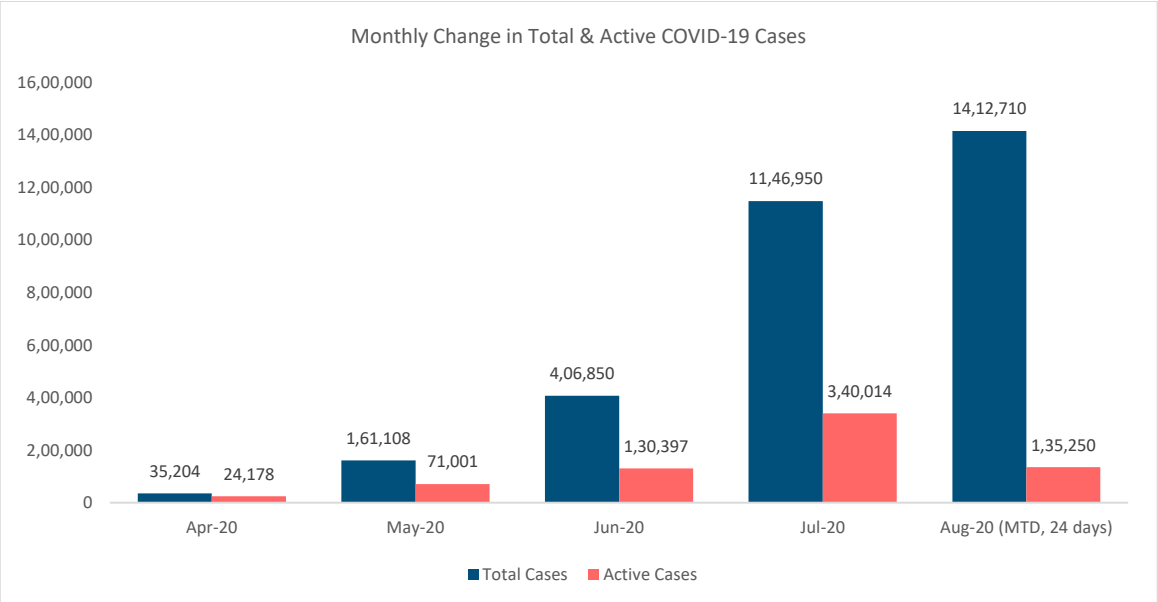


Fig. 1: Monthly change in COVID-19 cases in India since April 2020

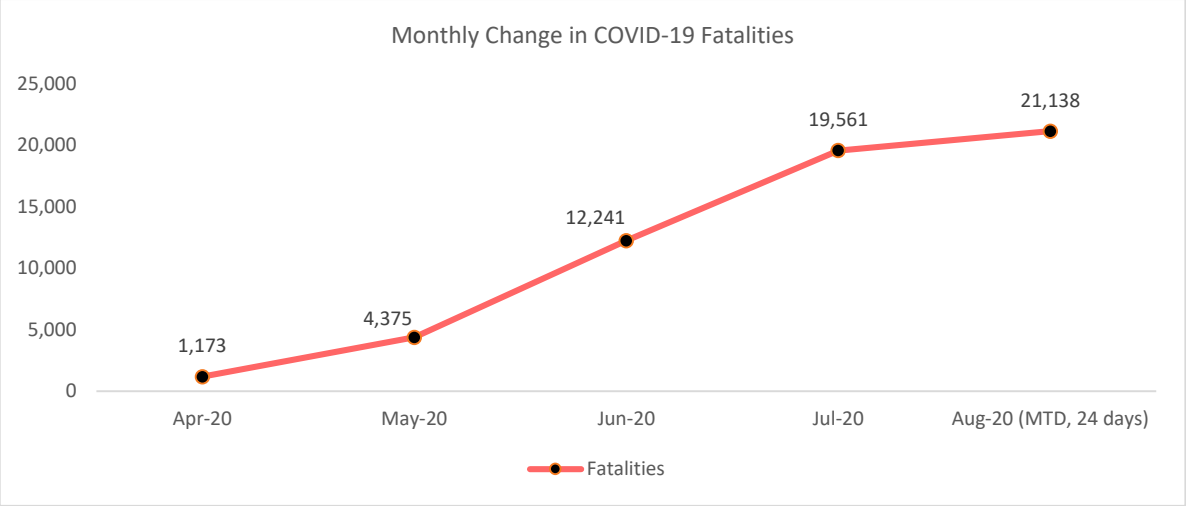


Fig. 2: Monthly change in COVID-19 fatalities in India since April 2020

With a drop in mortality rate, India's fatalities per Lakh of population has dropped from nearly 4 (from the beginning of the virus till August 17, 2020) to 2.8 in the Review Period (July 1, 2020 to August 17, 2020).

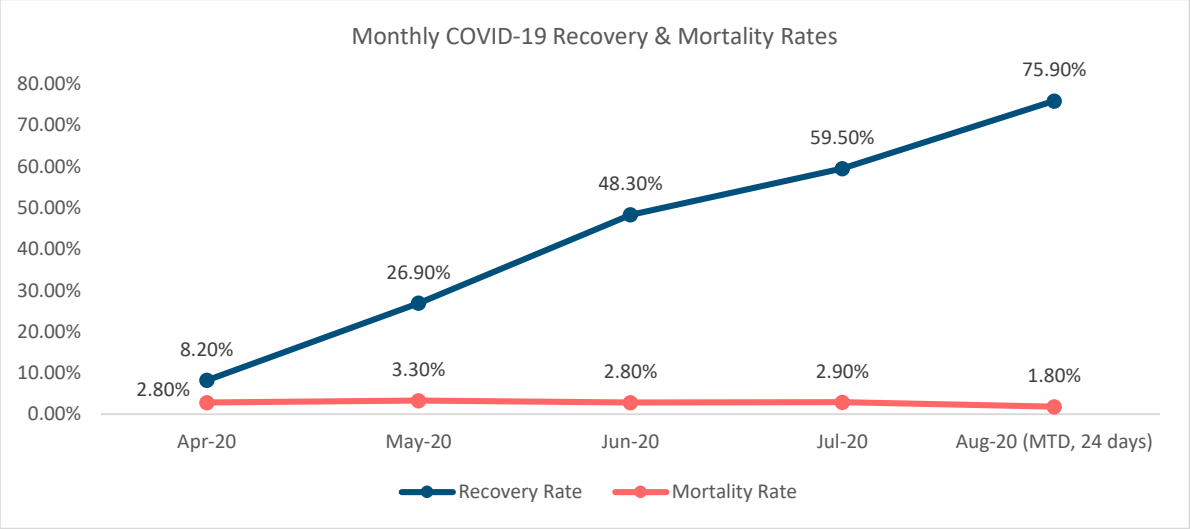


Fig. 3: Monthly COVID-19 recovery and mortality rates in India since April 2020

However, the fact is while big cities are showing decline in active cases, the virus is far from over and we believe (without getting into complex statistical modelling), India will have over 100,000 fatalities from COVID-19 by end of September 2020.

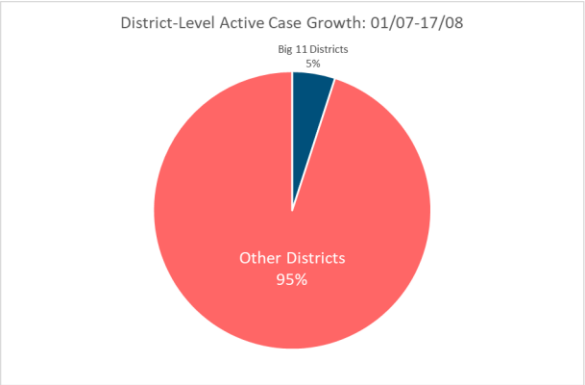
The India picture also doesn't tell the whole story and for that one has to look at and district level picture to understand what is going on.

District Level Picture

While initially the COVID-19 cases were prevalent in the big cities, latest numbers show that the virus spread is significantly higher in smaller districts. Given that India's healthcare system is concentrated in the large urban centres, this presents a substantial challenge in the upcoming months.

We define the Big 11 districts as Mumbai, Pune, Thane, Chennai, Delhi (the whole state), Bangalore Urban, Kolkata, Ahmedabad, Jaipur, Gurgaon and NOIDA. These districts have been the focus of COVID-19 battle from corporate CSR and philanthropies, but are now seeing significant drop in active cases.

Analysis shows that between July 1, 2020 and August 17, 2020, 95% of new active cases and 63% of fatalities due to COVID-19 occurred in districts outside the Big 11.



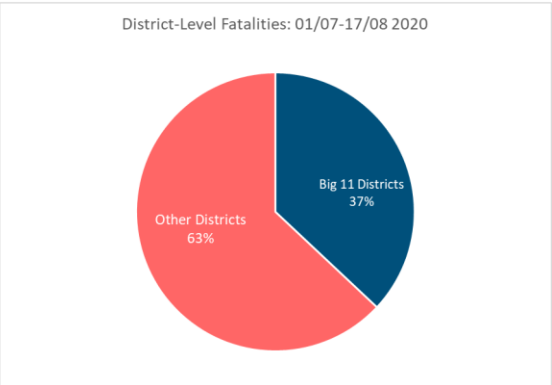


Fig. 4 & 5: Comparing active case growth & fatalities of Big 11 districts to other districts

The implication of this is that the virus has moved to the smaller districts and governments, philanthropies and corporate CSR need to meet this challenge by focusing on the smaller districts.

Priority Districts

To help focus efforts of philanthropies and corporate CSR to battle COVID-19, we have prioritized districts based on the methodology mentioned in this document.

We identify priority districts as follows:

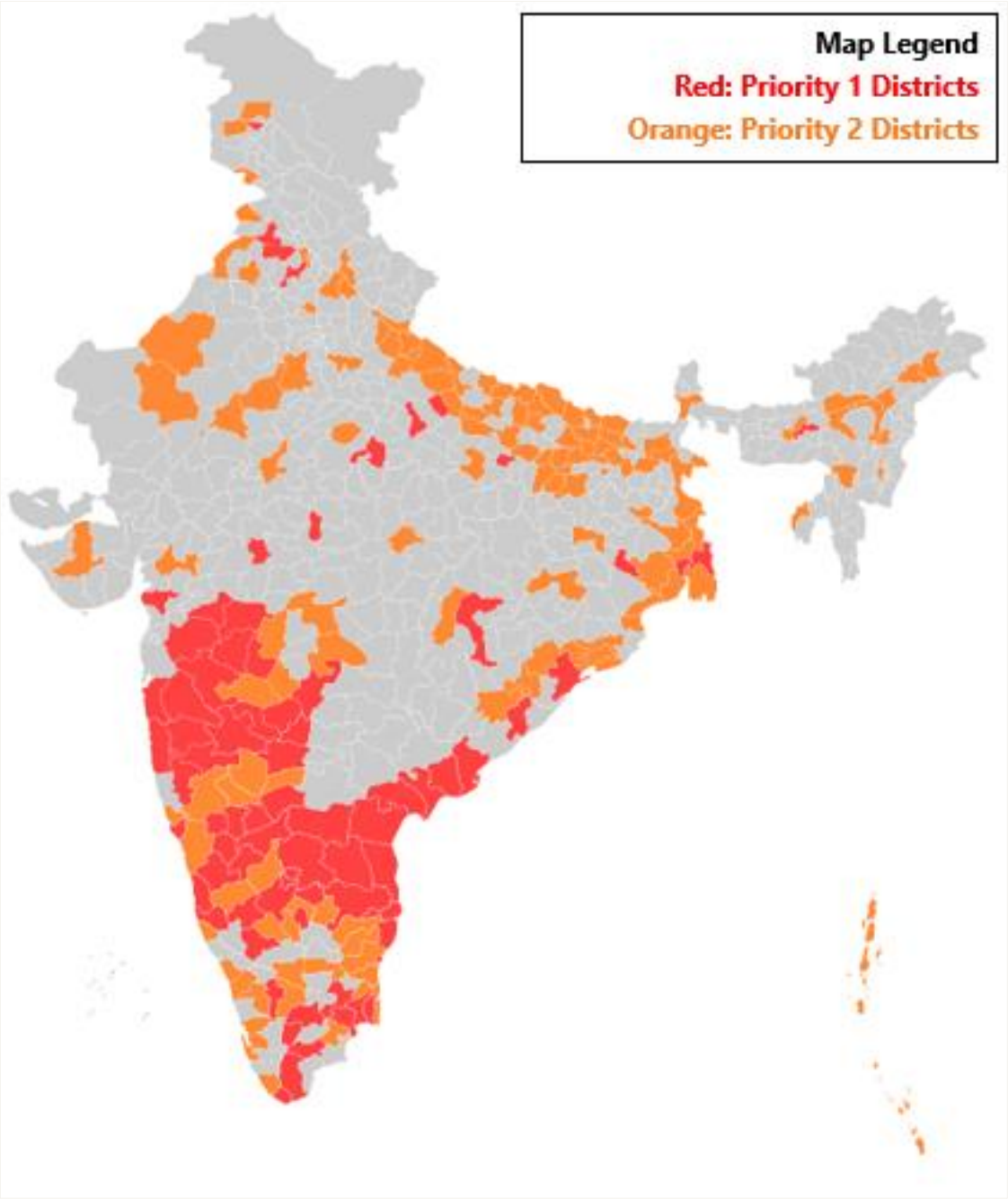


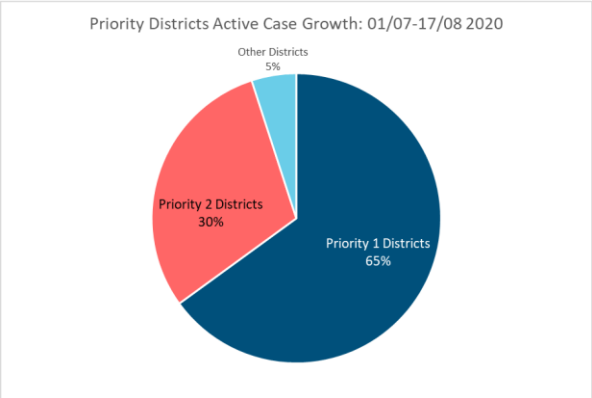
Fig. 6: National-level mapping of priority COVID-19 districts

A detailed table listing out the priority districts by state is provided in Annexure 1 for your reference.

A quick analysis of the above priority districts show that the worst affected states are Maharashtra, Tamil Nadu, Andhra Pradesh, Karnataka, Uttar Pradesh, West Bengal, Kerala, Bihar and Odisha. Together these states represent 60% of India's GDP.

We believe that the economic recovery of India and associated uptick in demand as well as corporate earnings are intricately linked to the COVID-19 situation improving in these states and districts.

Our Priority 1 and Priority 2 Districts collectively represent 95% of new active cases and 66% of fatalities in the Review Period.



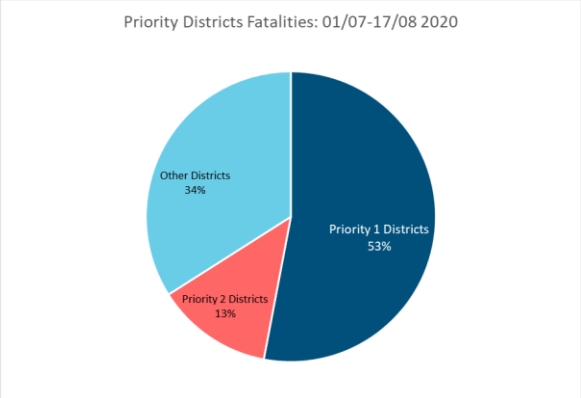


Fig. 7 & 8: Comparing active case growth & fatalities of priority COVID-19 districts to other districts

Detailed charts showcasing the severity of COVID-19 impact in Priority 1 districts of Maharashtra, Andhra Pradesh, Karnataka and Tamil Nadu are provided in Annexure 2 for your reference.

What Should Donors Do?

The challenges in the smaller districts manifold. The lack of health infrastructure is a problem we are all aware of. With only 20% of doctors situated in rural areas, availability of trained medical staff is an issue. There is also the issue of lack of adequate medical equipment and infrastructure which are crucial to help patients.

Given the spread of the virus to smaller districts, we believe the government alone won't be able to deal with the pandemic and needs help from all quarters. We believe Corporate CSR, philanthropies and other donors have a key role to play in addressing the healthcare system in India, especially in these priority districts.

We recommend a three-pronged approach to addressing the crises:

Prevent	Prepare	Provide
• Encourage behaviour change to proper and consistent usage of masks, good sanitation practices and social distancing	• Support COVID-19 training of doctors, nurses, health workers in small districts (especially smaller clinics, nursing homes, small hospitals)	• Provide key medical equipment • Focus on providing oxygenation and respiratory equipment • Support technology enabled solutions like Tele-ICU, productivity tools for doctors and nurses

The emerging situation necessitate a redirection of our collaborative efforts. By channelling resources into smaller districts, we can pave the way for better health for India and quicker economic recovery.

Annexures

Annexure 1: Table listing out Priority COVID-19 districts across India

Priority States	Priority 1 Districts	Priority 2 Districts
Andhra Pradesh	East Godavari, Chitoor, Guntur, Kurnool, Vizianagaram, Visakhapattanam, Anantpur, West Godavari, Srikakulam, SPS Nellore, Prakasam, YSR Kadapa, Krishna	-
Andaman & Nicobar Islands	-	Andaman & Nicobar Islands
Assam	Kamrup Metropolitan (Guwahati)	Cachar, Dibrugarh, Jorhat, Tinsukia, Nagaon, Kamrup, Golaghat, Sonitpur
Bihar	-	Patna, East Champaran, Begusarai, Madhubani, Katihar, Muzaffarpur, Saran, Saharsa, Bhagalpur, Araria, Nalanda, West Champaran, Buxar, Rohtas, Gaya, Purnia, Sitamarhi, Bhojpur, Vaishali, Jehanabad, Samastipur, Aurangabad, Darbhanga, Munger, Sheikhpura
Chandigarh	-	Chandigarh
Chhattisgarh	Raipur	Durg
Goa	South Goa	North Goa
Gujarat	Surat,	Rajkot, Vadodara
Haryana	-	Panipat
Jammu & Kashmir	Srinagar	Jammu, Bandipora, Baramulla
Jharkhand	East Singhbhum	Ranchi, Dhanbad
Karnataka	Bangalore Urban, Ballari, Mysuru, , Udupi, Dharwad, Dakshina Kannada, Kalaburagi, Raichur, Shivamogga, Hassan, Davanagere, Tumkuru, Koppal, Gadag, Bidar, Haveri, Chikkaballapura	Belagavi, Mandya, Yadgir, Bagalkote,, Kolar, Vijayapura, Uttara Kannada, Chikkamaguluru, Bengaluru Rural, Ramanagara, Chitradurga
Kerala	-	Thiruvanantapuram, Malappuram, Alappuzha, Ernakulam, Kozhikode, Kasargod, Palakkad, Kottayam
Madhya Pradesh	Indore, Bhopal	Jabalpur, Gwalior
Maharashtra	Pune, Nashik, Nagpur, Kolhapur, Palghar, Aurangabad, Jalgaon, Raigad, Solapur, Ahmednagar, Satara, Sangli, Latur, Nanded, Osmanabad, Dhule, Jalna, Ratnagiri	Beed, Amravati, Parbhani, Buldhana Yavatmal,,
Manipur	-	Imphal West
Nagaland	-	Dimapur, Kohima

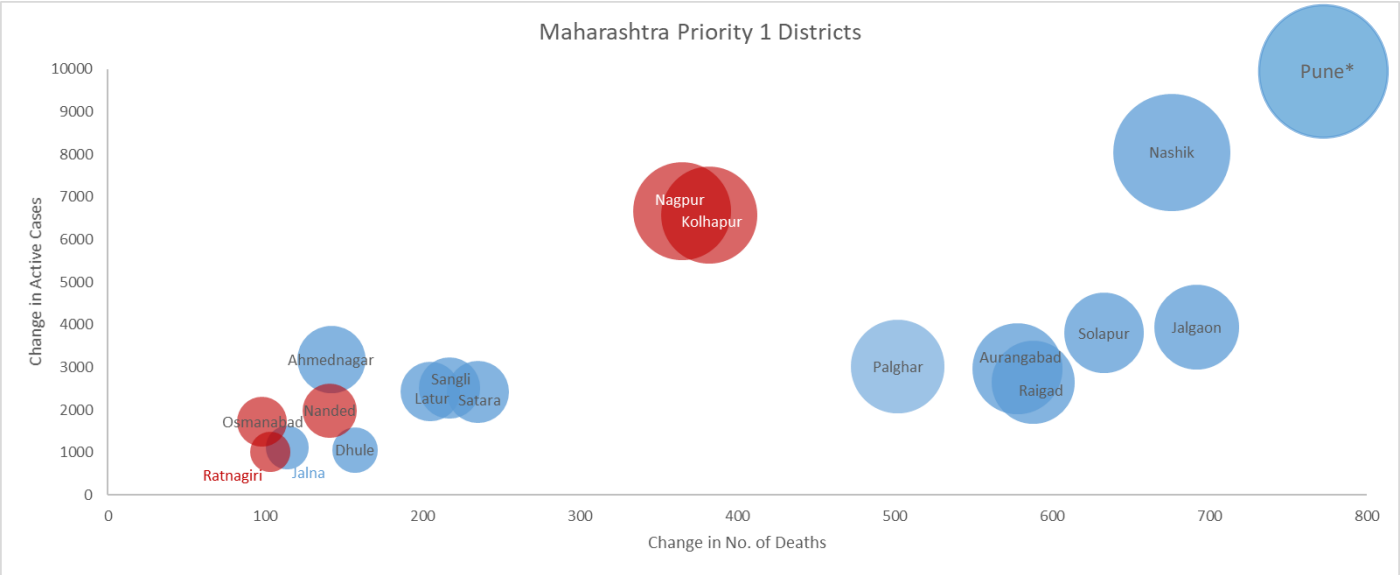
Odisha	Ganjam	Khordha (Bhubaneswar), Cuttack, Sundergarh, Rayagada, Koraput, Puri, Bhadrak, Balasore, Nayagarh, Kandhamal
Puducherry	Puducherry	-
Punjab	Ludhiana, Patiala, Jalandhar	SAS Nagar, Ferozepur, Bathinda, Amritsar
Rajasthan	-	Jaipur, Kota, Jodhpur, Alwar, Bikaner, Ajmer
Tamil Nadu	Thiruvallur, Theni, Kancheepuram, Coimbatore, Kanyakumari, Tirunelveli, Pudukkottai, Ranipet, Tenkasi, Thoothukkudi, Virudhunagar, Thiruchirapalli, Thanjavur, Dindigul	Cuddalore, Chengalpattu, Salem, Thiruvannamalai, Vellore, Nagapattanam, Erode, Kallakurichi, Ariyalur, Tiruppur, Sivaganga
Tripura		West Tripura
Uttar Pradesh	Lucknow, Kanpur Nagar, Varanasi, Jhansi	Gorakhpur, Prayagraj, Bareilly, Ballia, Aligarh, Sahranpur, Azamgarh, Basti, Kushinagar, Shahjahanpur, Moradabad, Deoria, Barabanki, Siddharthnagar, Sultanpur, Sitapur, Rampur, Ghazipur, Ayodhya, Pilibhit, Lakhimpur Kheri, Maharajganj, Bahraich
Uttarakhand	-	Haridwar, Uddham Singh Nagar, Dehradun
West Bengal	Kolkata, North 24 Praganas, Howrah	South 24, Praganas, Purba Medinipur, Hooghly, Malda, Nadia, Darjeeling, Murshidabad, Paschim Medinipur, Dakshin Dinajpur, Paschim Bardhaman, Purba Bardhaman

Annexure 2: Mapping out the severity of COVID-19 impact in Priority 1 Districts (01/07-17/08)

Legend:

- **Blue:** Priority 1 Districts
- **Red:** Priority 1 Districts, with more than 10 percentage point drop in recovery rates between 01/07 – 17/08

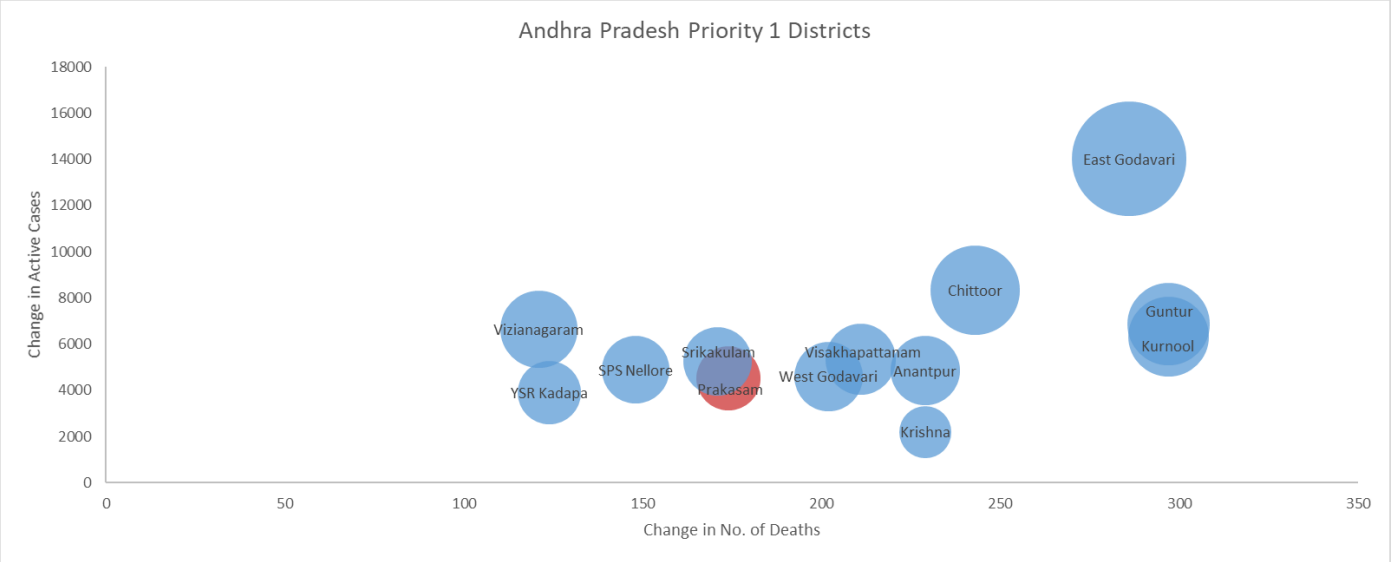
Maharashtra



- Total Maharashtra Priority 1 Districts change in deaths between 01/07 – 17/08: **9,075** (counting for **74% of Maharashtra total**)
- Total Maharashtra Priority 1 Districts change in active cases between 01/07 – 17/08: **83,527** (counting for **54% of Maharashtra total**)
- *In the chart, Pune is not to scale, actual statistics for Pune between 01/07 – 17/08:

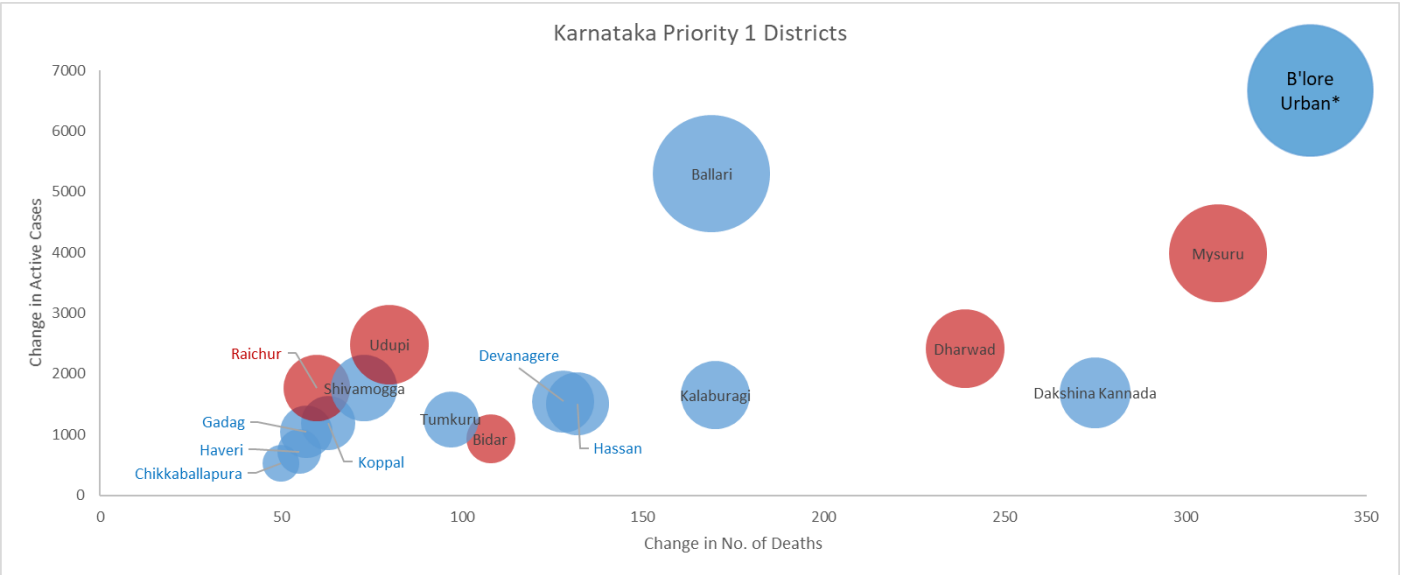
Number of deaths	3,247
Change in active cases	28,345
Active cases, as on 17/08	39,424

Andhra Pradesh



- Total Andhra Pradesh Priority 1 Districts change in deaths between 01/07 – 17/08: **2,372** (counting for **93% of Andhra Pradesh total**)
- Total Andhra Pradesh Priority 1 Districts change in active cases between 01/07 – 17/08: **77,744** (counting for **92% of Andhra Pradesh total**)

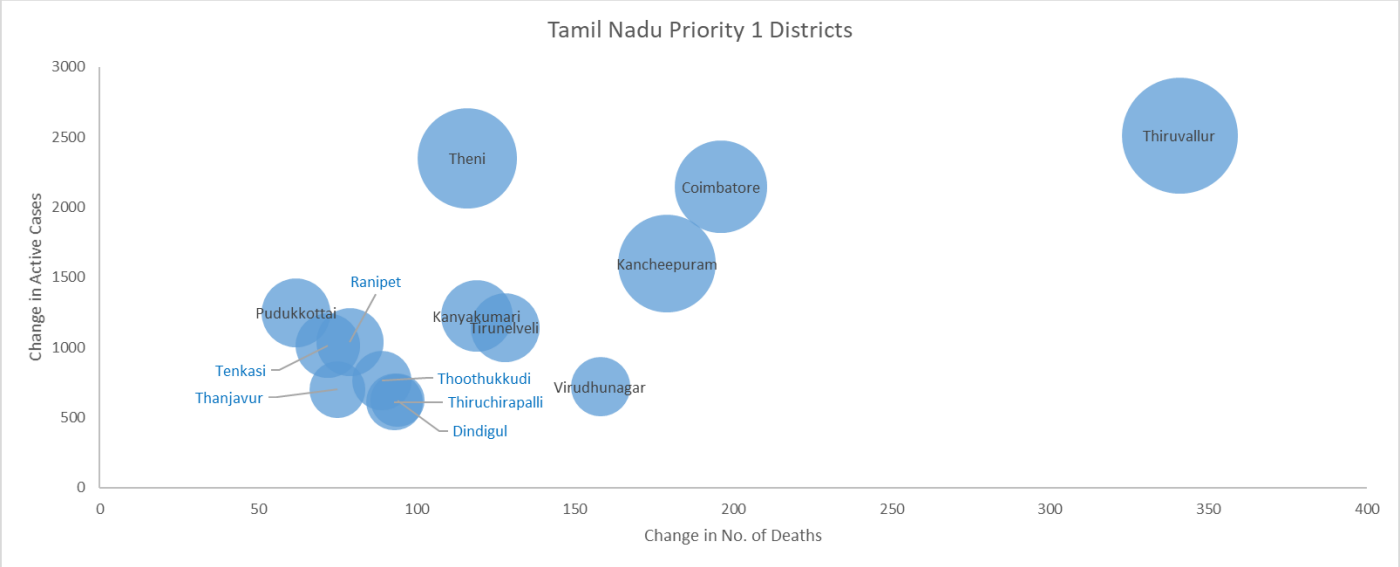
Karnataka



- Total Karnataka Priority 1 Districts change in deaths between 01/07 – 17/08: **3,548** (counting for **93% of Karnataka total**)
- Total Karnataka Priority 1 Districts change in active cases between 01/07 – 17/08: **59,543** (counting for **74% of Karnataka total**)
- *In the chart, Bangalore Urban is not to scale, actual statistics for Bangalore Urban between 01/07 – 17/08:

Number of deaths	1,483
Change in active cases	29,760
Active cases, as on 17/08	34,408

Tamil Nadu



- Total Tamil Nadu Priority 1 Districts change in deaths between 01/07 – 17/08: **1,801** (counting for **39% of Tamil Nadu total**)
- Total Tamil Nadu Priority 1 Districts change in active cases between 01/07 – 17/08: **17,688** (counting for **33% of Tamil Nadu total**)

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