COVID-19 in Italy: a province-based analysis

Cumulative Cases and Cumulative Rates for a region

Last updated: April 21th, 2020

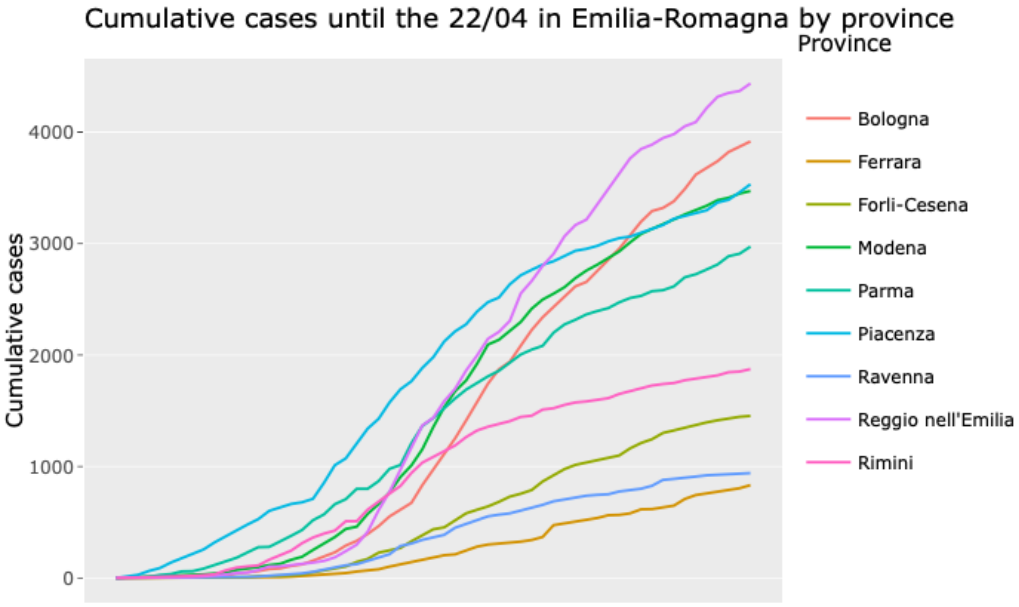
Notes and Example

The following plot shows the provinces inside the same regions. The comparison is made on the basis of the cumulative cases and on the cumulative rates per 100000 inhabitants calculated as:

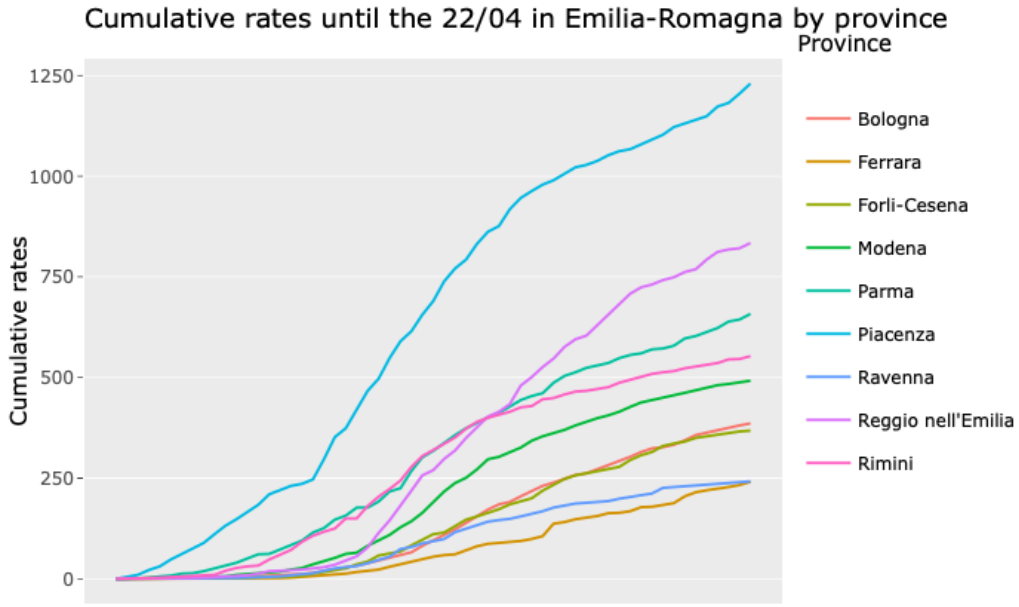
$$\frac{Cases^{1}}{Population^{2}} * 100000 \tag{1}$$

In the example we chose to represent the region Emilia Romagna.
First of all, it can be seen that the trajectory of the provinces within the same region are very different, therefore it is difficult to think of a model that represents the whole region. Considering the absolute values (a), Reggio Emilia, with 4437, would seem to be the most affected city in Emilia Romagna. If you look instead at the cumulative rates (b), Piacenza stands out with a trajectory very different from that of the other cities of the regions. As is known Piacenza is on the border between Emilia Romagna and Lombardy and is very close to Codogno (LO), so the contamination may have been much greater than in the rest of the region. The newspapers wrote that Patient 1 had many contacts with people from Piacenza the weeks before being hospitalized. In addition, in the last week of February the Piacenza hospital welcomed many positive sick patients from the Basso Lodigiano, the initial 'red zone'.

[2]Ministry of Health
[2]ISTAT


Cumulative cases until the 22/04 in Emilia-Romagna by province
Province
Cumulative cases
4000
3000
2000
1000
0
Bologna
Ferrara
Forli-Cesena
Modena
Parma
Piacenza
Ravenna
Reggio nell'Emilia
Rimini

(a)


Cumulative rates until the 22/04 in Emilia-Romagna by province
Province
Cumulative rates
1250
1000
750
500
250
0
Bologna
Ferrara
Forli-Cesena
Modena
Parma
Piacenza
Ravenna
Reggio nell'Emilia
Rimini

(b)