COVID-19 TRACKER: INDIA

10 October 2021
This tracker\(^1\) was developed by researchers at Cambridge Judge Business School and National Institute of Economic and Social Research, working with Health Systems Transformation Platform in India, as part of a pandemic monitoring series devoted to India and its states and union territories. It provides short term forecasts of the trajectory of the pandemic, identifying states and union territories that are at risk of increases in infection incidence. The forecasts are based on a structural time series model that uses historical data in estimation but adapts to the trend emerging in the most recent period. The model is described in Harvey and Kattuman (2021) "Time series models based on growth curves with applications to forecasting coronavirus". Harvard Data Science Review, Special issue 1 - COVID -19.

**Daily case numbers continue to decline steadily in India. The filtered growth rate of new cases is -2.4%, unchanged from a week ago, and the reproduction number remains well below one, at 0.91. The trend value of reported cases is likely to fall just under 13,000 per day in two weeks, by 24 October.**

**Evidence suggest the India is transitioning to the endemic phase of the disease. Large surges are very unlikely, though there is enduring potential for local flare ups. Currently, Odisha and West Bengal are the only states featuring the combination of relatively high numbers of daily cases and positive if modest growth.**

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\(^1\) CJBS COVID-19 Tracker for India can be accessed at: [www.jbs.cam.ac.uk/covid-india](http://www.jbs.cam.ac.uk/covid-india)

The companion spreadsheet contains all the estimates and forecasts. A UK tracker based on the same forecasting method is published by the National Institute of Economic and Social Research.

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Daily Covid-19 cases in India: Forecast

Forecasts of daily new cases for the period 11 October to 24 October 2021, based on data till 10 October 2021. The trend value of new COVID-19 cases is likely be under 13,000 per day by 24 October.

The filtered growth rate of daily new cases was -0.024 (-2.4 %) as on 10 October 2021.
R: 10 October 2021

Note: Small daily numbers (less than 25) currently seen in Andaman and Nicobar Islands, Arunachal Pradesh, Bihar, Chandigarh, Chhattisgarh, Dadra and Nagar Haveli, Gujarat, Haryana, Jharkhand, Ladakh, Lakshadweep, Madhya Pradesh, Nagaland, Rajasthan, Sikkim, Tripura and Uttarakhand make their estimates and forecasts less precise.
Daily growth rates of cases (%)  
Trend values as on 03 October 2021
New cases forecasts and daily growth rates:
States and Union territories

Andhra Pradesh

- Data
- Forecast New cases
- Forecast Trend

New Cases

- Sep 15
- Oct 01
- Oct 15

Growth rate of daily cases

- Sep 15
- Oct 01
- Oct 15
India: Accuracy of last week's forecasts
Mean Absolute Percentage Error: 5.42%

Cases

Actual
Forecast Trend
Forecast
lower bound
upper bound

04/10/2021
10/10/2021
Notes

Data: COVID-19 confirmed cases and deaths data are sourced from COVID19-India API: https://api.covid19india.org/

New cases: forecasts. Forecasts above are based on a structural time series model that uses all the data in estimation but adapts to the trend emerging in the most recent period.


Forecast accuracy: is assessed using mean absolute percentage error of the forecasts of cases over the past week. Forecast accuracy will in general be lower for the smaller states / union territories. It is important to pay attention to the confidence intervals around the forecasts. The coverage of the confidence intervals presented is 68%, implying there is 16% probability of the upper bound being exceeded.

New cases: growth rate. The filtered trends presented for daily growth rates of cases are estimated using the Kalman filter, applied to the observed series. The method filters out day of the week effects and random noise to reveal the underlying signal. Unlike methods such as the moving average, this method adapts the trend to changes in real time and characterises underlying patterns of surges or attenuations that are hidden in the volatile series. The method is described in the papers listed above.


Note: The accuracy of forecasts rely on the quality of the published data. Further, changes in government pandemic policies and in transmission relevant social behaviour may lead realised numbers to deviate from forecasts.

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