

The COVID-19 Pandemic and the Health Policy Crisis in Italy: is there a 'Chinese Connection'?

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ABSTRACT

A recent report by the Scientific Advisory Group for the Origins of Novel Pathogens (SAGO) of the World Health Organization (WHO) brings to the international limelight the possibility that the COVID-19 pandemic originated from an animal or environmental spillover in the Huanan market and in other markets of the Chinese city of Wuhan.

***This Article has a Twofold Objective:** On the one hand, to highlight the opportunity to study the possible link between the onset and spread of the pandemic in the regions of northern Italy and the thriving Chinese community that has resided there for decades through the flow of Chinese citizens traveling from the Wuhan Tianhe International Airport to the Malpensa airport in Milan, as reported by the Customs Agency and on the other hand, after briefly describing the characteristics of the Italian Health System, to highlight the presence of flaws in the Italian Health Surveillance system that must be reviewed especially with regard to the foreign communities residing in Italy.*

Keywords

COVID-19, Animal and environmental spillover, Biosafety and biosecurity measures, The Italian National Health System, Public health crisis and surveillance.

Introduction

On March 11, 2020, the World Health Organization Director-General declared COVID-19 a worldwide pandemic [1], urging national governments to take emergency measures to combat the spread of the disease.

Severe acute respiratory syndrome coronavirus 2 (SARS - CoV-2), causing the pandemic, was initially identified in December 2019 in the Chinese city of Wuhan [2,3] in the Province of Hubei. The different types of coronavirus (the name originating from the crown shape of the spike proteins located on the viral surface) that have appeared in recent years include:

- severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2),
- severe acute respiratory syndrome coronavirus (SARS - CoV),
- in addition, the coronavirus related to Middle Eastern respiratory syndrome (MERS-CoV).

Coronaviruses are enveloped viruses responsible for 20%-30% of atypical pneumonia cases in humans and presumably have evolved from pathogens that infect animals. The new SARS-CoV-2 virus, from which the current COVID-19 pandemic originated, is a single-stranded, positive-sense, RNA beta-coronavirus in the family Coronaviridae.

A few weeks later, with respect to the initial cases from the Wuhan markets, Italy, where a large and thriving Chinese community settled some decades earlier, particularly in the northern Italian regions, became one of the European nations more severely impacted by the pandemic. Coincidentally, the virus broke out in Italy in the same northern regions where large Chinese communities reside. However, was it a coincidence? Have there been any flaws in the Health Surveillance System in China or in Italy, and does health surveillance, particularly in Italy, need to be revised?

These questions are significant given the devastating effects of the pandemic in terms of death tolls and of the socioeconomic crisis that it triggered with the consequent impact on the psychological health of the population. If we consider all these factors together, the effects of the COVID-19 pandemic were unprecedented.

Is there a “Chinese connection”?

In February 2021, the “Joint World Trade Organization (WHO) – China Study” (“WHO-convened Global Study of Origins of SARS-CoV-2: China Part”) proposed a study on the possibility that at the origin of the COVID-19 pandemic in China, the virus was transmitted from animals to humans. For this purpose, the joint report examined four different hypotheses, i.e., “direct zoonotic transmission (also termed: spillover), introduction through an intermediate host followed by zoonotic transmission, introduction through the cold/food chain and introduction through a laboratory incident” [4 – Page 111].

The findings of the joint report were a set of arguments in favor of or against each hypothesis, and the team who worked on the issue “called for a continued scientific and collaborative approach to be taken towards tracing the origins of COVID-19.” [4 – Page 120].

On June 9, 2022, the World Health Organization Scientific Advisory Group for the Origins of Novel Pathogens (SAGO) posted on its website the Preliminary Report [5] on the origin and the earliest days in China of the pandemic. The new report follows up on the previous joint report.

Even if the new report remains “work in progress” and it cites preprints, it:

- sheds new light on the first cases of the SARS-CoV-2 pandemic, including cases in:
 - o individuals who were in China and exposed to the Huanan Seafood Wholesale Market [5] or to other markets in Wuhan, where live animal species known to be susceptible to the SARS-CoV-2 virus were sold;
 - o and in other individuals who did not have any link to those markets;
- and highlights the need for a more accurate investigation and the collection of reliable data and information on the possibility of the introduction of SARS-CoV-2 to the human population through [see page 28 of [5]]:
 - o “An animal or environmental spillover event (n.a. in those

Chinese markets)” – see Figure 1.

- o “A breach in biosafety and biosecurity measures through a laboratory incident (n.a. happened in the Chinese Labs located in Wuhan)” – see Figure 2.
- The new Report by the Scientific Advisory Group for the Origins of Novel Pathogens (SAGO) - World Health Organization (WHO) asks for more investigation and emphasizes the following: It is very likely that the pandemic’s origin was related to an animal spillover event in the Huanan Seafood Market, while the likelihood that there was a breach in biosafety and biosecurity measures, if the findings of the two preprints [6 and 8] are confirmed, seems to be very small;
- In addition, “Most of the identified human cases at the beginning of the outbreak were those who presented with notable symptoms. There was, however, little information on, or detection of, those cases with mild disease or asymptomatic infection, due to the fact that surveillance systems were not designed to capture a substantial component of the spectrum of illness caused by SARS-CoV-2 infection, and early definitions may not have captured those mild cases/asymptomatic infections” [5 - page 17].

As a result, the new report by the WHO concludes that more research work is needed to find additional evidence of the animal spillover origin of the COVID-19 pandemic and that there may have been flaws in the China Health Surveillance System since it was not designed to collect information on or to detect those cases of mild disease or asymptomatic infection. This is a key issue, considering that:

- Available information on the Chinese travelers from the Wuhan Tianhe International Airport to Malpensa (Milan in Lombardy) confirms the presence of tens of thousands of Chinese citizens flying from Wuhan to Italy in the initial days of the outbreak of the pandemic at the Huanan Market (see Map 1); and
- Unfortunately, the Chinese surveillance system did not detect the presence of “mild or asymptomatic cases”, which may have been the vehicles of transmission from China to Italy.

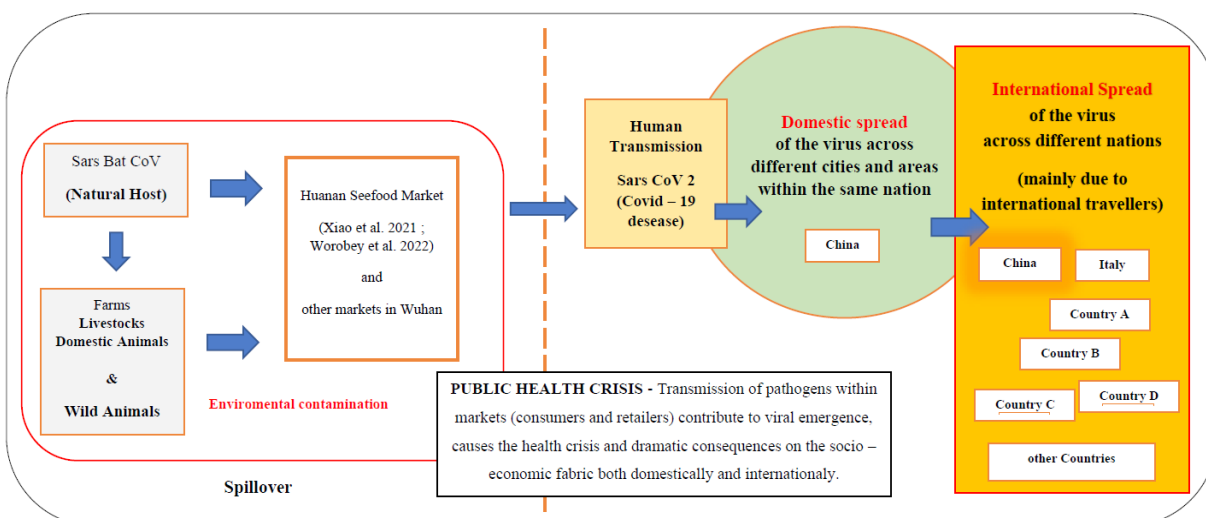


Figure 1: Animal or environmental spillover and human transmission.

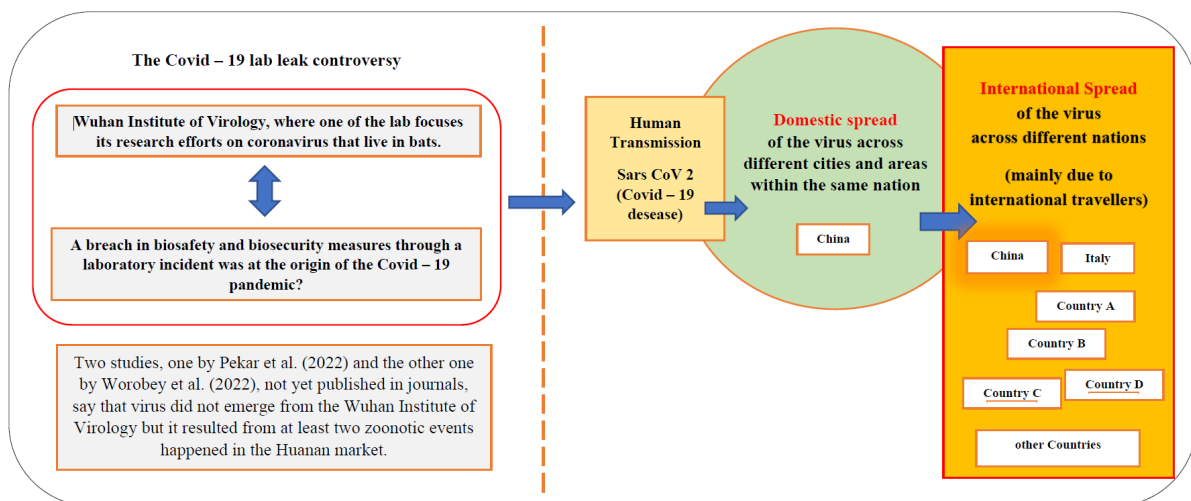


Figure 2 – The Covid – 19 lab leak controversy.



Table 1: Source: Data on populations from Worldometer as of Thursday, June 9, 2022. Confirmed deaths from COVID-19 as of January 31, 2021, and as of June 9, 2022, from Johns Hopkins University Coronavirus Resource Center dashboard available at the website: <https://coronavirus.jhu.edu/region>.

Nation	Population as of June 9, 2022	Confirmed deaths from COVID-19 as of Jan. 31, 2021	Confirmed deaths from COVID-19 as of June 9, 2022	Percentage of population that died from COVID-19 as of June 9, 2022
Europe	748,514,852	745,590	2,015,911	0.26932144294%
Italy	60,290,216	88,516	167,169	0.27727384490%
France	65,552,340	76,200	145,360	0.22174647008%
Germany	84,301,132	56,945	138,618	0.16443195569%
Austria	9,105,609	9,393	19,960	0.21920554683%
Switzerland	8,776,471	9,523	13,267	0.15116554251%
Spain	46,789,687	59,081	106,914	0.22849907075%
UK	68,572,530	106,367	179,083	0.26115851348%

Cerqua and Di Stefano (2021) [28 – page 182] reported that “from 17th November, i.e., the date of the first case in Wuhan (China) to 31st January, i.e., the date in which Italy suspended flights to and from China, there were 203,894 arrivals from China, of which 15,400 were from Wuhan to Fiumicino (Rome) and 125,000 to Malpensa (Milan)”.

The Italian health surveillance system was also inefficient, and it was most likely too late when the Italian government decided to suspend flights to and from China.

The measures taken by the Italian Ministry of Health and the Health Authorities to counteract the pandemic were draconian, and the same day (11 March 2020) of the WHO’s assessment, the Italian government, through a series of decrees by the Prime Minister [10-13], issued a national lockdown, suspending most social, cultural and economic activities for several months.

The health care system in Italy

The Italian health care system, namely, the National Health System (N.H.S.), has been structured [11] since the very beginning as a decentralized system, where health care is controlled:

- On the one hand, by the central government, through the Ministry of Health and of a set of governmental agencies for public health, the most important of which is the National Institute of Health (Istituto Superiore di Sanità), which mainly carries out scientific research and surveillance activities. The other relevant Governmental Agency is the Department of Prevention responsible for public health and, in particular, for the pandemic response.
- On the other hand, by the 21 regions. In each region, health care facilities and local health authorities are under the responsibility of the Regional Health System, and all decisions concerning health care are made both at the national and local levels.

Among the fundamental principles that characterize the National Health Service (N.H.S.), of particular importance are:

- Universal coverage;
- General tax revenues as a source of financing;
- Free health care at the point of delivery, with nondiscriminatory access to health services in each region.

Despite the good intentions of the regulator, the decentralized and regional format chosen for the NHS over forty years ago in Italy,

even if it was intended to create a more interconnected structure among social and health care services, resulted across the Italian regions in increased inequality [8-10] and variation in ability to access health care services (for example, differences in waiting time) by the population based on factors such as income, age, and ethnic background.

The past investment choices (i.e., how the general tax revenue was invested in the different regions and the amount of resources that each region had at its disposal) have configured the current Italian health system and its ability, particularly during the first stage of the pandemic, to set an articulated strategy to control COVID-19 through effective public health and social measures.

The guidelines of the World Health Organization (WHO) suggested that what is of fundamental importance to protect people and communities in the case of an outbreak of an unknown pandemic, pending the identification of effective vaccines and treatment is public health work with particular reference to the surveillance system.

In Italy, the Ministry of Health established the COVID-19 surveillance system on January 22, 2020 (with Circular number 1997), setting out the first criteria to use to identify and report cases of SARS-CoV-2 infection. However, it was a sort of “learning by doing” surveillance system since as the epidemiological situation was evolving; other ministerial circulars were issued with new and more updated information.

The time lost at the very beginning, when no effective vaccine was yet identified, and the lack of an articulated surveillance system created a situation of uncertainty and put the country's health policy in crisis.

The Aftermath

Table 1 shows the percentages of deaths from COVID-19 in Italy and other European populations, as of January 31, 2021 (just a month after the beginning of the vaccine campaign in Italy) and as of June 9, 2022. It is clear that, even if there is in the literature [20,22] an ongoing debate regarding the number of deaths due to COVID-19 and in particular whether these deaths are truly due to the infection (i.e., to the severe acute respiratory syndrome coronavirus 2) or to underlying health conditions, Italy appears to have the highest mortality due to COVID-19.

However, why does Italy, whose social and health system is regionalized, suffer such a high rate of deaths compared to other high-income European countries?

The answer to this question remains under scientific investigation, but what is clear now is that the high rate in Italy may be due to several factors, particularly the following:

- the lack of an effective health surveillance system;
- demographic (a consistent fraction, 22.8%, of the Italian population aged 65 or above) and epidemiological factors;
- the concentration of the outbreak in a few northern regions, the richest and more industrialized ones in Italy, with a high population density of elderly people, a high level of air pollution, and an insufficient number, with respect to the population density, of hospital and intensive care beds;
- in addition, limited availability at the initial stage of the pandemic in Italy of contact tracing and laboratory testing.

However, if we return to Table 1 and compare the data on the cumulative confirmed deaths from COVID-19 as of January 31, 2022, (more or less a month after the beginning of the administration of the first dose of the vaccine to the population), and as of June 9, 2022, (when the vaccine campaign was well underway with a few fourth doses administered to the population), it is evident that:

- In Italy, the European country most severely impacted by the pandemic, over 50% of the total deaths as of June 9, 2022, (88,516 as of January 31, 2020, out of 167,169 as of June 9, 2022, corresponding to 0.27727384490% of the total Italian population) occurred before January 31, 2021, during the first phase of the pandemic when effective vaccines and treatments were not yet discovered.
- Similarly, in other countries, such as the UK (106,367 deaths as of January 31, 2020, out of 179,083, corresponding to 0.26115851348% with respect to the total population as of June 9, 2022); France (76,200 deaths as of January 31, 2020, out of 145,360, corresponding to 0.22174647008% with respect to the total population as of June 9, 2022); Spain (59,081 deaths as of January 31, 2020, out of 106,914, corresponding to 0.22849907075% with respect to the total population as of June 9, 2022); and Switzerland (9,523 deaths as of January 31, 2020, out of 13,267, corresponding to 0.15116554251% with respect to the total population as of June 9, 2022), over half of the overall death toll as of June 9, 2022, occurred before the introduction of the vaccines.
- The health and socioeconomic emergency measures taken at the very beginning by governments in Italy, mainly behavioral measures, such as wearing masks, social distancing, lockdowns and curfews (implying the closure of most economic and social activities), were the only means that central and local health authorities had at their disposal to counteract the devastating effects of the COVID-19 pandemic.

As a last observation, we note that due to the lockdown and to all the emergency measures taken by the Italian government and the Chinese government (which adopted a “zero COVID-19” strategy), the growth rate of the real gross domestic product in China decreased from 5.9% in 2019 to 2.24% in 2020, resulting in

an increase in the unemployment rate in China to 6% in January 2020. In Italy, the growth rate of the real gross domestic product decreased from 0.5% in 2019 to -8.9% in 2020, resulting in an increase in the unemployment rate up to 9.2%. A pandemic, such as the COVID-19 pandemic, is not only a health emergency but also affects the socioeconomic fabric of impacted nations.

Concluding Remarks

It is now clear that past investment choices of the Italian National Health System were myopic and that more resources need to be invested in the surveillance system to control the trajectory of the COVID-19 pandemic, to prevent outbreaks of new pandemics and for better coordination of the central and local health authorities and services to address the aftermath of the pandemic, in particular the negative psychological impacts caused by the social, cultural and economic disruption of the pandemic.

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