Coronavirus Pandemic Situation Report

GorwayGlobal Consulting

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About this Report

Since cases of a respiratory illness caused by a novel Corona virus were first reported from Wuhan, China, late in 2019, the disease nCovid19 has grown into a pandemic.

Almost every country in the World is affected to a greater or lesser degree.
Data on the daily count of new cases of the infection and of deaths are reported by health authorities and collated by various international agencies and Universities. This report draws on data from two sources:

1. International country-specific data is from a publicly available data set that is updated every day and published on its website by the European Centre for Disease Control, downloadable from here. https://opendata.ecdc.europa.eu/covid19/casedistribution/csv
2. The data on Indian States is from here https://t.co/lfRdu7epRj?amp=1

Data Analytical Methods

I used R and RStudio to download the data, load it into R and carry out the data manipulation in order to produce the charts that describe the picture. This report was created in RMarkdown. The charts were produced in ggplot2 (credit Wickham H (2016). ggplot2: Elegant Graphics for Data Analysis. Springer-Verlag New York. ISBN 978-3-319-24277-4.)

Plan of the Report

The Report is structured as follows:

1. Global headlines and country wide comparisons
2. Country-wise comparison.
3. The situation in India

1. The headlines

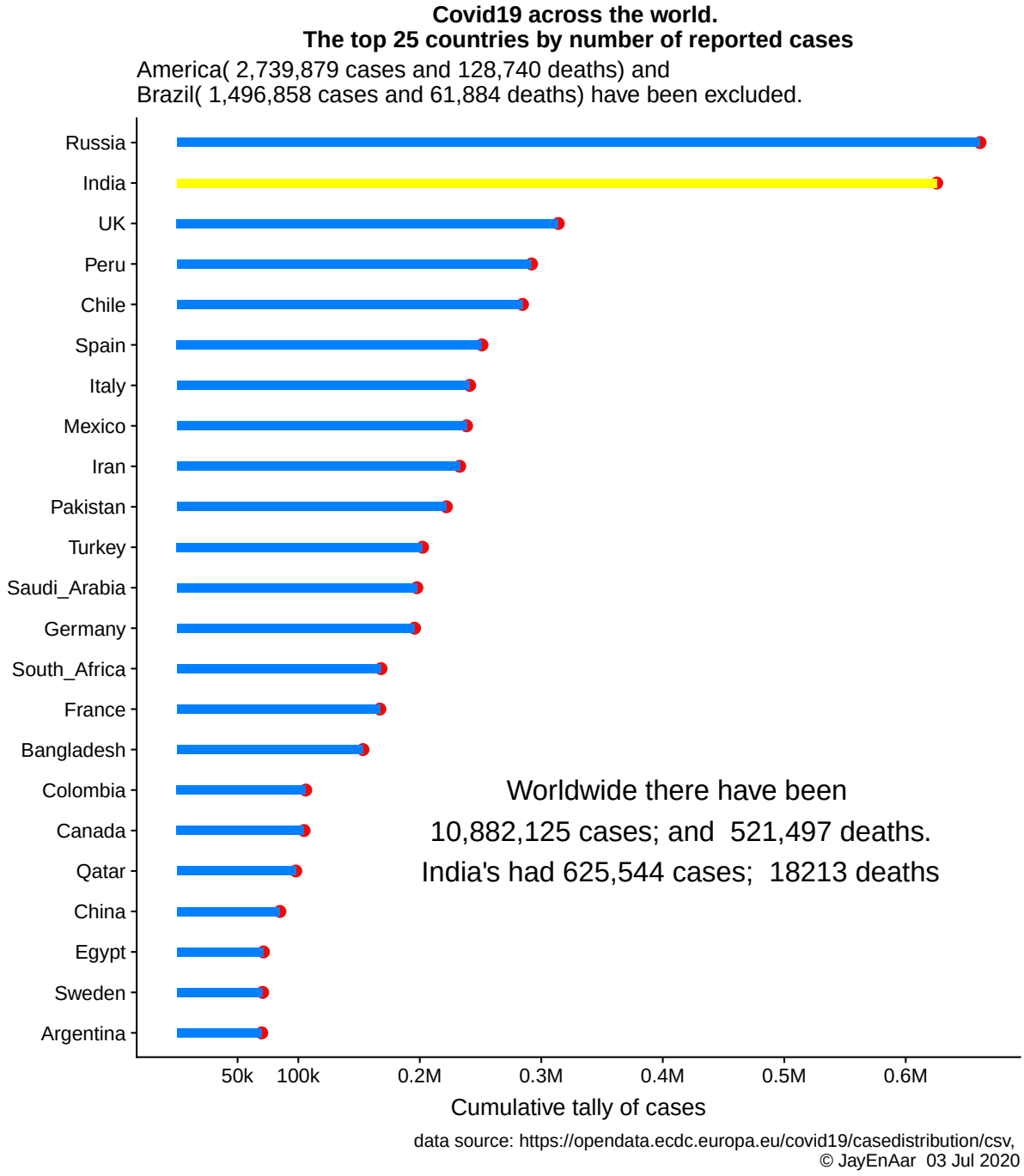
Across the 210 Countries and Territories of the World there were a total of **10,882,125** cases and **521,497** deaths.

In India there have so far been **625,544** cases reported, and **18,213** deaths.

The 10 worst affected countries have a combined population of **2.41** billion people - **31.4** % of the world's total- and account for **65.7** percent of the total infections and **71.2** percent of all deaths.

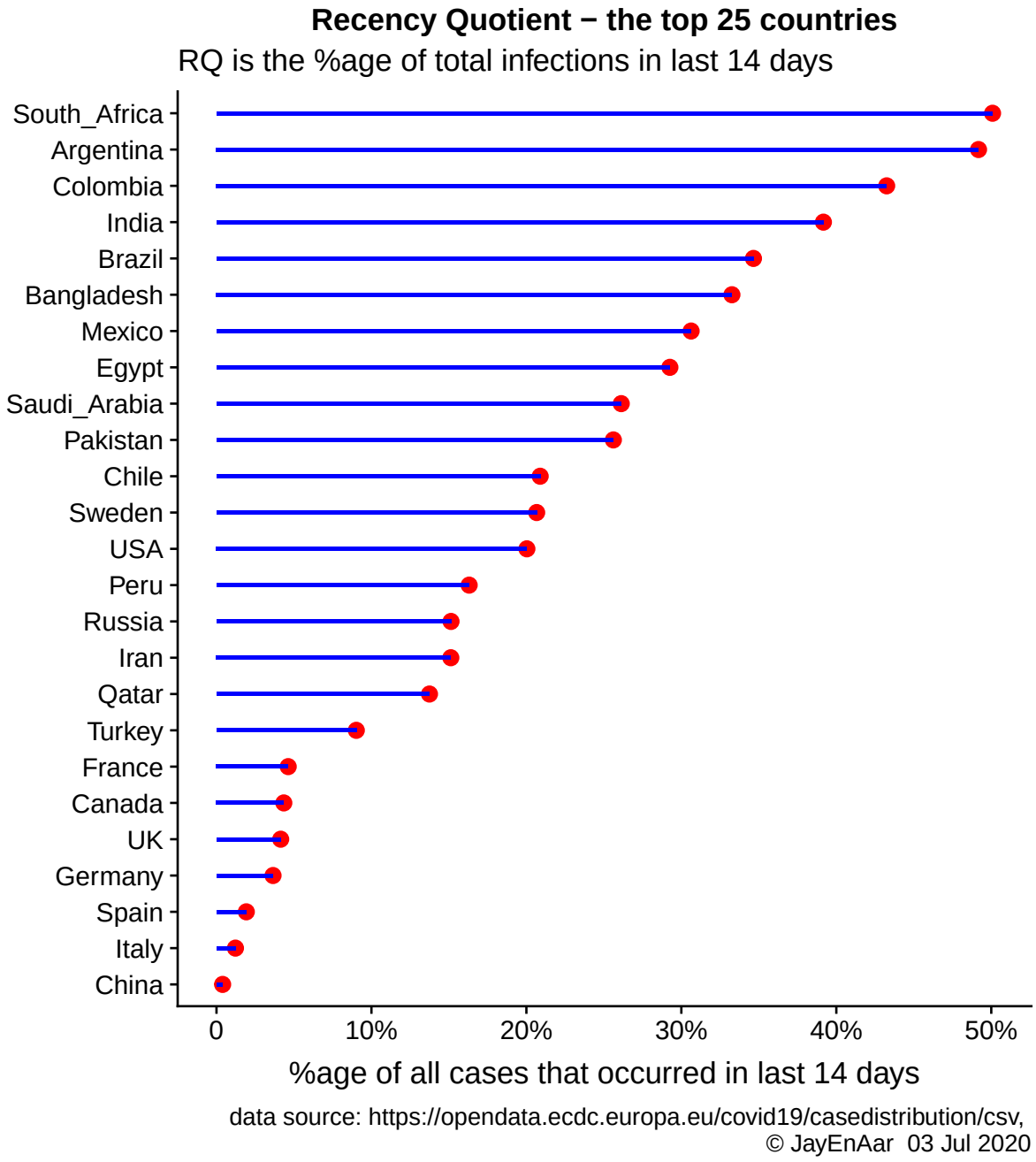
2. The top 25 most severely affected countries

America and Brazil have been excluded from thias chart because the huge number of cases in these two countries distorts the chart by squashing all the other countries'into the left of the chart.



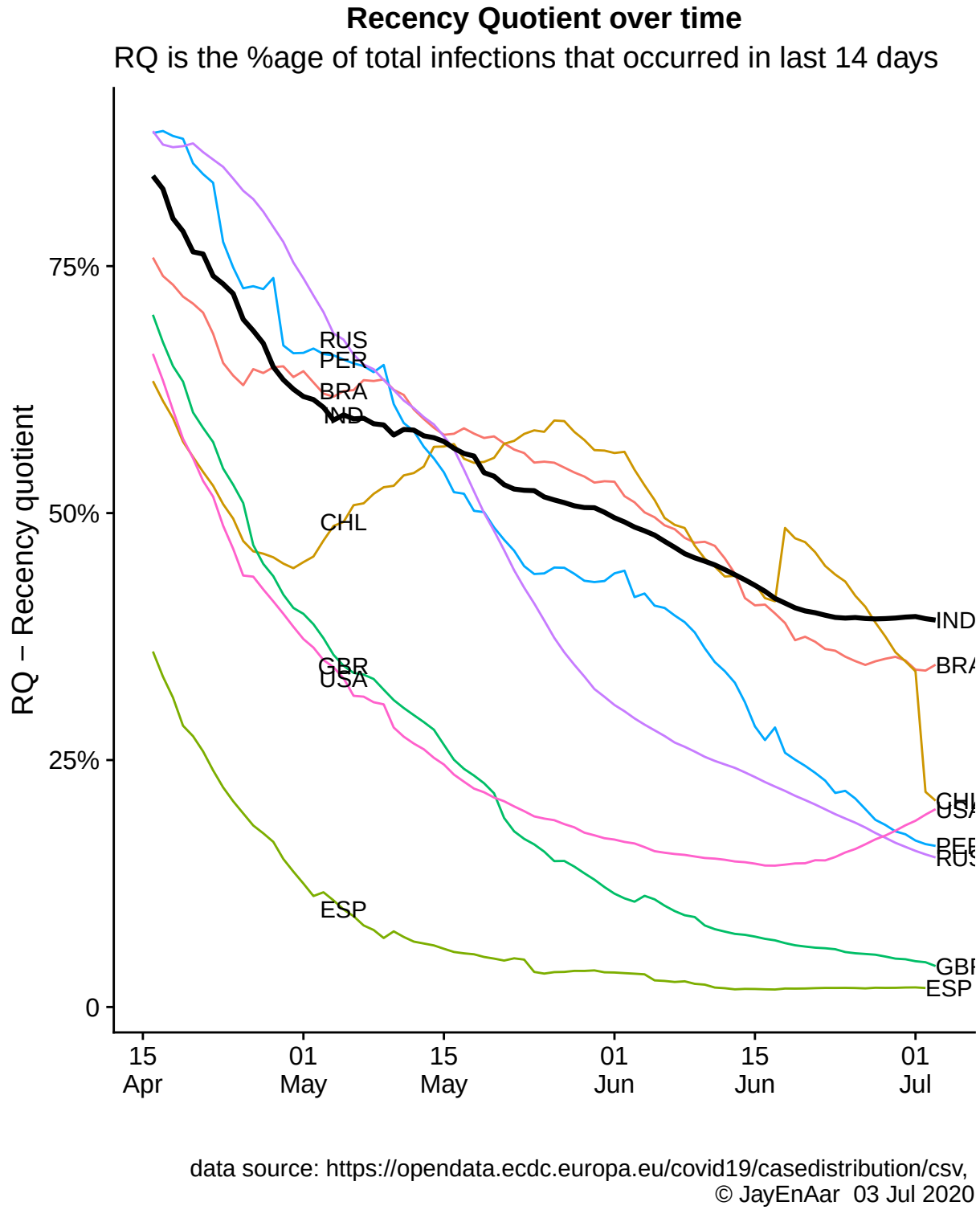
3. The recency quotient.

Comparing the number of cases across countries is problematic because countries differ greatly in their population characteristics. Large countries wil naturally have more cases. The proportion of total cases that occurred in the last 14 days is a measure that I call the Recency Quotient. It is a measure of how 'young' a country's epidemic is - whether it is still growing or is petering out due to effective control measures. The measure is internally referenced and so allows comparisons independent of population characteristics. In essence it measures the on-going performace of each country's control measures.



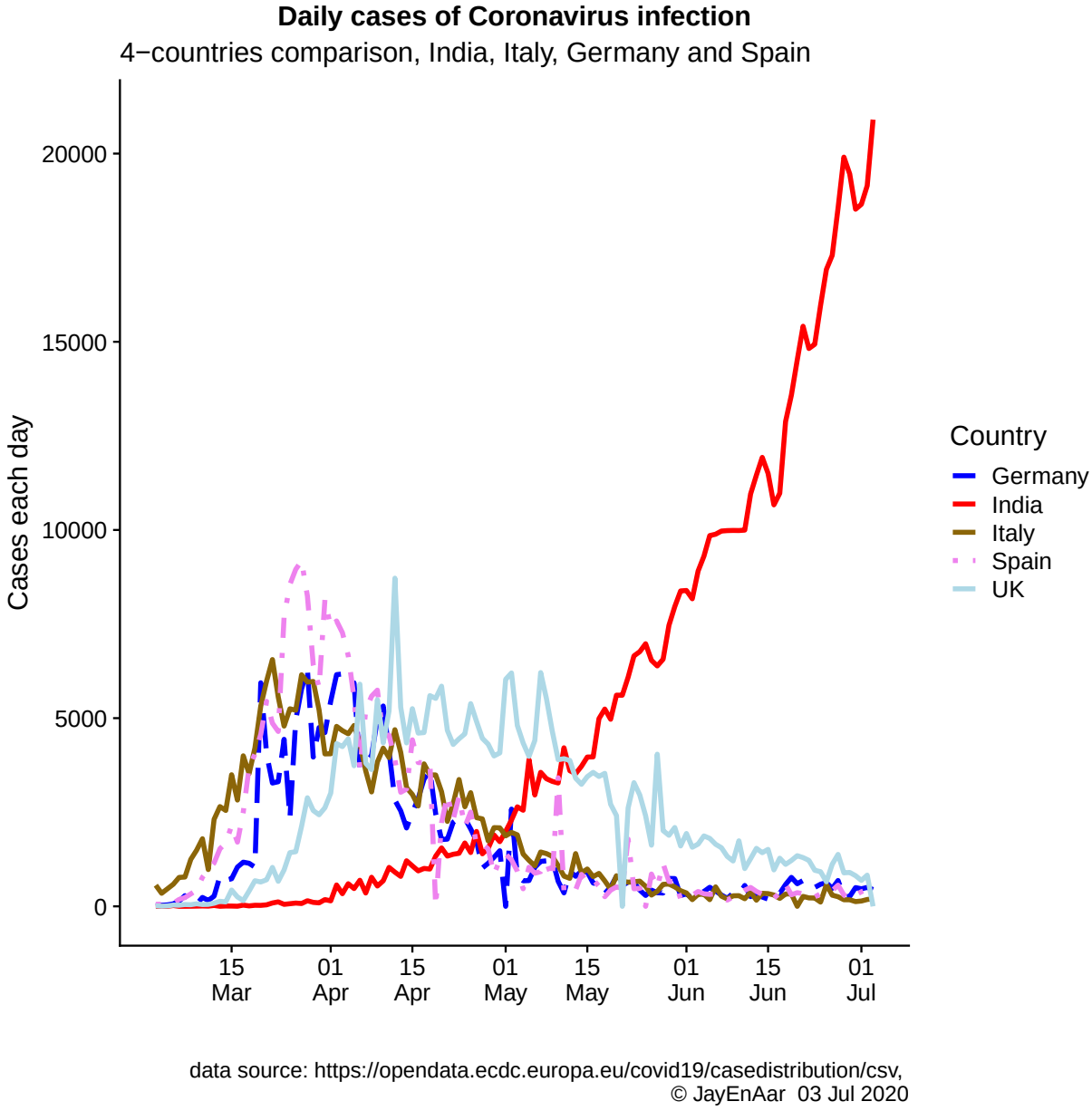
4. Recency quotient time trends across countries

The recency quotient can also be calculated for every day to generate a time series for each country. A time series plot can reveal the rate at which a country's epidemic is growing or slowing down. For clarity this chart shows the time trends in the recency quotient for the 8 most affected countries only.



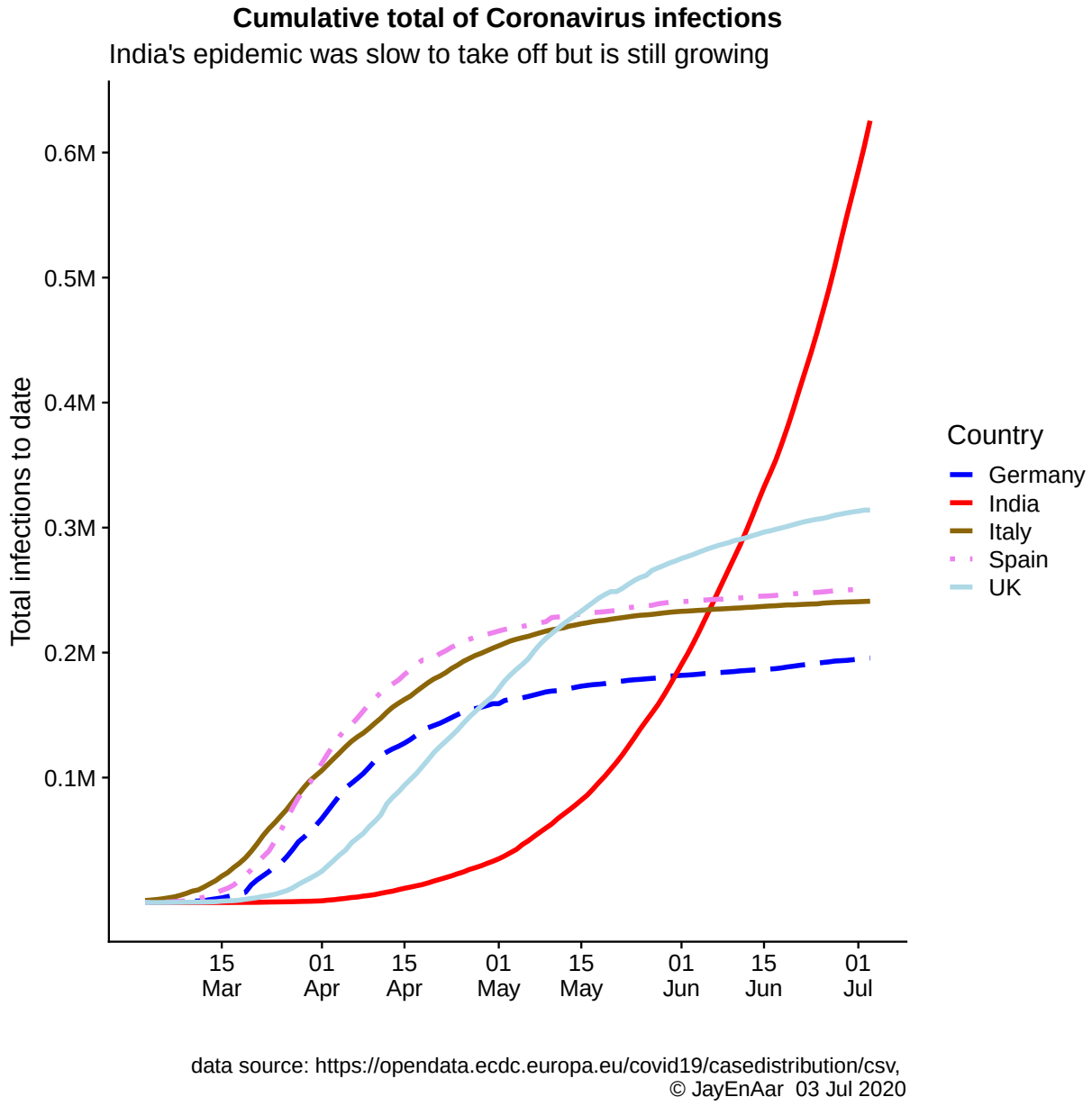
5. India's epidemic - daily cases

Many countries are reporting a drop in the daily incidence of new infection. Not so in India where the reported daily number of cases have been mounting ever since the start and are still on an upward trend.

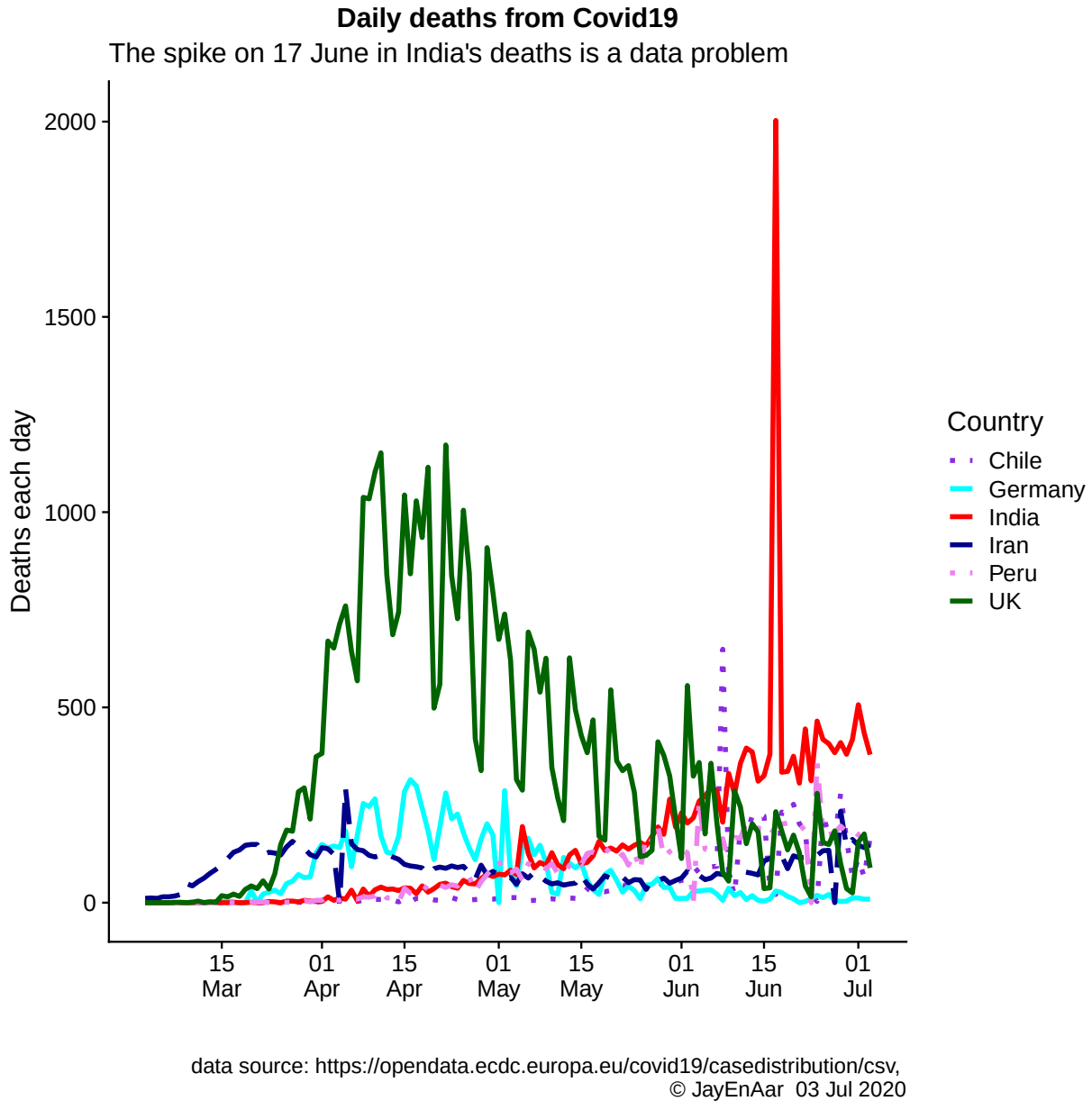


6. India's epidemic - Cumulative cases to date

The epidemic in India started later than many other countries that were badly affected at the start of the pandemic.

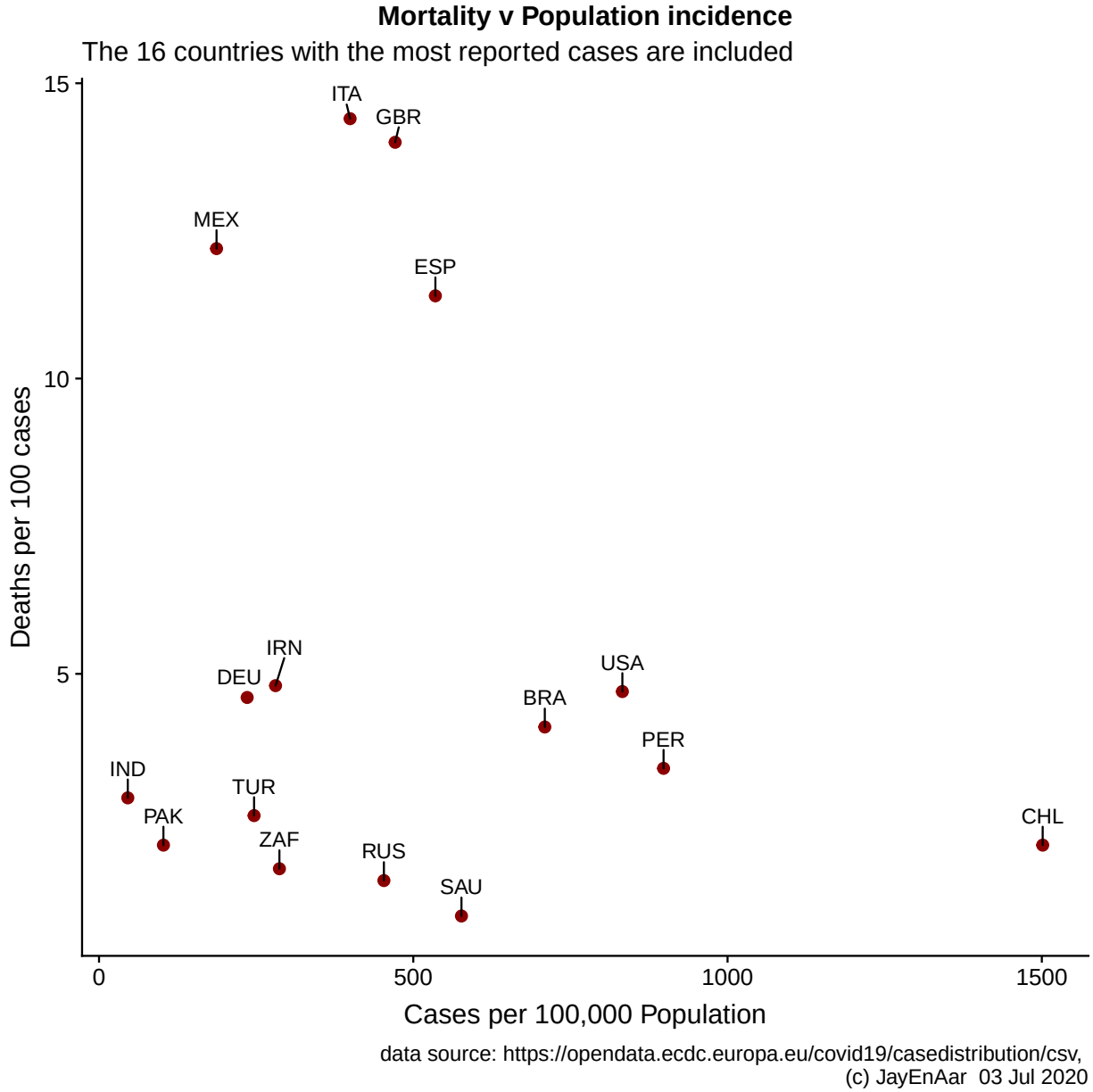


6. India's epidemic - daily deaths India has reported relatively few deaths, given both the size of its population and the number of infections. The unusual spike in the data for India is due to a data problem. On June 17 Maharashtra and Delhi reported an unusual number of deaths. This was a data correction to account for earlier under-reporting.



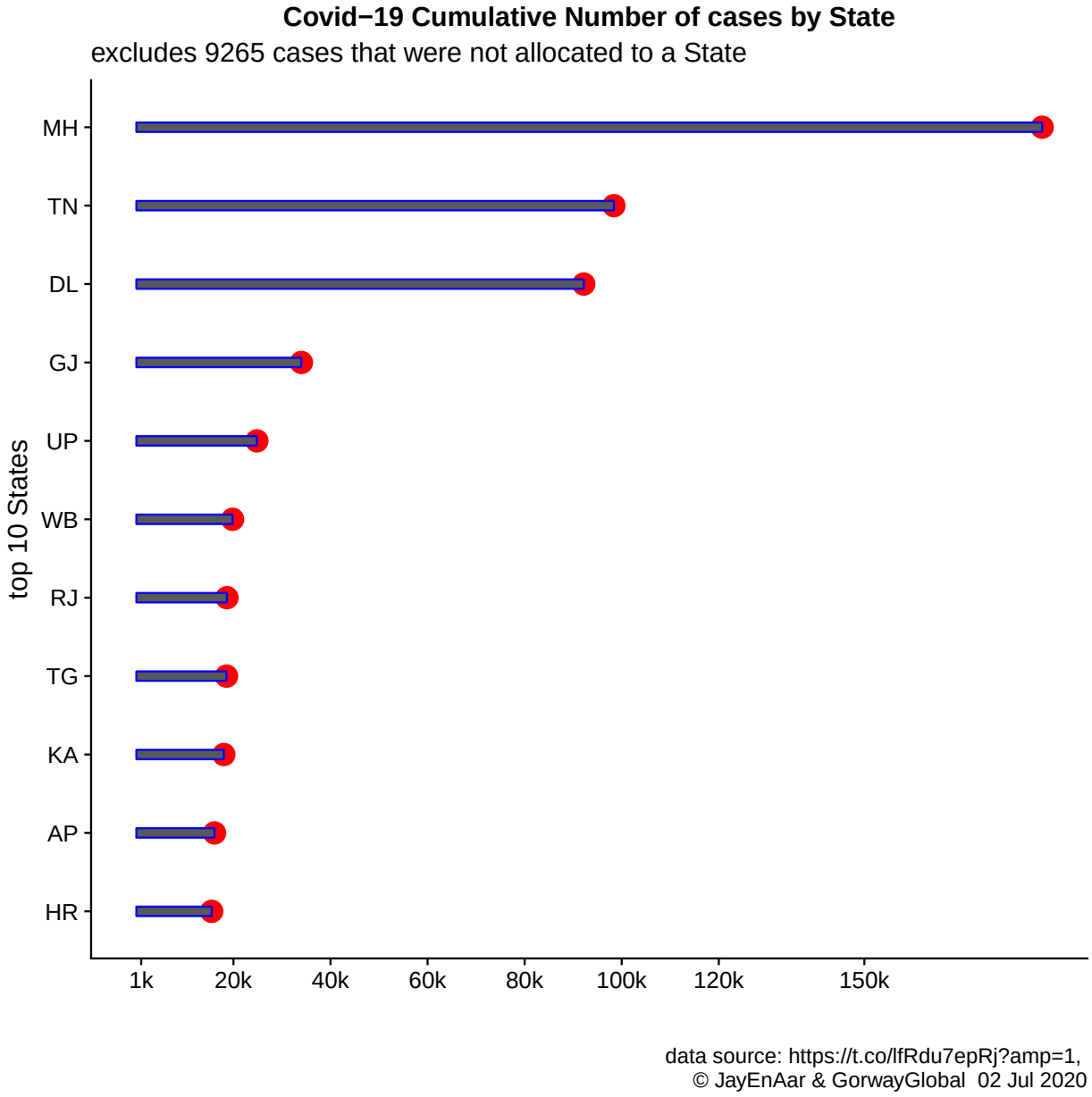
7. Variation in mortality and incidence

Comparisons across countries are potentially misleading unless they take account of differences in population sizes. It is possible to calculate a crude population incidence (cases per million population) and a crude mortality indicator (deaths per 100 cases). It is important to note that this is not the same as the case fatality rate for which a defined cohort needs to be followed up.

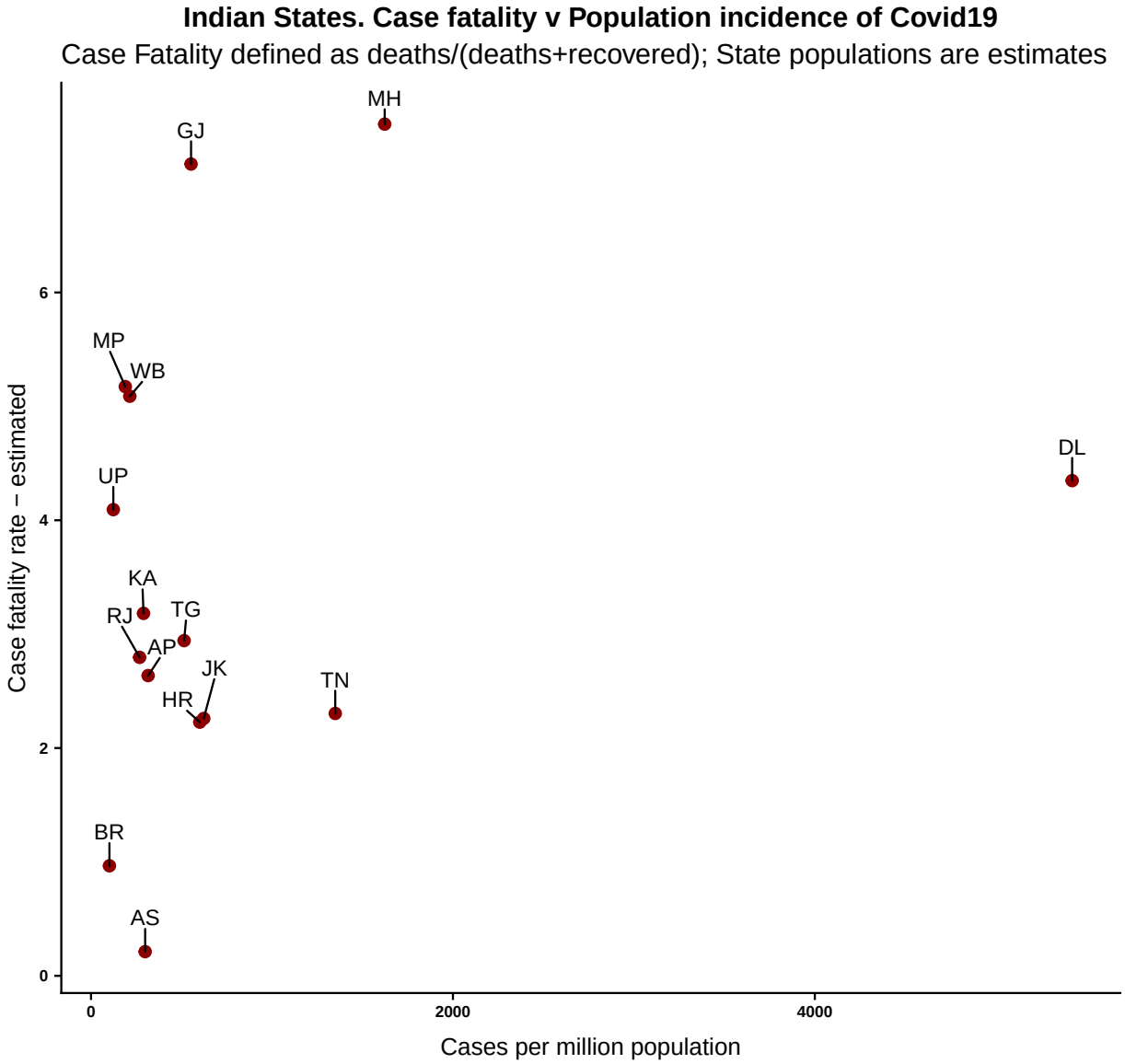


8. The picture wthin India. The epidemic in the India's States and Union Territories.

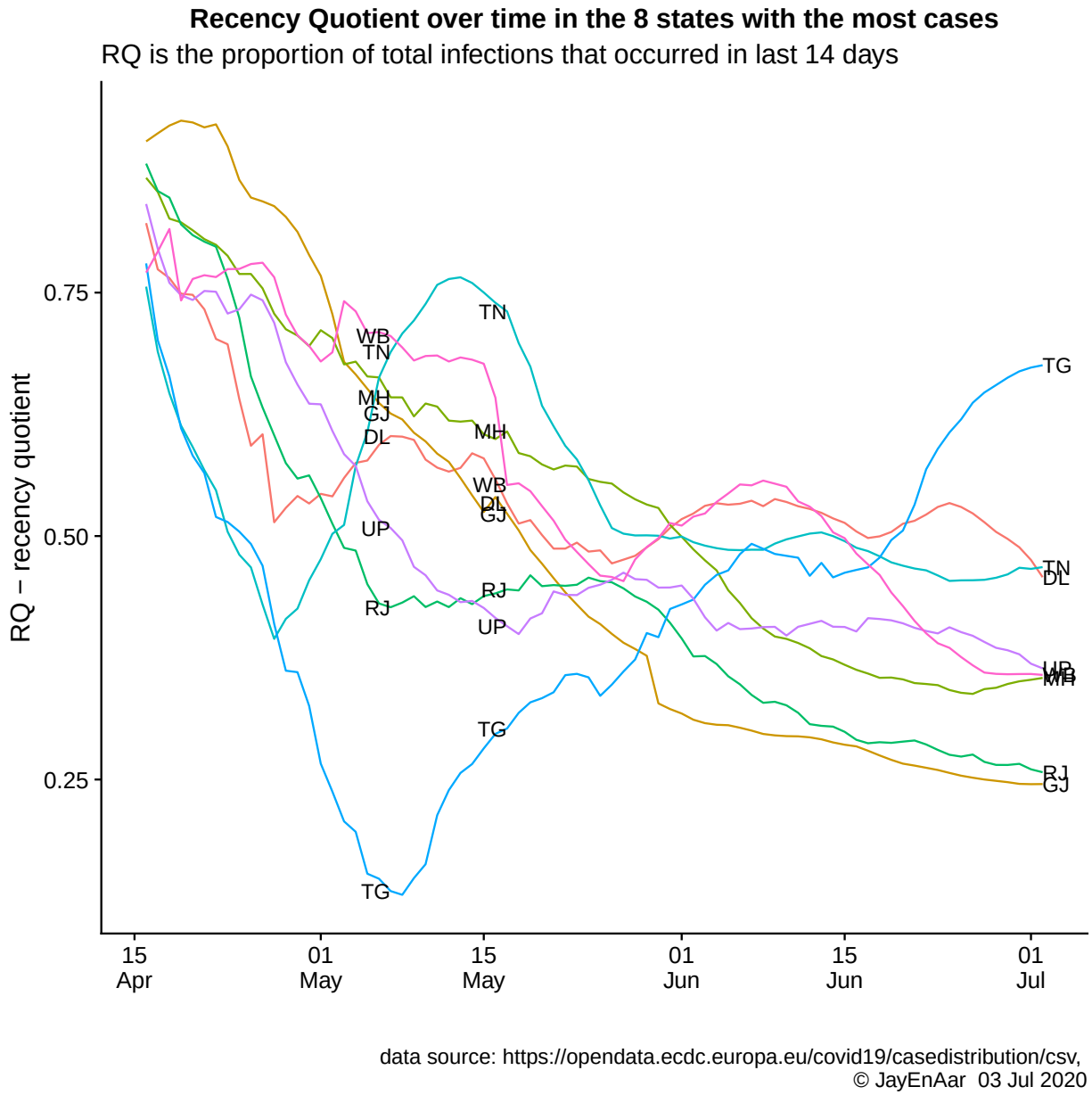
The picture within India varies greatly across the States. Maharashtra is the most affected state by far followed by Tamil Nadu, Delhi and Gujarat. These 4 States make up **65.6** % of the total for India.



9..Mortality variation between States



10. India's epidemic Recency quotient in the States.



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This report will be published peiodically with the latest data available. and will be available on my git hub respository at https://github.com/JammiNRao/Corona/blob/master/Covid19v2.pdf

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End of report