



# **Covid-19 pandemic in Maharashtra: Need of a comprehensive resumption and implementation of T3 protocols**

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**Abstract:** The Covid-19 timeline data of the Maharashtra state is used to analyse pandemic situation. The datasets are obtained from the website of Indian Statistical Institute, Bangalore Centre and analysed with python graphics libraries. Covid-19 data for the Raigad district was obtained from the webpage of district collector office. Strongly correlated variables like total deaths, total cases, population, GDP (Gross Domestic Product) etc. has been studied.

**Keywords:** COVID-19, GDP per capita, total deaths, age, states

## **Introduction**

The traditional test, treat and track protocol (T3 protocol) although effective at first place in India is no longer implemented at its full capacity in second wave of Covid-19 [1-2]. The mentioned T3 protocol has been deployed effectively last year in most of the districts of Maharashtra [3]. The efforts put in increasing testing, setting up quarantine facilities, COVID-19 treatment facilities, contact tracing through Aarogya Setu application are fell short when it came to suppressing the pandemic [4-5]. Asha workers will play an effective role in the contact tracing and making awareness about this pandemic in villages [6]. The health infrastructure is not equivalent between rural and urban India. 65 percent of our population resides in rural area but same percentage of beds available for the patients which are located in urban area [7]. Many people done research on this subject in various ways such as biological, economical etc. [8]. In recent times, there in huge increment in variants of mutated versions of Covid-19 corona virus, which are, more and more deadly than the very first version found in china [9-11]. Covid-19 patients are also suffering through various diseases/issues that came along with Covid-19. Such as skin problems, psychological issues [12], as well as one of the most important is economic issues [8]. Many people lost their jobs. Many countries lost lot of their capital and GDP's of many countries gone down [13]. In this study, we used Covid-19 data for the state of Maharashtra to predict the various possibilities responsible for the rising number of active cases in second wave.

## Materials and Methods

The data for the Covid-19 analysis for Maharashtra has been downloaded from the webpage of Indian Statistical Institute, Bangalore centre. The data was released by Ministry of Health and Family Welfare for States and Union territories. The data comprises updated file in csv file format with 70 district profiles of Covid-19 [14]. Every profile includes two sections:

1. Cases: new cases are being confirmed each day and number of cases have been confirmed since the pandemic started.
2. Deaths: number of deaths from COVID-19

This data file is analysed with python *libraries* including NumPy, Pandas, Matplotlib, *Seaborn*, and Plotly. The data is analysed from 12 April 2021 to 12 July 2021. The data for the Raigad district was collected from the webpage of the district collector office [15].

## Results and Discussion

Figure 1 shows timeline for Covid-19 confirmed cases for mostly affected districts in the state of Maharashtra. The weekly positivity rate in 10 districts remains higher than the state average of 4.36%. These districts include Nandurbar (11.72%), Kolhapur (9.85%), Sangli (9.20%), Satara (8.23%), Ratnagiri (7.91%), Pune (7.74%), Raigad (6.98%), Sindhudurg (5.94%), Aurangabad(5.10%)and Beed(4.64%).

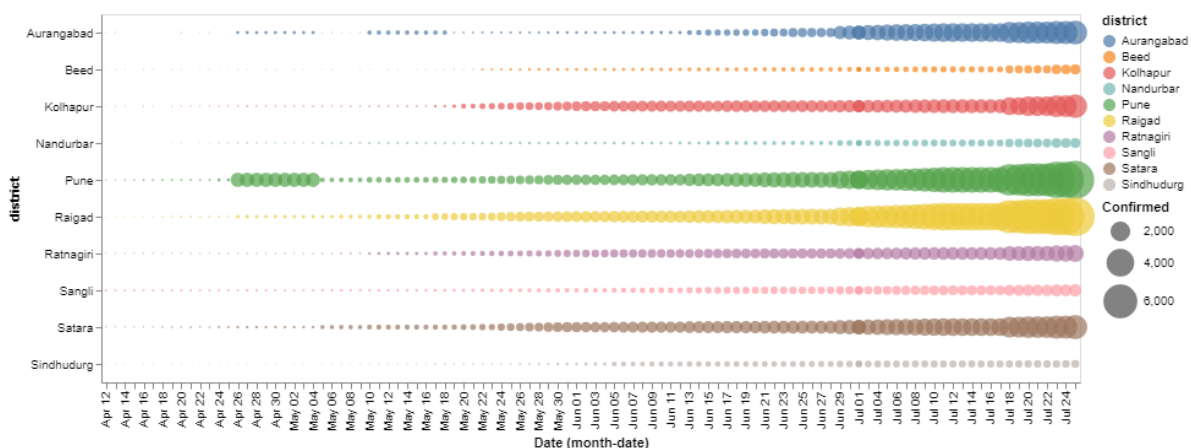


Figure 1: Covid-19 affected districts of Maharashtra in second wave

There is an inflammatory rise in the confirmed cases in the district of Pune and Raigad. Comparing the population of Raigad and Pune district the situation seems to be more critical in the district of Raigad. A team of officials from the central government also visited Maharashtra to track down the amid increase in the Covid-19 surge. Their report says that the guidelines issued by the government are being flouted and there is no strict implementation of the restrictions [16]. They have criticised the state of Maharashtra about the inadequate supply of Oxygen and ineffective implementation of contact tracing. Figure 2 shows the Covid-19 confirmed cases and deaths for the Raigad district. On the Y-axis there is Total confirmed cases and deaths of Covid-19 and on the X-axis is timeline. The dataset shows that as the total cases reported crosses cumulative number of 6000, the total death number also goes up. During the first wave, the surge of this infection is largely in the part of urban area and congested localities. In the second wave, rural population is most susceptible to this infection. As the stress on health department is increased in the second wave, there is no work force available to do contact tracing. In June 2020, the government has announced the programme ‘chase the virus’ which aimed at tracing at least 20 people who had come in contact with Covid-positive person [17]. Later it was

replaced by My Family, My Responsibility' programme in which only family members were traced. February 2021 onwards, government stopped contact-tracing programme and focused on mask wearing and sanitisation.

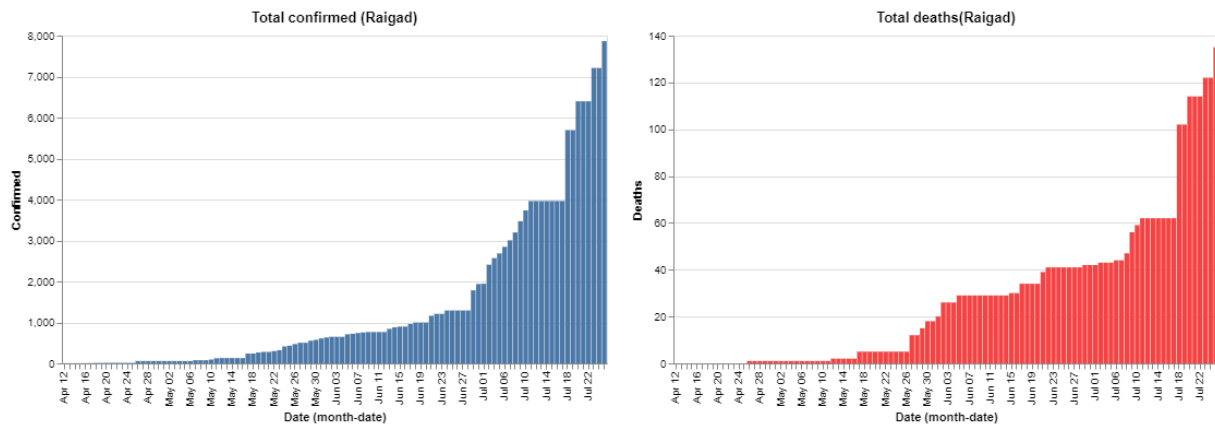
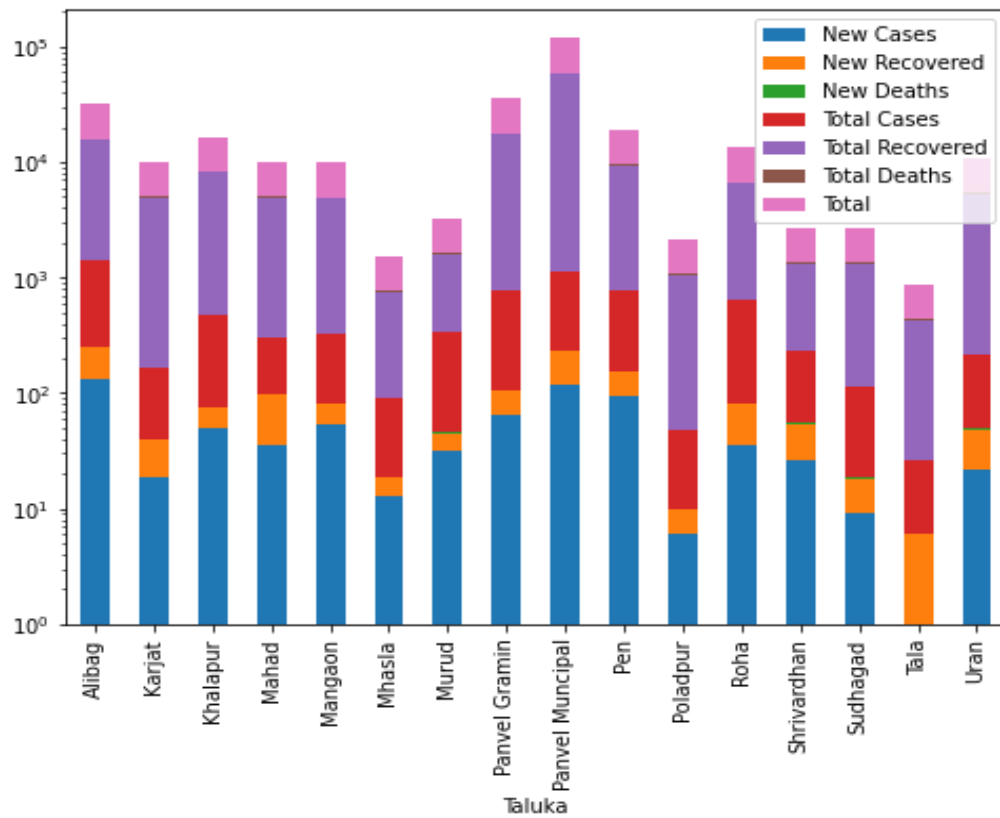


Figure 2: Total confirmed cases and deaths for the Raigad district.

To reduce the burden on health workers government has initiated some technology based solutions like Arogya Setu App. However, this requires the person who is positive, is to submit his status on the application and it will reduce the need of data entry workers. However, there is very little compliance from the public in this regard. There is also a little follow-up of Covid-19 positive patients kept in Home isolation.

The life expectancy is very much depend upon the economic condition of the individual in the developing countries. Tighten budgets; struggle for food makes an individual not able to pay attention for his medical health in the developing countries. Study demonstrates that in developed countries people live longer and much better healthier life. Countries with higher GDP per Capita will able to provide for their people good services such as an education, health facilities, rule based sustainable life support system which keeps their mortality rates under control in such pandemic situations. Although the Raigad district is having Real Gross District Value Added is around 46 crore (2017-18) the Health facilities are not at par required to counterfeit this infectious disease [18].

Figure 3 shows the Covid-19 data for the district Raigad. The data is collected from the Collector office, Raigad as on 23.06.2021. Among the talukas the Tala, Mhasala and Poladpur has reported lowest number of active cases. These three Talukas has not only low population but also lower or no industrial growth as compared to another talukas. Khopoli, Karjat, Panvel, Rassayani, Taloje Panchnad, Nagothane and Roha is having industrial units of manufacturing steel pipes, chemicals and medicines [19]. M.I.D.C is encouraging industrial units in Panvel tehsil to increase industrial productions. It clearly shows that the industrial areas are having dense population and higher number of active cases. There is a strong relationship between large industrial areas and total cases as can be seen from Figure 3.



**Figure 3: Covid-19 data for the Talukas in Raigad district**

## Conclusion

Transmission of Covid-19 infection in Maharashtra state is more or less under control. Low expenditure on Health sector, inappropriate payment structure of ASHAs, incomprehensible training of health workers, lack of Physical infrastructure and facilities at primary health centres are responsible for large number of active cases in Maharashtra. For the lack of Covid-appropriate behaviour in the public, stricter ground-level enforcement of rules has been suggested.

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