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SHORT COMMUNICATION

Italy and Covid-19: the known past and the uncertain present. What can we learn for the future?

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The Past

If the COVID-19 pandemic has shaken the world, then Italy is one of the hardest hit countries. The notification of the spread started at the end of February 2020: a few cases of severe pneumonia caused by SARS-CoV-2 were detected in Northern Italy, in the Lombardia and Veneto Regions. Soon after, other clusters were identified in the same area. The Italian Government, on 23 February, issued a governmental ordinance to contain and manage the spread [1]: a ban on entering or exiting a few small towns, the interruption of public events and shows, and the closure of schools and universities; moreover, a shutdown was imposed on stores, offices, and several other commercial and industrial activities. The government also imposed measures such as social distancing, quarantine, and self-isolation. However, just 2 days later, on 25 February, there were already 322 cases [2]. The National Healthcare System (NHS), in particular the emergency departments (ED), subintensive care units (SICU), and intensive care units (ICU), in Lombardia were overwhelmed. Also, in other regions in Northern Italy the situation was increasingly becoming more serious [3]. In order to care for the many patients requiring hospitalization and the intensive care unit, elective surgeries and procedures were cancelled, and most of the operating rooms were turned into ICUs. On the same day, and on the following days, the Italian Government imposed the most drastic curbs deployed in Europe at that time to contain the spread of the virus, telling Italians to stay at home unless for emergencies or essential work-related purposes, until the lockdown itself, on 9 March [4].

The Present

On 4 May, Italy entered into the, so-called, “Phase 2” of the lockdown. A number of businesses and economical activities were able to restart; however, other restrictions were still applied, for instance, the possibility of meeting only family members, social activities are banned, and restaurants are closed (in some regions, however, the reopening of restaurants is expected from May 18). The NHS is planning to return to normal daily activities.

As of 14 May, there are a little over 221,000 cases of COVID-19. A confirmed case is defined as being any person with a laboratory confirmation of the virus causing the COVID-19 infection, irrespective of clinical signs or symptoms. In Italy, 29,692 SARS-CoV-2 patients have died. The mean age of patients who died from the SARS-CoV-2 infection was 80 years (median 81, range 0–100, InterQuartile Range (IQR) 74–87). Women demonstrate a lower mortality than men (39.8%). The cause of death, in 96.8% of the cases, was from acute respiratory distress syndrome. The average number of pathologies observed in patients who died is around 3.2. Moreover, from the overall Italian population, 74 patients below the age of 40 died, out of which 53 patients had serious pre-existing pathologies (cardiovascular, renal, psychiatric pathologies, diabetes, obesity) and for 9 patients no clinical information is available [5].

Lesson Learned?

Learning is critical. In order to understand the situation it is important to analyze the spread and management of COVID-19 in Italy in accordance with the phases of the disaster cycle. And if at this moment the data are incomplete and drawing a conclusion is very difficult, some important observations arise.

Mitigation and preparedness phases

The Ministry of Health in Italy, in 2006, published the “National Plan for preparedness and response to an influenza pandemic” [6]. And since 2006 it had not been updated [7].

What about the Italian NHS in comparison with other countries, such as Germany or South Korea? Just a few numbers. Before the COVID-19 spread started: (a) the “number of hospital beds per 1,000 people” was 3.2 in Italy, 8.0 in Germany, and 12.2 in South Korea; (b) the overall number of ventilators was around 5,000 in Italy

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(population: 60 million), 25,000 in Germany (83 million), and almost 10,000 in South Korea (51 million) [8].

And, almost certainly, the overall number of physicians, nurses, and every healthcare professional will be correlated to these numbers. These data underline how Italy, in January 2020, if it needed to surge its resources capacity by 50%, as required by an event such as COVID-19 then, had lesser hospital beds and/or ventilators during the surge than Germany or South Korea during their daily activity.

Response phase

The Italian NHS is decentralized [9]; however, differences from one region to another are not considerable. But these did become substantial in the response to COVID-19. The spread started in Lombardia and Veneto, neighboring regions. The Veneto approach, from the beginning, was population-wide testing, replicating the South Korean concept. Testing to detect and monitor the infection spread in a population, to identify who is infected, to isolate those individuals, to provide contact-tracing to break chains of transmission, and to arrange quarantine. Lombardia did not start a population-wide testing program. And also taking into consideration that the population (P) and the population density (PD) between the two regions is different (Lombardia p = 10 million, PD = 421/km^2; and Veneto p = 4.9 million, PD = 267/km^2), the discrepancy between the deceased SARS-CoV-2 positive patients is enormous: Lombardia 15,185 and Veneto 1,746 [5].

Data from Italy can reveal another important concept. It seems that regional healthcare systems that are using and have strongly implemented the community system approach to treat COVID-19 patients, with a response entrusted to general practitioners (GPs) and emergency medical services (EMSs), have better results than a more hospital-centralized system to treat patients with the infection. The rationale behind this is that if testing is useful to detect infected individuals, the treatment is started immediately, at home, when the symptoms appear, even if they are only slight and tolerable. This avoids that, after a few days, the situation rapidly deteriorates and the patient needs the SICU or ICU. A strong community system in Italy is already in place, but it just needs to be implemented where these programs have not yet been started up. In fact, in Italy, there is a strong network of GPs, and the EMS is a three-tier system that also includes the Advanced Life Support (ALS) team with an emergency physician in the ambulances.

Another important point to consider is how the lockdown has impacted other acute and chronic diseases. It is worth noting that the Italian Society of Cardiologists (SIC) has reported that the number of myocardial infarctions admitted to the hospital has dropped by at least 50% in comparison to the same time period last year.

Recovery phase

The Italian perspective is really serious. It is difficult to foresee accurately, but COVID-19 has engendered a strong impact on the overall health of the population and on the NHS. It is estimated that chronic diseases have been undertreated in this period; for instance, hospital visits and preventive medicine have not been taking place. Therefore, in the future, it is very likely that there will be a significant increase in diseases, complications, and deaths because patients had not sought medical attention during the pandemic.

Moreover, there will be a great psychological impact, in particular, on young people and workers, including increased rates of anxiety, depression, and posttraumatic stress disorder [10].

Conclusion

Italy is facing the deepest crisis since World War II: the coronavirus spread has severely hit the population and the NHS. Considering that it is very difficult to make decisions in a time when an event strikes, Italy is a case study which can be useful in understanding how strategies and decisions change the narrative of the events, especially when these develop quickly and, more important, how much it is important to start planning effectively.

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