

## COVID-19: the end of lockdown what next?

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The Corona Virus 19 (COVID 19) epidemic is an infectious disease which was declared as a pandemic and hit all the Countries, all over the world, from the beginning of the year 2020<sup>1</sup>.

In Italy the epidemic started in Lombardia Region and then it circulated all over the Country, especially in the North part of the Country with 169.325 confirmed cases and 21.551 deaths on 20.04.2020<sup>2</sup>.

To stop the contagion on March 8 and up to May 3, the Italian Government decided a lockdown for all the Country with mandatory recommendations to stay at home, closures of all types of businesses, schools, universities, cinemas, theatres, suspension of all kinds of events and gatherings, only pharmacies and food stores could stay open<sup>3</sup>.

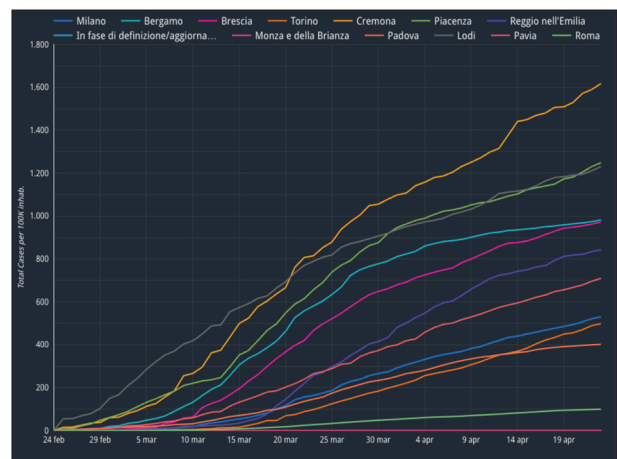
This complete closing slowed down the contagion but now Italy must think about the second phase how to manage the reopening and restarting of all the activities avoiding a restart of the epidemic.

COVID 19 will circulate for long time and drugs or vaccines will be available maybe next year, so it is important to understand how to manage the restarting of the community life and to offer a safe reopening.

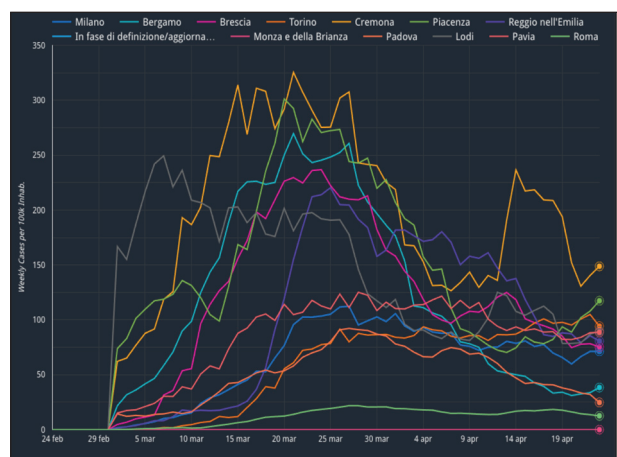
A relevant Covid-19 data dashboard is available at <http://bit.ly/covid19it> and Figures 1,2,3 are obtained here.

The infection notification system is obviously influenced by the number of swabs carried out which can vary in different regions and provinces. An alternative way could have been the analysis of mortality rates by province which, however, leads to similar conclusions regarding the need to activate partially taylor-made procedures in the different realities of our Country<sup>4</sup>.

Looking to the cumulative and weekly rates per 100.000 inhabitants of Figure 1 and 2, respectively, related to Italian provinces which generated major num-



**Figure 1.** Total cases in some Italian provinces in the period 24-2/19-4



**Figure 2** Total cases per week in some Italian provinces in the period 24-2/19-4

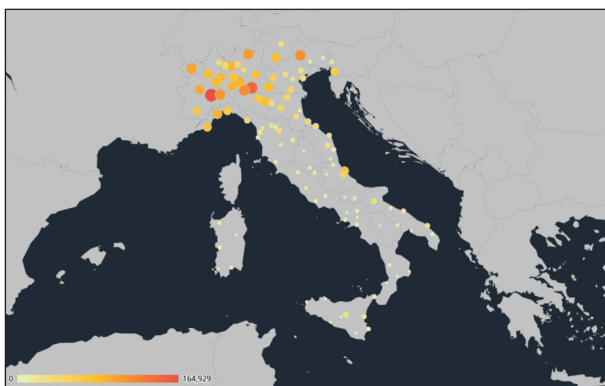
bers of cases, it is clear the still heterogenous behavior of the outbreak. Namely, looking to the weekly rates of Cremona a second peak is evident in mid April, whereas most the considered weekly rate curves are still sustaining high rate of infections, being still far from the full exhaustion of the outbreak.

Moreover, in Figure 3 the bubble plot of the weekly rates per 100.000 inhabitants for full Italy is showing Asti together with Cremona as major case generating areas together with the neighbor provinces Alessandria and Piacenza. Additionally, the mountain provinces of Belluno, Sondrio and Aosta seem to be facing a new growing phase of the outbreak.

This situation prevents the adoption of safe homogeneous strategies across the regions since the need of facing still active local epidemic outbreaks. In particular,

It will be important to maintain some general rules as:

- physical distances of more than 1,5 meter
- to wear masks without valves and gloves always inside and in the presence of crossing other people outside (inability to warrant always more than 1,5 meter physical distances).
- avoid the contact of dresses with surfaces in public transports and remove dresses used at work for immediate separate washing/disinfection.
- beeing correctly informed and formed on the official safety procedures and the use of individual protection devices from the central and local government bodies.
- to measure body temperature at the entrance of closed areas (it must be lower than 37,5°)



**Figure 3.** The bubble plot of the weekly rates per 100.000 inhabitants in Italy

- to ensure disinfection rules in public contests as transports, shopping areas, schools, universities
  - particular care it will be devoted to healthcare setting of all level of intensity because there frail patients will be admitted: healthcare workers will always have to wear all the appropriate Personal Protection Equipment (PPE) and their body temperature must always be checked at the beginning of their work-time.
  - public transports, busses, trains, aircrafts and taxis will ensure the right distance between passengers and this will request a different and more frequent timetable also if it will be costs more and correct disinfection protocols
  - elderly and people with comorbidities or with high risk profiles (e.g. obesity) should adopt extra care going out in different times than other people for example late in the morning to reduce the contacts with other people.
  - in September, schools and universities should ensure large rooms to respect the right distance or they might think to switch between students in the classroom in presence and in smart studying
  - kinder gardens should open in May to allow parents to go to work
  - all the work places which can ensure distance and disinfection activities can open in May all the others when will be able to assure all the safeties requests.
  - it is approaching a good season so cafes and restaurants can use, if they have, their open spaces in which it much more difficult the contagion and easier to respect the right distance.
  - museums, commercial parks gyms swimming pools, and shops should restrict the number of people inside so to maintain the right distance.
  - swimming pools and beach in open air are less critical places but in any case they must have the careful to assure the right distance between people<sup>5</sup>.
- If all these will be properly implemented, also tourism, which is one of the milestone of Italian economics, will restart also if not at the same level of the past seasons.

For the health sector starts a great challenges:

- to magnify the role of general practitioners. Actually, health care systems based on local capabilities and general practitioners without relying heavily on

hospitals were showing the best performances during the outbreak. There is a urgent need of definition of protocols for home management of minor symptomatic cases before the admission to hospitals as a unavoidable step. However, so far, home therapy procedures and protocols were still mainly lacking according to a difficult exploitation of the scientific evidence from the outbreak data.

- to magnify the role of NHS Prevention and Primary care Departments for:
- the epidemiological study the true prevalence of COVID 19 in the population both at the level of the active positive cases for the SARS-CoV-2 and as serum-prevalence for the antibodies of early infected cases.
- the study of optimal screening and diagnostic procedures relying on the combined use of rapid immune and RNA testing with the usual RNA swabs and the serum-prevalence.
- the implementation of systems of contact tracing for the SARS-CoV-2 positive patients before their possible diagnosis and ensuring their containment after.
- to support the home care for all kind of patients.

The Italian National and Regional Health Services (INHS and IRHS) must be ready to face a new possible epidemic spike, which will be better manage because there is the acquired knowledge.

But INHS and IRHS must keep to ensure vaccination and screening programs which in the last two months were suspended.

The lesson which INHS and RHSs must learn is that communication strategy and public health risk management must improve to better face another health threat.

**Conflict of interest:** Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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