

1.1-exploratory-analysis-mortality

October 20, 2020

1 Imports

```
[1]: import sys
import os

import matplotlib as mpl

project_path = os.path.abspath(os.path.join('../'))

if project_path not in sys.path:
    sys.path.append(f'{project_path}/src/visualizations/')

from covid_data_viz import CovidDataViz
```

2 Setup

```
[2]: mpl.rcParams['figure.figsize'] = (9, 5)
```

3 Goal

My goal is to visualize various aspect of the COVID-19 pandemic. In this notebook we view country level data.

4 Data sources

In this notebook I use data from the following sources:

- <https://github.com/CSSEGISandData/COVID-19> - JHU CSSE COVID-19 Data.
- <https://datahub.io/JohnSnowLabs/country-and-continent-codes-list> - country codes and continents.

5 Data loading

```
[3]: cdv = CovidDataViz()
```

6 Countries with most confirmed cases

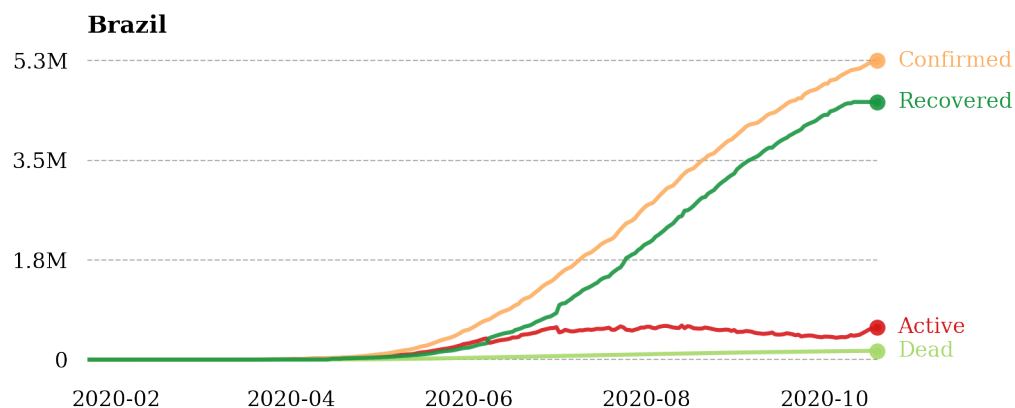
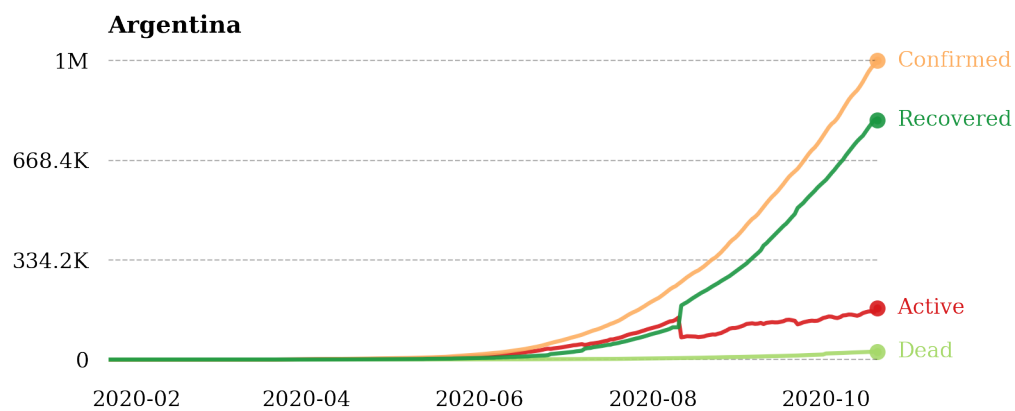
Now we shall “zoom in” on the data and view it from a country level. We examine the countries listed in the previous notebook. Note that the sharp jumps in the time series are probably stem from the fact that the data collection process varies from country to country. However these plots still allow us to gain some insight.

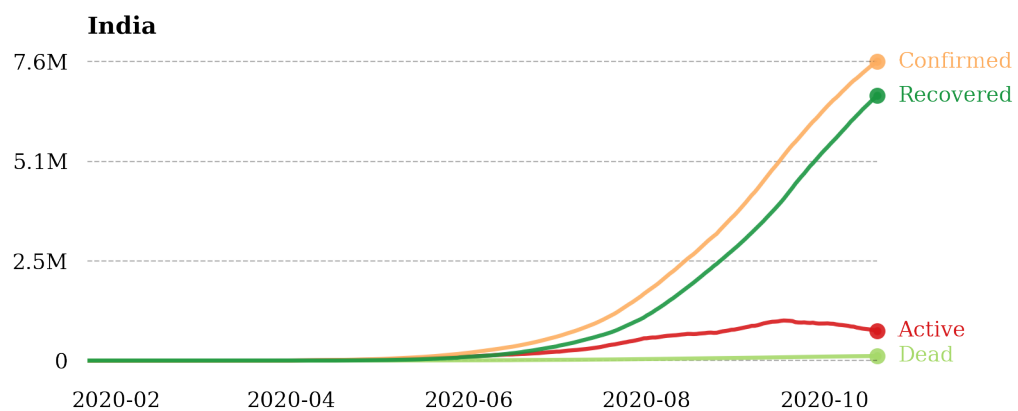
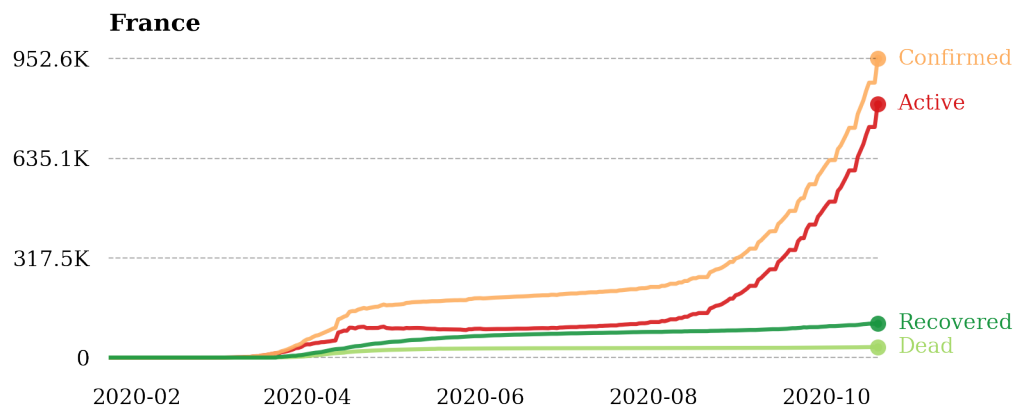
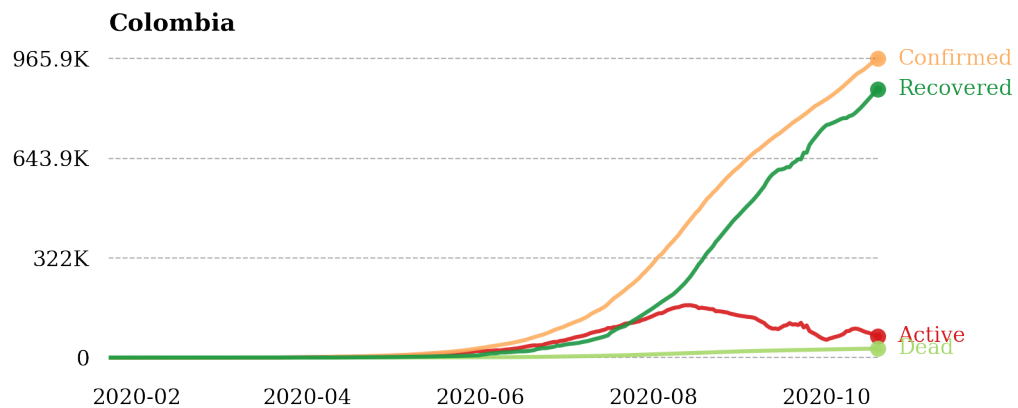
Note that the reason for **Asia**’s exponential growth is in fact **India**. Furthermore observe that confirmed cases are stil growing in **Spain** and **Argentina**.

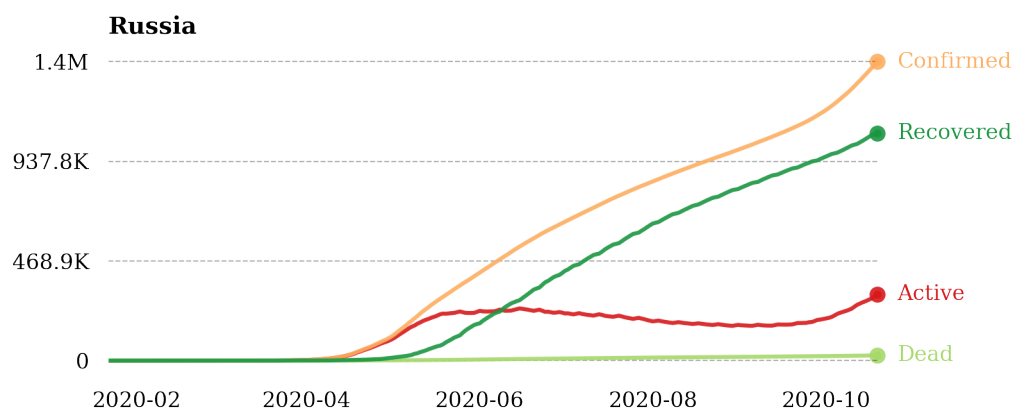
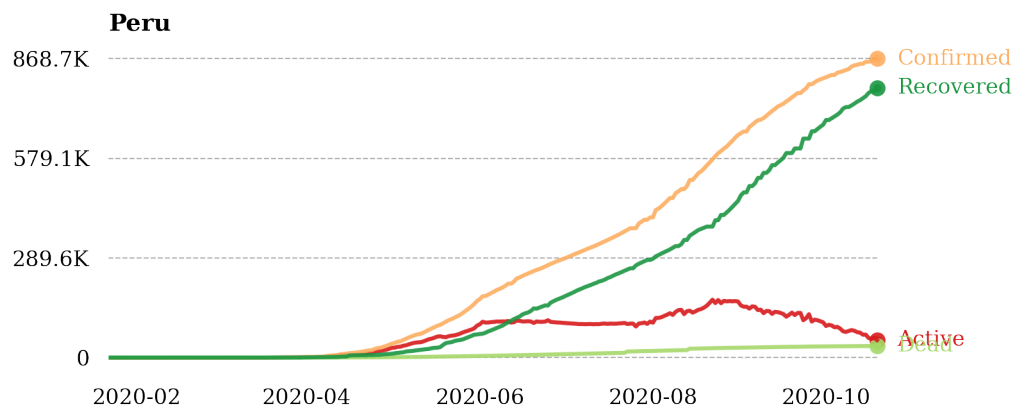
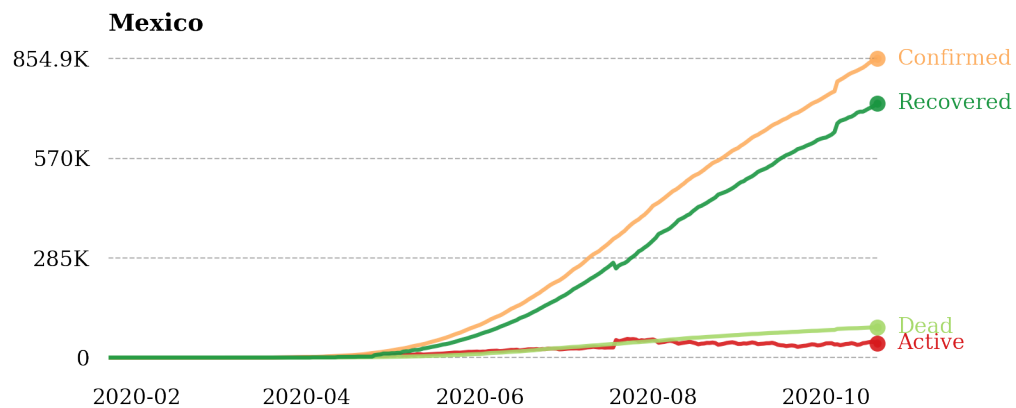
6.1 Cases over time

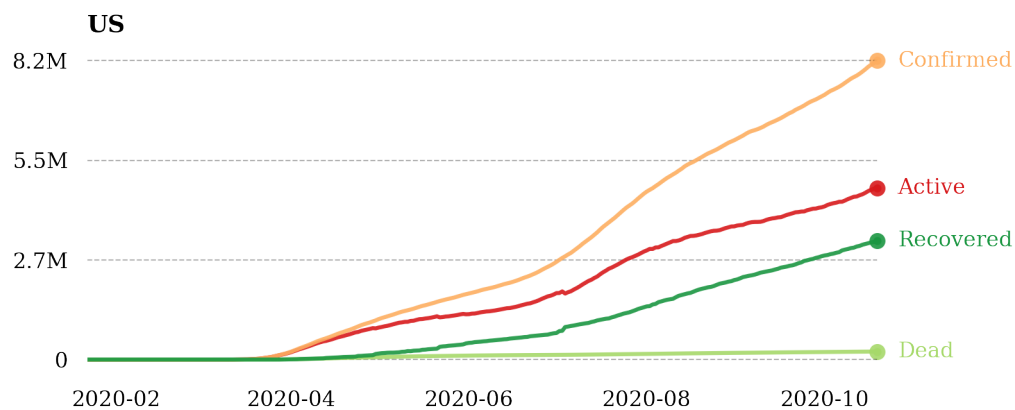
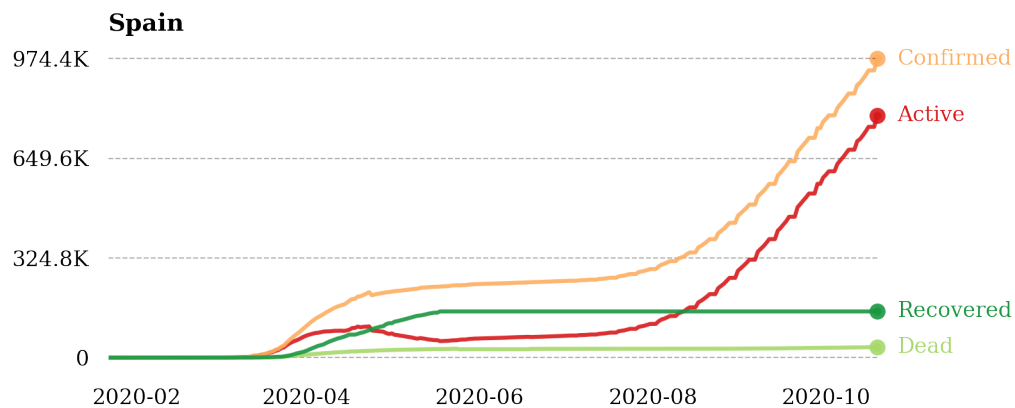
```
[4]: top_confirmed = sorted(cdv.get_most_cases('Confirmed')['Country'])
```

```
[5]: for country in top_confirmed:
      cdv.plot_country_cases(country=country)
```



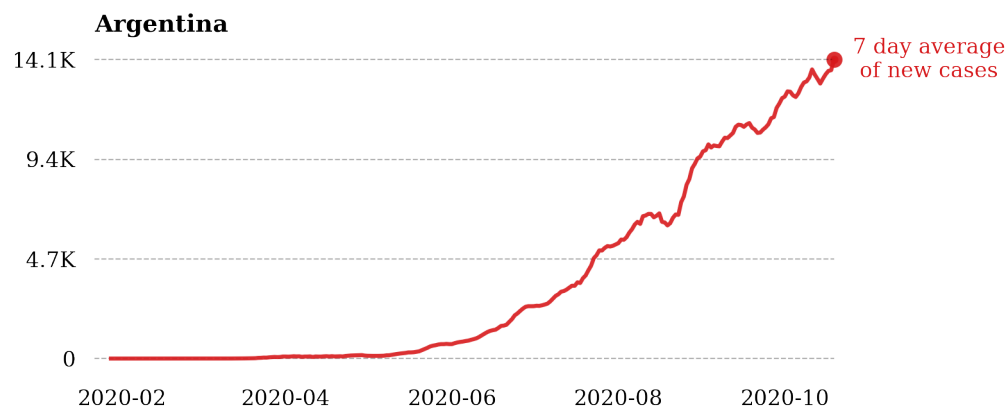


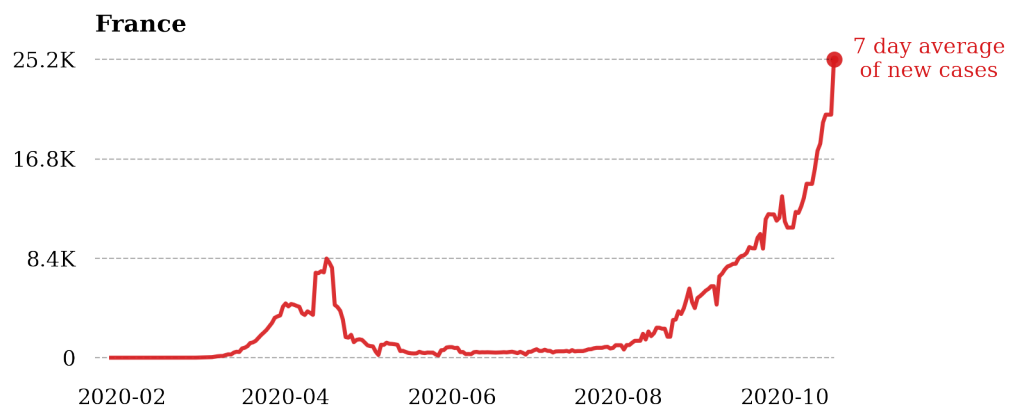
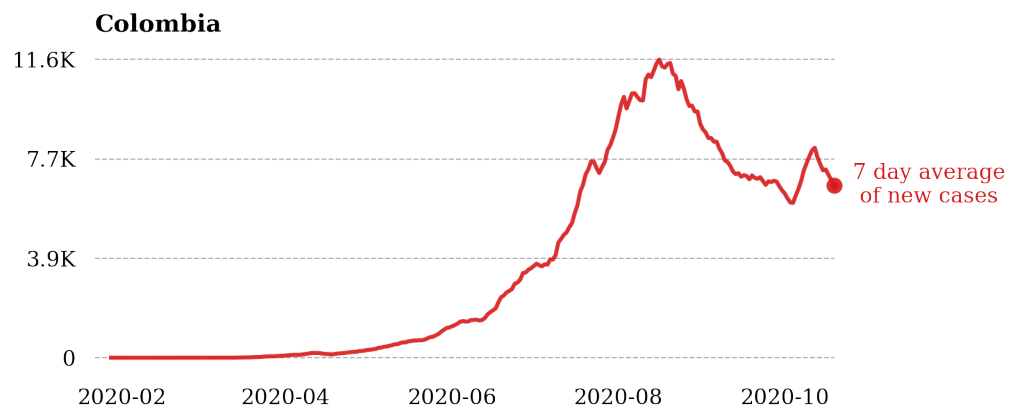
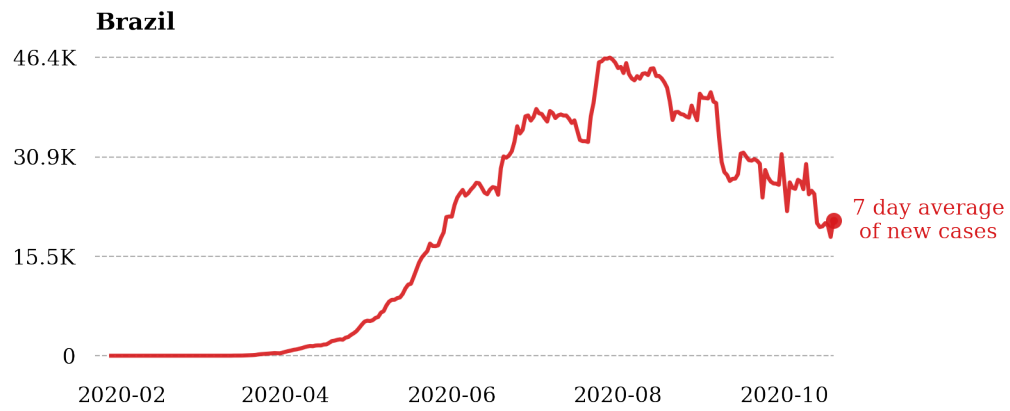


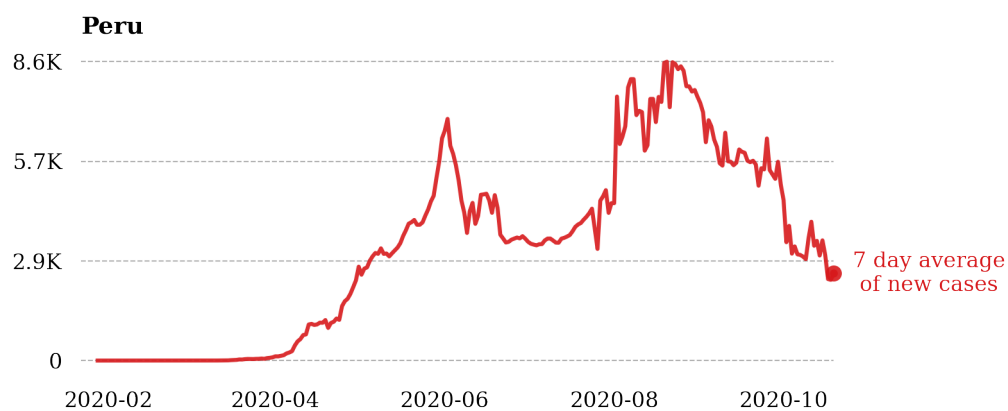
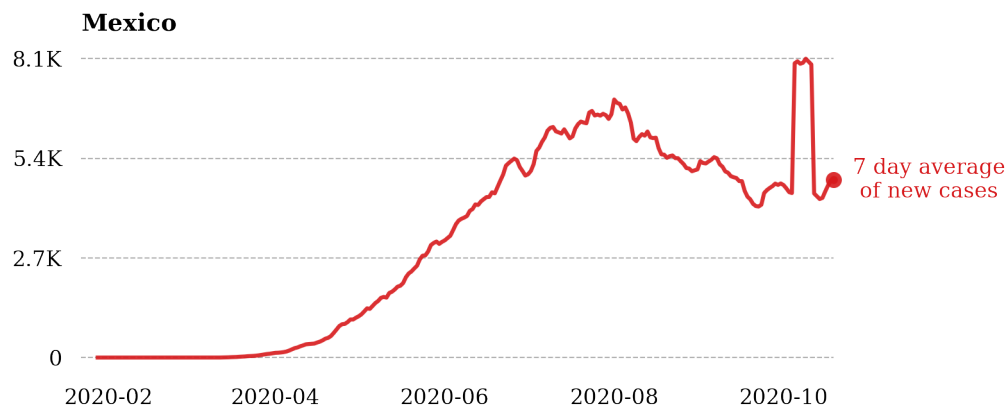
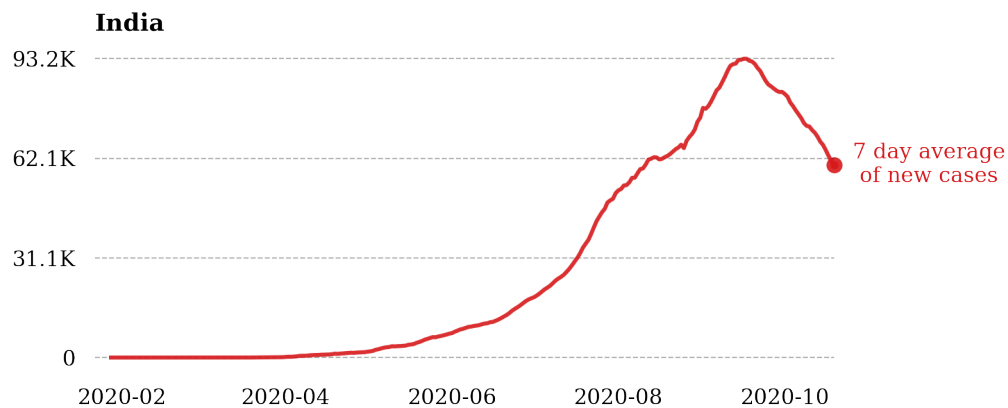


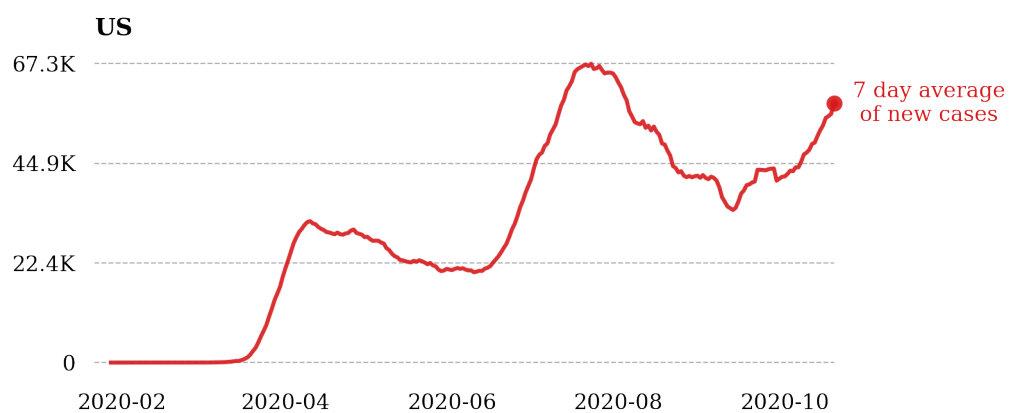
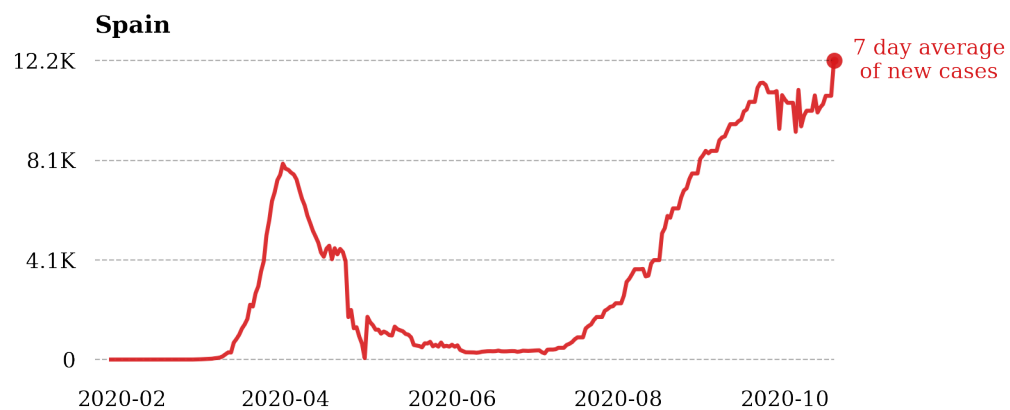
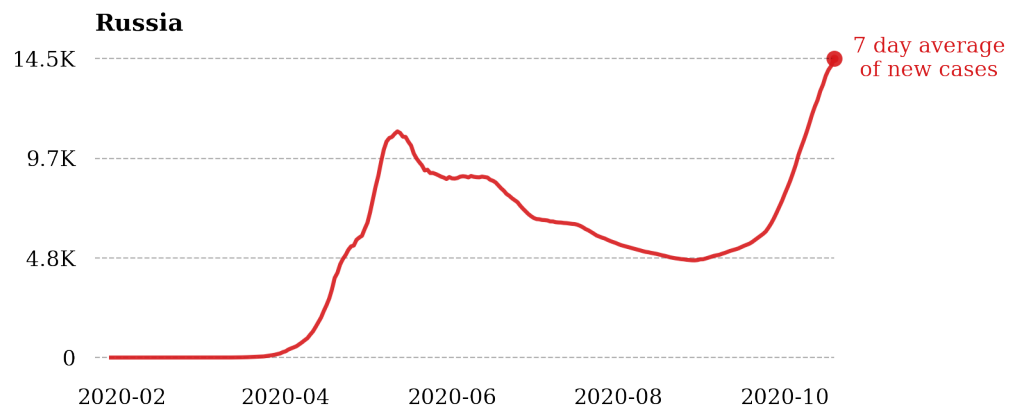
6.2 Change in cases over time

```
[6]: for country in top_confirmed:
      cdv.plot_country_cases_chg(country=country)
```









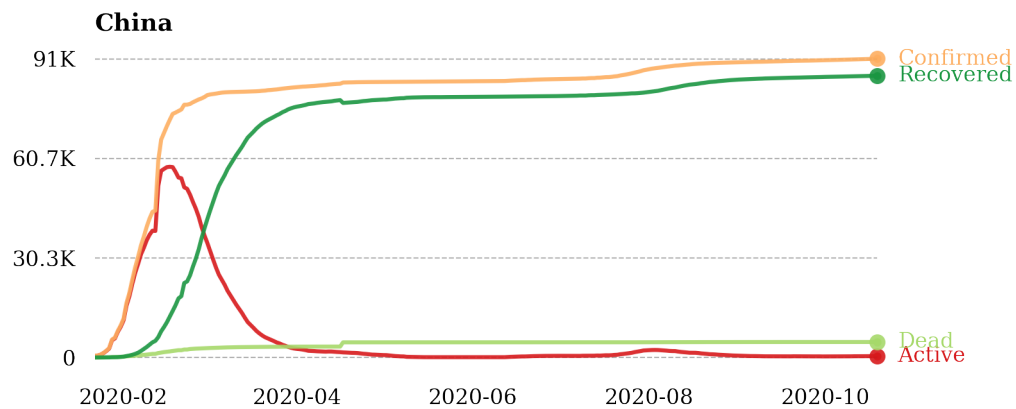
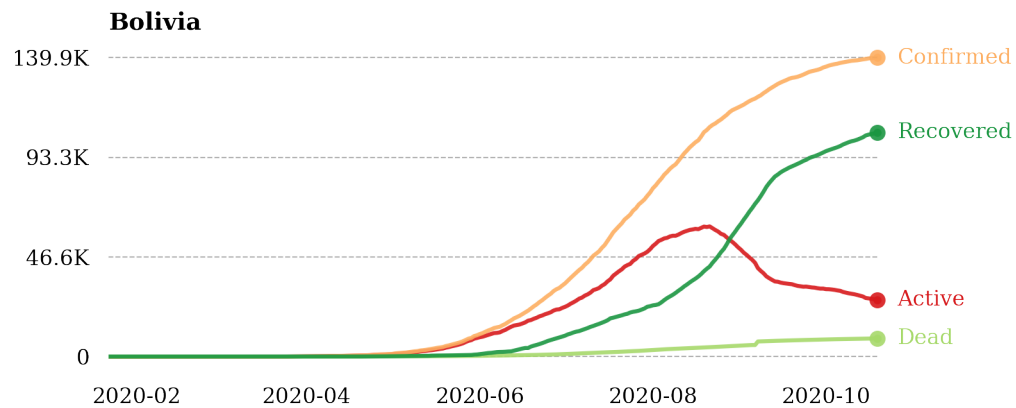
7 Countries with highest mortality rate

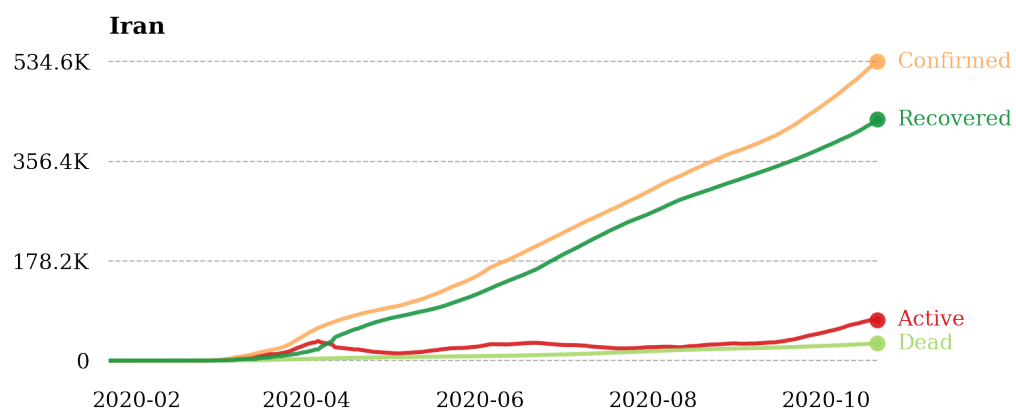
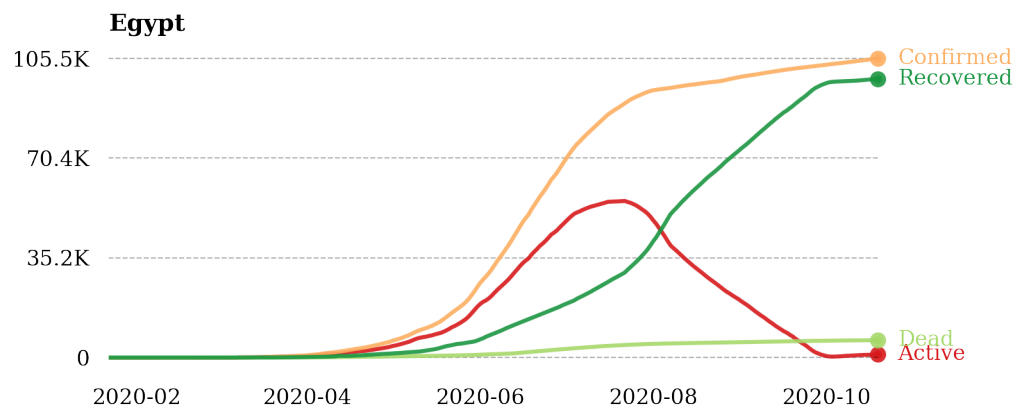
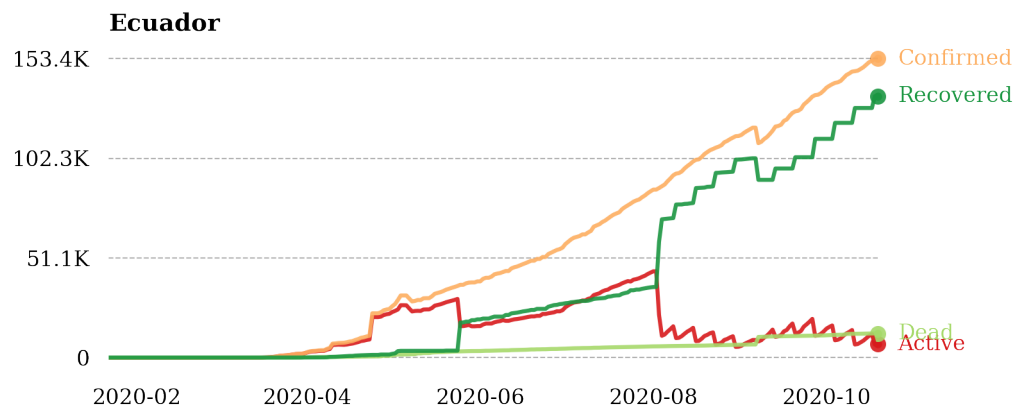
Note the huge surge of cases in Italy. This was the first country in Europe to be seriously hit during the pandemic and it made headlines around the world.

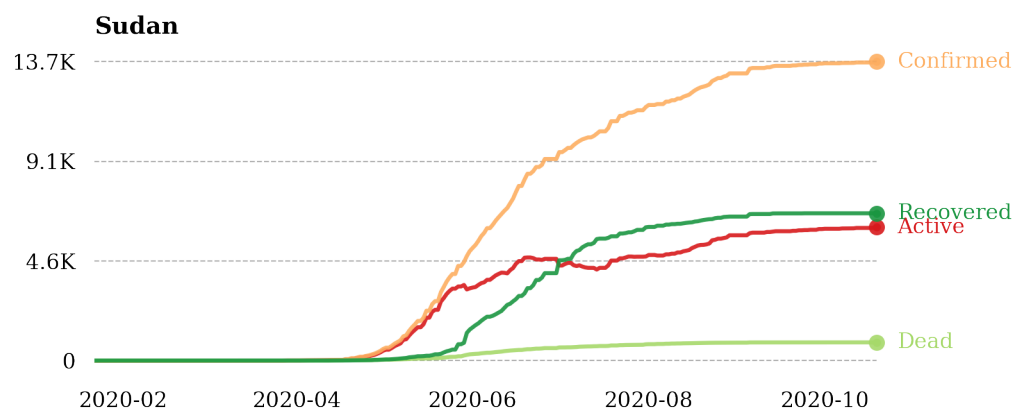
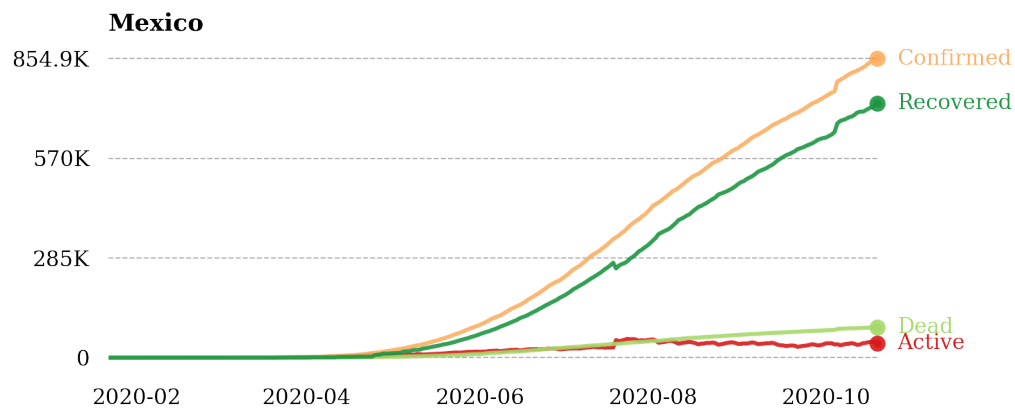
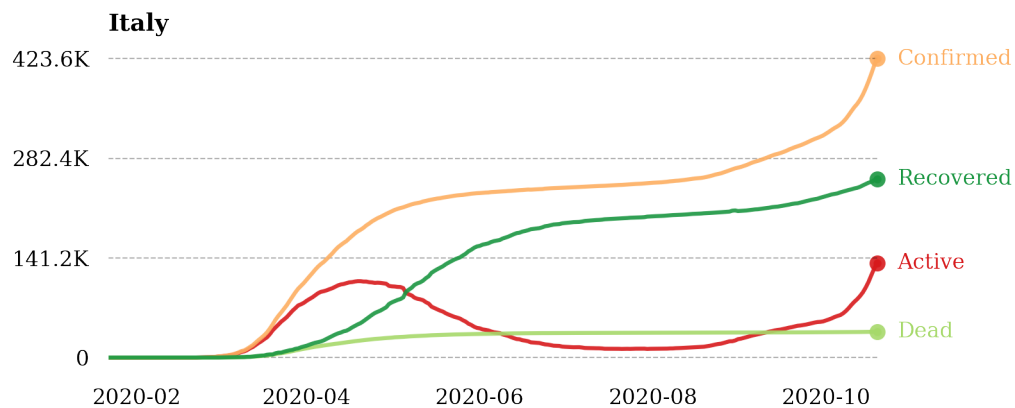
7.1 Cases over time

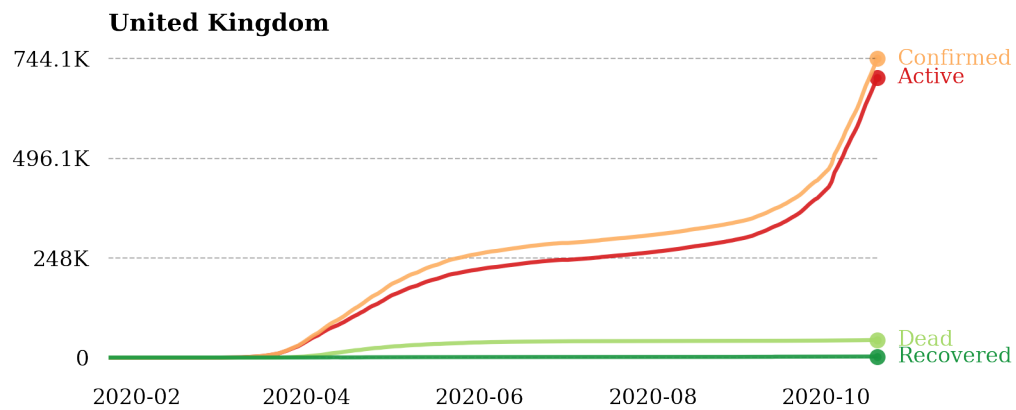
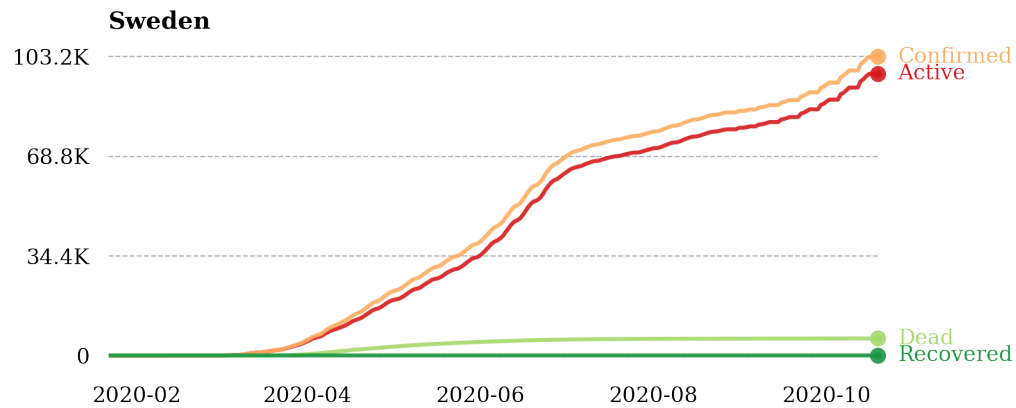
```
[7]: top_mortality = sorted(cdv.get_most_cases('Mortality')['Country'])
```

```
[8]: for country in top_mortality:  
    cdv.plot_country_cases(country)
```





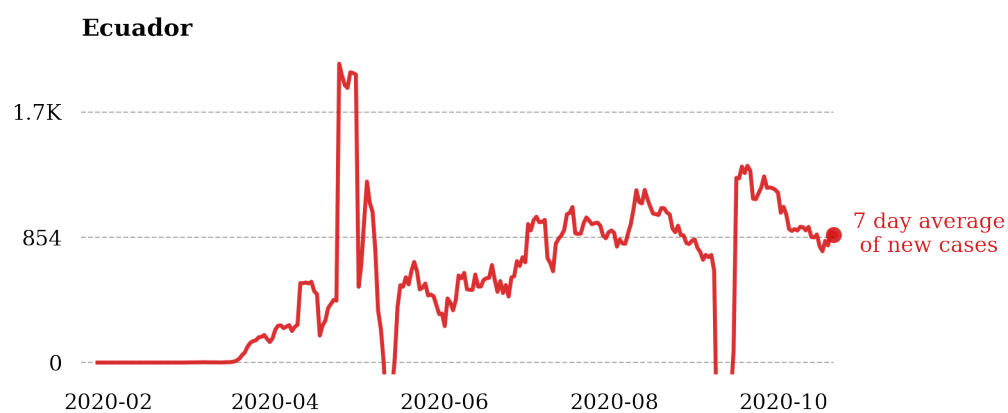
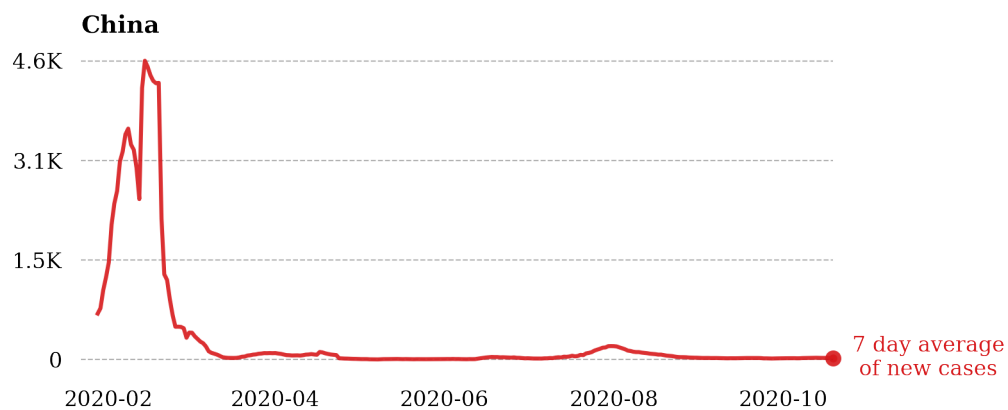
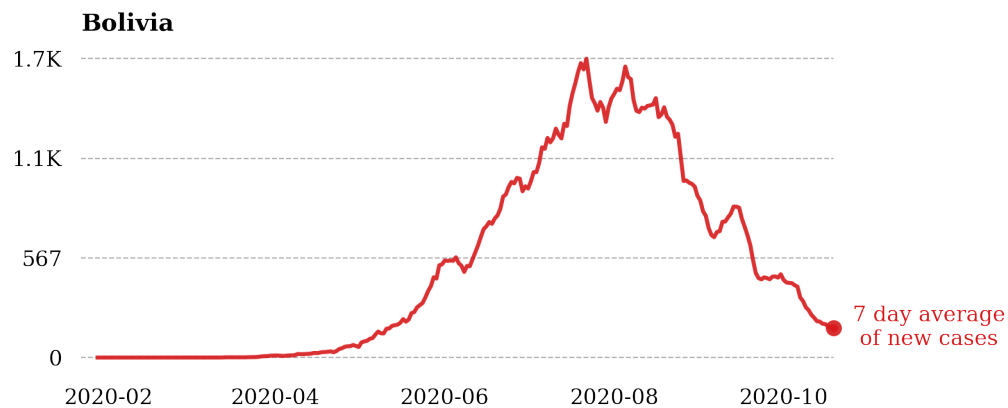


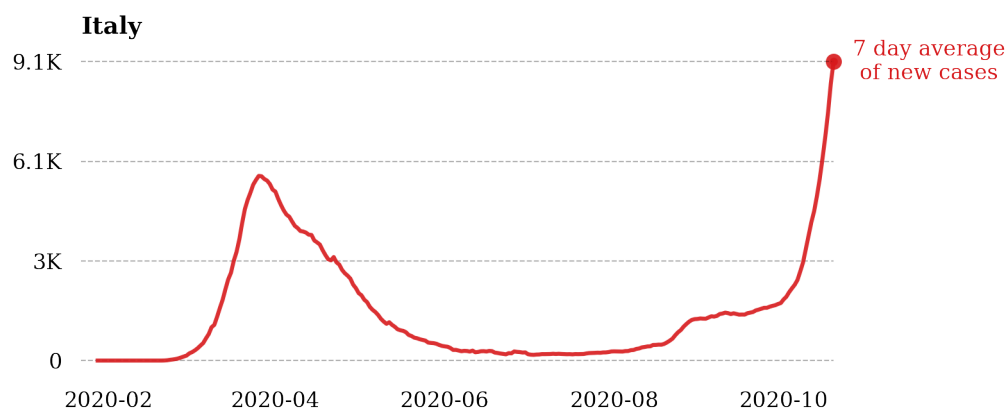
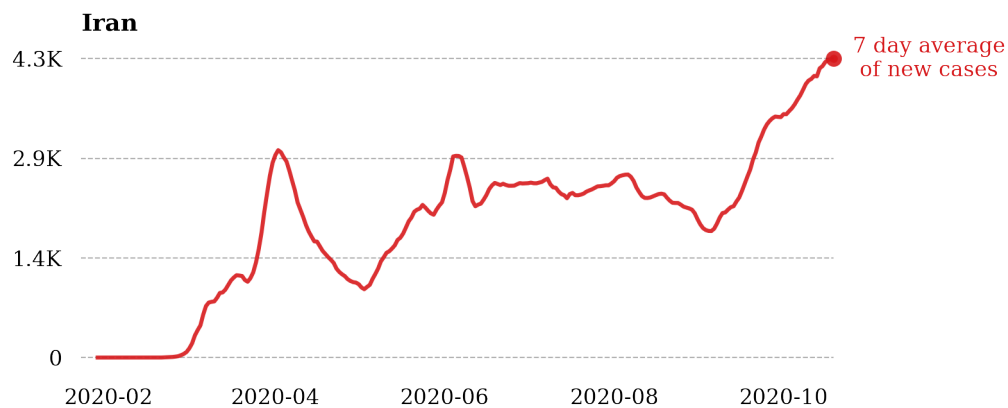
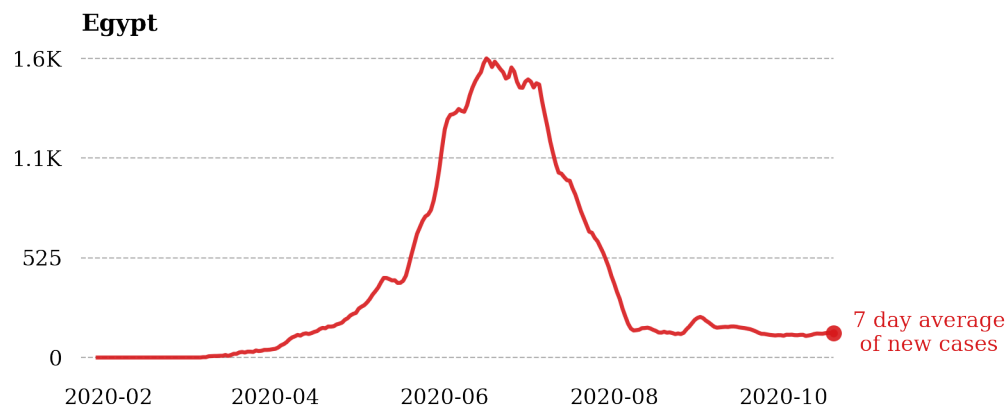


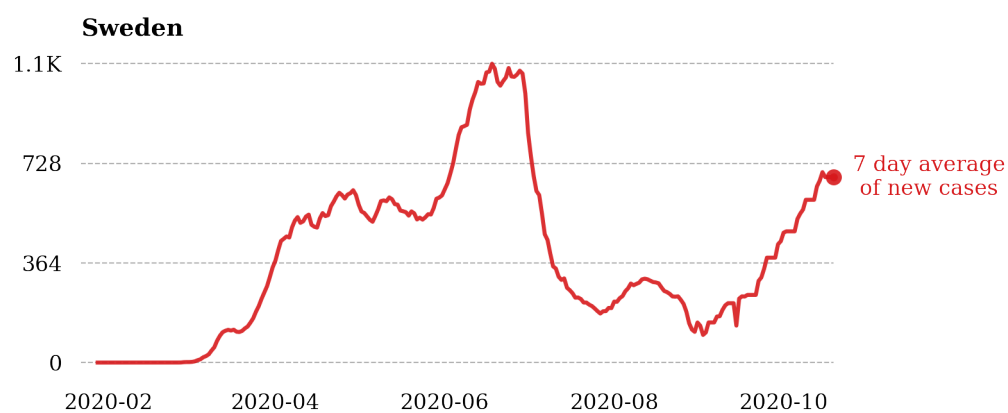
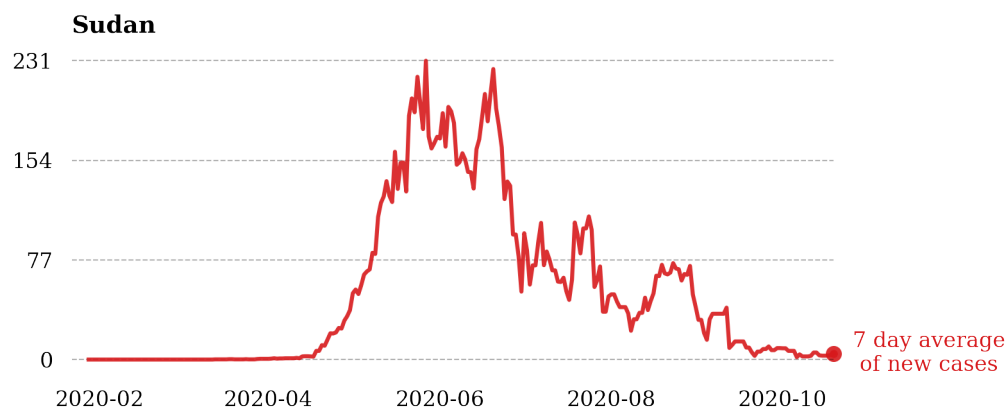
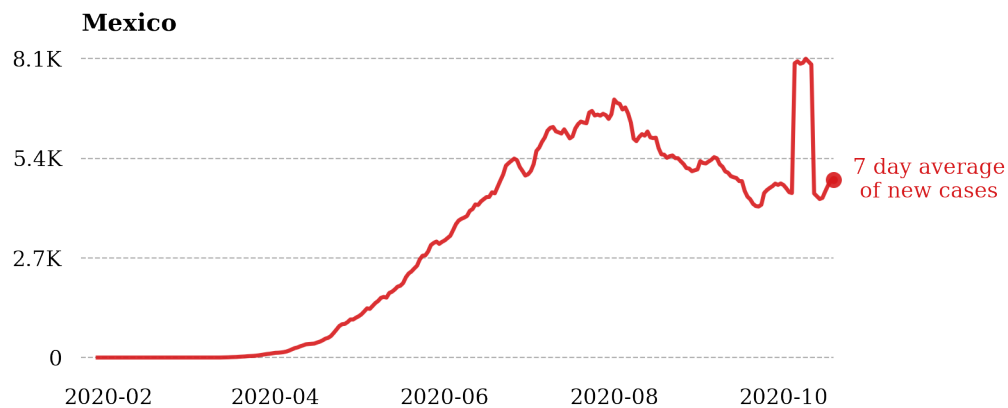
7.2 Change in cases over time

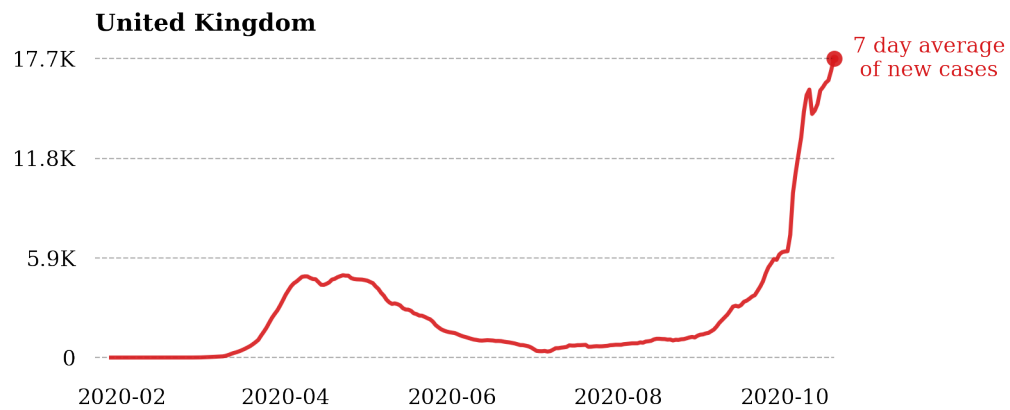
Observe how the timeseries of changes in confirmed cases form different patterns. Some of these plots suggest an existence of a second wave. For example see the plot for **United Kingdom**.

```
[9]: for country in top_mortality:
      cdv.plot_country_cases_chg(country=country)
```









See the next notebook for more.