Italy's Response to Modern Era Pandemic Coronavirus Disease - 2019

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Abstract: An outbreak of 2019 novel coronavirus disease (COVID-19) in Wuhan, China has spread quickly worldwide. Here, we report results of a descriptive, exploratory analysis of all cases diagnosed as of February 15, 2020 in Italy. All COVID-19 cases reported through February 15, 2020 were extracted from Worldometers Information System. Analysis included: 1. Introduction 2.Symptoms 3 Covid-19 in Italy. 4 Italy's Turn-Around. 5 Stats and graph 6. Lesson to Learn.

INTRODUCTION

The COVID-19 pandemic, also known as the coronavirus pandemic, is an ongoing pandemic of coronavirus disease 2019 (COVID -19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in December 2019 in Wuhan, China.The World Health Organization declared the outbreak a Public Health Emergency of International Concern on 30 January 2020 and a pandemic on 11 March. As of 7 September 2020, more than 27.2 million cases have been reported in more than 188 countries and territories, resulting in more than 889,000 deaths; more than 18.1 million people have recovered.

HOW COVID-19 SPREADS

COVID-19 is a new disease, and many of the details of its spread are still under investigation. It spreads easily between people more easily than influenza but not as easily as measles. People are most infectious when they show symptoms (even mild or non-specific symptoms), but may be infectious for up to two days before symptoms appear (pre-symptomatic transmission). They remain infectious for an estimated seven to twelve days in moderate cases and an average of two weeks in severe cases. People can also transmit the virus without showing any symptom (asymptomatic transmission), but it is unclear how often this happens. A June 2020 review found that 40–45% of infected people are asymptomatic.

COVID-19 spreads primarily when people are in close contact and one person inhales small droplets produced by an infected person (symptomatic or not) coughing, sneezing, talking, or singing. The WHO recommends 1 metre (3 ft) of social distance; the US Centers for Disease Control and Prevention (CDC) recommends 2 metres (6 ft).

Transmission may also occur through aerosols, smaller droplets that are able to stay suspended in the air for longer periods of time. Experimental results show the virus can survive in aerosol for up to three hours. Some outbreaks have also been reported in crowded and inadequately ventilated indoor locations where infected persons spend long periods of time (such as restaurants and nightclubs). Aerosol transmission in such locations has not been ruled out. Some medical procedures performed on COVID-19 patients in health facilities can generate those smaller droplets, and result in the virus being transmitted more easily than normal.

SYMPTOMS OF COVID-19

.The usual incubation period (the time between infection and symptom onset) ranges from one to 14 days, and is most commonly five days. Some infected people have no symptoms, known as asymptomatic or presymptomatic carriers; transmission from such a carrier is considered possible. As at 6 April, estimates of the asymptomatic ratio range widely from 5 to 80 percent.

Symptoms of COVID-19 can be relatively non-specific; the two most common symptoms are fever (88 percent) and dry cough (68 percent). Less common symptoms include fatigue, respiratory sputum production (phlegm), loss of the sense of smell, loss of taste, shortness of breath, muscle and joint pain, sore throat, headache, chills, vomiting, coughing out blood, diarrhea, and rash.

Among those who develop symptoms, approximately one in five may become more seriously ill and have difficulty breathing.^[6] Emergency symptoms include difficulty breathing, persistent chest pain or pressure, sudden confusion, difficulty waking, and bluish face or lips; immediate medical attention is advised if these symptoms are present. Further development of the disease can lead to complications including pneumonia, acute respiratory distress syndrome, sepsis, septic shock, and kidney failure.

COVID-19 IN ITALY

The COVID-19 pandemic in Italy is part of the pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The virus was first confirmed to have spread to Italy on 31 January 2020, when two Chinese tourists in Rome tested positive for the virus. One week later an Italian man repatriated back to Italy from the city of Wuhan, China, was hospitalised and confirmed as the third case in Italy. A cluster of cases was later detected, starting with 16 confirmed cases in Lombardy on 21 February, and 60 additional cases and the first deaths on 22 February. By the beginning of March, the virus had spread to all regions of Italy. On 6 March 2020, the Italian College of Anesthesia, Analgesia, Resuscitation

and Intensive Care (SIAARTI) published medical ethics recommendations regarding triage protocols that might need to be employed.

On 31 January, the Italian government suspended all flights to and from China and declared a state of emergency. In February, eleven municipalities in northern Italy were identified as the centres of the two main Italian clusters and placed under quarantine. The majority of positive cases in other regions traced back to these two clusters. On 8 March 2020, Prime Minister Giuseppe Conte expanded the quarantine to all of Lombardy and 14 other northern provinces, and on the following day to all of Italy, placing more than 60 million people in quarantine. On 11 March 2020, Conte prohibited nearly all commercial activity except for supermarkets and pharmacies. On 21 March, the Italian government closed all non-essential businesses and industries, and restricted movement of people.

As of 6 September 2020, Italy has 32,078 active cases; during the peak of the pandemic, Italy's number of active cases was one of the highest in the world.Overall, there have been 277,634 confirmed cases and 35,542 deaths (a rate of 588 deaths per million population) while there have been 210,015 recoveries or dismissals. By 6 September, Italy had tested about 5,538,000 people. Due to the limited number of tests performed, the real number of infected people in Italy, as in other countries, is estimated to be higher than the official count. In May 2020, the Italian National Institute of Statistics (Istat) estimated 11,000 more deaths for COVID-19 in Italy than the confirmed ones, establishing the actual number of deaths around 45,000–50,000; while in August 2020, the Ministry of Health estimated that nearly 1.5 million Italians have been infected by SARS-CoV-2 since the beginning of the pandemic.

How Italy turned around its coronavirus calamity

When the coronavirus erupted in the West, Italy was the nightmarish epicenter, a place to avoid at all costs and a shorthand in the United States and much of Europe for uncontrolled contagion..Fast forward a few months, and the United States has suffered tens of thousands more deaths than any country in the world. European states that once looked smugly at Italy are facing new flare-ups. Some are imposing fresh restrictions and weighing whether to lock down again. Britain announced a delay to a planned easing of measures in England as the infection rate there rose. Even Germany, lauded for its efficient response and rigorous contact tracing, has warned that lax behavior is prompting a surge in cases. And Italy? Its hospitals are basically empty of COVID-19 patients. Daily deaths attributed to the virus in Lombardy, the northern region that bore the brunt of the pandemic, hover around zero. The number of new daily cases has plummeted to "one of the lowest in Europe and the world," How Italy has gone from being a global pariah to a model — however imperfect — of viral containment holds fresh lessons for the rest of the world, including the United States, where the virus, never under control, now rages across the country. After a stumbling start, Italy has consolidated, or at least maintained, the rewards of a tough nationwide lockdown through a mix of vigilance and painfully gained medical expertise.Its government has been guided by scientific and technical committees. Local doctors, hospitals and health officials collect more than 20 indicators on the virus daily and send them to regional authorities, who then forward them to the National Institute of Health. The result is a weekly X-ray of the country's health, upon which policy decisions are based. That is a long way from the state of panic and near collapse that hit Italy in March. There is no doubt that the privations of the lockdown were economically costly. For three months, businesses and restaurants were ordered closed, movement was highly restricted - even between regions, towns and streets — and tourism ground to a halt. Italy is expected to lose about 10% of its gross domestic product this year. But at a certain point, as the virus threatened to spread uncontrollably, Italian officials decided to put lives ahead of the economy. Italy's initial isolation by European neighbors at the outset of the crisis, when masks and ventilators were hardly pouring in from across the borders, may actually have helped, Guerra, the WHO expert, said.

Italy first quarantined towns, and then the Lombardy region in the north, and then the entire peninsula and its islands, despite the near absence of the virus in much of central and southern Italy. That not only prevented workers in the industrial north from returning home in the much more vulnerable south, but it also fostered and forced a unified national response. During the lockdown, movement was strictly limited between regions and towns and even city blocks, and people had to fill in "auto certification" forms to prove that they needed to go outside for work, health or "other necessities." Masks and social distancing regulations were enforced by some regional authorities with steep fines. Generally, if grudgingly, the rules were followed. As searing scenes of human suffering, empty streets and the heavy toll on an elderly generation of northern Italians spread, the transmission rate of the virus quickly decreased, and the curve flattened, as opposed to other European countries, such as Sweden, which pursued an alternative to locking down. That the initial outbreak was localized in the overwhelmed hospitals created enormous stress, but it also enabled doctors and nurses to expedite contact tracing. Then the country reopened, gradually, expanding liberties at two-week intervals to respond to the virus's incubation period. The lockdown eventually had a secondary effect of decreasing the volume of virus circulating in society, and thus reducing the probability of coming in contact with someone who had it. At the end of the lockdown, the virus circulation had steeply fallen off, and in some central and southern regions, there were hardly any chains of transmission at all. Some Italian doctors said they believe that the virus is now behaving differently in Italy. Matteo Bassetti, an infectious disease doctor in the northwestern city of Genoa, said that during the height of the crisis, his hospital was inundated with 500 COVID-19 cases at one time. Now, he said, his intensive care unit, with 50 beds, has no coronavirus patients, and the 60-bed COVID-19 unit built specially for the crisis is empty. Most health experts said that the virus still loomed, and as the government considers a new decree to reopen nightclubs, festivals and cruise ship travel, many of them have implored the country not to let down its guard." Even if the situation is better than in other countries, we should continue to be very prudent," said Rezza of the National Institute of Health, adding that he thought the question of what Italy had done right was better posed "at the end of the epidemic.""We cannot exclude that we will have outbreaks in Italy in the next few days," he said. "Maybe it's just a matter of time."

STATISTICAL AND GRAPHICAL REPRESENTATION

Overall Statistical Data of Coronavirus as on 7th September 2020

WORLD / COUNTRIES / ITALY	
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Coronavirus Cases: 278,784	
Deaths: 35,553	
Recovered: 210,238	

Daily new cases in Italy from 15th February till 7th September 2020

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Newly Infected vs Newly Recovered In Italy from 15th February till 7th September 2020



Outcome of Cases (Recovery or Death) in Italy from 15th February till 7th September 2020

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Overview of Coronavirus in Italy in Numbers.

The following data is as on 7th September 2020

- Total Confirmed cases are 278,784 plus 1,108 new cases.
- Total Recovered cases are 210,238
- Total Deaths cases are 35,553 plus 12 new deaths.
- Critical cases treated in ICU are 142 i.e. 0.1% of total cases.
- Daily Cases Receiving Treatment are 32993 i.e. 11.8 % of total cases
- Daily confirmed cases are 4612 per million population.
- Fatality rate is 12.8% of the total cases.
- Recovery Rate is 75.4% of the total cases.

Lesson From Italy's Response To Coronavirus

As policymakers around the world struggle to combat the rapidly escalating Covid-19 pandemic, they find themselves in uncharted territory. Much has been written about the practices and policies used in countries such as China, South Korea, Singapore, and Taiwan to stifle the pandemic. Unfortunately, throughout much of Europe and the United States, it is already too late to contain Covid-19 in its infancy, and policymakers are struggling to keep up with the spreading pandemic. In doing so, however, they are repeating many of the errors made early on in Italy, where the pandemic has turned into a disaster. In a matter of weeks (from February 21 to March 22), Italy went from the discovery of the first official Covid-19 case to a government decree that essentially prohibited all movements of people within the whole territory, and the closure of all non-essential business activities. Within this very short time period, the country has been hit by nothing short of a tsunami of unprecedented force, punctuated by an incessant stream of deaths. It is unquestionably Italy's biggest crisis since World War II. Some aspects of this crisis — starting with its timing - can undoubtedly be attributed to plain and simple sfortuna ("bad luck" in Italian) that were clearly not under the full control of policymakers. Other aspects, however, are emblematic of the profound obstacles that leaders in Italy faced in recognizing the magnitude of the threat posed by Covid-19, organizing a systematic response to it, and learning from early implementation successes - and, most importantly, failures. It is worth emphasizing that these obstacles emerged even after Covid-19 had already fully impacted in China and some alternative models for the containment of the virus (in China and elsewhere) had already been successfully implemented. What this suggests is a systematic failure to absorb and act upon existing information rapidly and effectively rather than a complete lack of knowledge of what ought to be done.

Recognize your cognitive biases. In its early stages, the Covid-19 crisis in Italy looked nothing like a crisis. The initial state-ofemergency declarations were met by skepticism by both the public and many in policy circles — even though several scientists had been warning of the potential for a catastrophe for weeks. Indeed, in late February some notable Italian politicians engaged in public handshaking in Milan to make the point that the economy should not panic and stop because of the virus. (A week later, one of these politicians was diagnosed with Covid-19.)

Avoid partial solutions. A second lesson that can be drawn from the Italian experience is the importance of systematic approaches and the perils of partial solutions. The Italian government dealt with the Covid-19 pandemic by issuing a series of decrees that gradually increased restrictions within lockdown areas ("red zones"), which were then expanded until they ultimately applied to the entire country. In normal times, this approach would probably be considered prudent and perhaps even wise. In this situation, it backfired for two reasons. First, it was inconsistent with the rapid exponential spread of the virus. The "facts on the ground" at any point in time were simply not predictive of what the situation would be just a few days later. As a result, Italy *followed* the spread of the virus rather than *prevented* it. Second, the selective approach might have inadvertently facilitated the spread of the virus. Consider the decision to initially lock down some regions but not others. When the decree announcing the closing of northern Italy became public, it touched off a massive exodus to southern Italy, undoubtedly spreading the virus to regions where it had not been present.

Learning is critical. Finding the right implementation approach requires the ability to quickly learn from both successes and failures and the willingness to change actions accordingly. Certainly, there are valuable lessons to be learned from the approaches of China, South Korea, Taiwan, and Singapore, which were able to contain the contagion fairly early. But sometimes the best practices can be found just next door. Because the Italian health care system is highly decentralized, different regions tried different policy responses. The most notable example is the contrast between the approaches taken by Lombardy and Veneto, two neighboring regions with similar socioeconomic profiles.

Collecting and disseminating data is important. Italy seems to have suffered from two data-related problems. In the early onset of the pandemic, the problem was data *paucity*. More specifically, it has been suggested that the widespread and unnoticed diffusion of the virus in the early months of 2020 may have been facilitated by the lack of epidemiological capabilities and the inability to systematically record anomalous infection peaks in some hospitals. More recently, the problem appears to be one of data *precision*. In particular, in spite of the remarkable effort that the Italian government has shown in regularly updating statistics relative to the pandemic on a publicly available website, some commentators have advanced the hypothesis that the striking discrepancy in mortality rates between Italy and other countries and within Italian regions may (at least in part) be driven by different testing approaches. These discrepancies complicate the management of the pandemic in significant ways, because in absence of truly comparable data (within and across countries) it is harder to allocate resources and understand what's working where (for example, what's inhibiting the effective tracing of the population).

A Different Decision-Making Approach

Two aspects of this crisis appear to be clear from the Italian experience. First, there is no time to waste, given the exponential progression of the virus. As the head of the Italian Protezione Civile (the Italian equivalent of FEMA) put it, "The virus is faster than our bureaucracy." Second, an effective approach towards Covid-19 will require a war-like mobilization — both in terms of the entity of human and economic resources that will need to be deployed as well as the extreme coordination that will be required across different parts of the health care system (testing facilities, hospitals, primary care physicians, etc.), between different entities in both the public and the private sector, and society at large.Together, the need for immediate action and for massive mobilization imply that an effective response to this crisis will require a decision-making approach that is far from business as usual. If policymakers want to win the war against Covid-19, it is essential to adopt one that is systemic, prioritizes learning, and is able to quickly scale successful experiments and identify and shut down the ineffective ones. Yes, this a tall order — especially in the midst of such an enormous crisis. But given the stakes, it has to be done.

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