

Editorial

A Frail Health Care System for an Old Population: Lesson form the COVID-19 Outbreak in Italy

Stefano Volpato, MD, MPH,^{1,*} Francesco Landi, MD, PhD,² and Raffaele Antonelli Incalzi, MD, PhD,³ on behalf of the Italian Society of Gerontology and Geriatrics

¹Department of Medical Sciences, University of Ferrara, Italy. ²Department of Geriatrics, Neurosciences and Orthopedics, Catholic University of the Sacred Heart, Rome, Italy. ³Geriatric Unit, Campus Bio-Medico University, Rome, Italy.

*Address correspondence to: Stefano Volpato, MD, MPH, Department of Medical Science, University of Ferrara, Via Ariosto, 35 I-44100 Ferrara, Italy. E-mail: vlt@unife.it

Italy is one of the oldest countries in Europe and worldwide with an average life expectancy at birth of 82.3 years, an old age index of 173, and 23% of the population being 65 and older (1). On the second half of February 2020, Lombardy, one of the richest regions of the country, and northern Emilia-Romagna experienced the beginning of one of the largest and most serious clusters of COVID-19 in the world. Despite aggressive containment efforts, the disease continued to spread, and the number of affected patients has been rising steeply. According to the bi-weekly bulletin of the Italian National Institute of Health (Istituto Superiore di Sanità) as to March 30, 94,312 Italian people (55% men) have been recognized as affected by reverse transcriptase–polymerase chain reaction (RT-PCR) testing over the country (2). Of them, 51% were older than 60 years and about 19% were older than 80 years. Since most of the Italian regions decided to test only symptomatic patients, these figures clearly show that most cases of COVID-19 affect the geriatric population. Older people also have a worse clinical course, confirmed by case fatality rates by age group, showing a steeper increase in mortality from 1.7% in the 50–59 age group to 24.6% in the 80–89 group. Furthermore, comparison with other European countries suggested an excess mortality in Italy as compared, for example, with France (6.7%) and Germany (1.0%) (3) confirmed also in age-stratified analysis comparing Italy with China demonstrating an excess mortality rate in Italy after the age of 70 (4).

According to the data released by the Italian Ministry of Health, mortality rates varied across different regions of Italy. For example, considering the four regions with more than 500 deaths, mortality rate was 5.2% for the Veneto region, 9.0% for Piemonte, 11.7% for Emilia-Romagna, and 16.9% for Lombardia. Although age-stratified mortality rates across different regions are not available now, it is likely that regions with higher total mortality had even higher mortality rates for older people. Higher mortality rates of older patients are expected as complicated COVID-19 is characterized by severe interstitial pneumonia followed by acute respiratory distress

syndrome, thromboembolic events, and eventually multiorgan failure, a cascade of negative events that is obviously more likely in older frail patients, those with elevated multimorbidity and reduced functional reserve.

Although it remains unclear how the different mortality rates vary across different regions of the country, the first spontaneous question is whether the Italian health care system is well suited to respond to an unexpected and so huge health emergency. First, the Italian health system, regarded as one of top ten in the world (5), is equipped with 3.2 hospital beds for 1,000 persons, with extremely high bed occupancy rate, that is far below the European Union average 5.0/1,000 and less than half of what is available in Germany (8.0/1,000) (6). The sudden explosion of the COVID-19 outbreak, with almost 10% of infected patients having respiratory failure and requiring mechanical ventilation has immediately saturated the acute care beds availability of Lombardy and northern Emilia-Romagna, including intensive care units' (ICU) beds. The lack of availability of ICU beds and mechanical ventilators has forced Italian physicians to make quick and dramatic decisions on who had to be ventilated, intubated, and admitted to ICU wards and who not. The guidelines of Italian College of Anesthesia, Analgesia, Resuscitation, and Intensive Care (SIAARTI) (7) did not suggest that age should be the only factor determining resource allocation, but the document acknowledged that an age limit for ICU admission may ultimately needs to be set. Although chronological age was not the only criterium for selection, decision was certainly not based on a comprehensive geriatric assessment and therefore, it is likely that older patients and particularly geriatric patients, even with limited multimorbidity and good functional reserve, have had very limited access to ICU and mechanical ventilation. As a matter of fact, it has been reported that several older patients have been dying at home, often alone, because of the lack of hospital beds' availability (8).

A second important issue is that, because of the Italian regionalization of the health care system, the availability of home care

service and long-term care for older adults is substantially different across regions. Home care and long-term care are cornerstones for continuity of care and prevention in older patients, particularly for those socially disadvantaged. From this point of view, Lombardy has a very robust hospital network, but a limited long-term and home care organization that might have hampered early recognition of COVID-19 cases among the oldest patients and might have postponed the access to care.

Third, according to the World Health Organization recommendation, laboratory testing for SARS-CoV-2 virus detection from nasopharyngeal swab or sputum sample has been performed only on symptomatic individuals or persons who had a close unprotected contact with confirmed patients. This policy may have limited the benefits of social isolation because asymptomatic people, including caregivers and health care personnel, might have carried the virus to older persons, particularly the most disabled and dependent and those living in nursing homes. From this point of view, it is striking that the Veneto region that is experiencing the lowest mortality rates in Italy (about 5%) performed the highest level of laboratory testing (2.2% of the population), whereas, Lombardy that tested only 1% of the total population is having the highest mortality rate (almost 17%). Finally, it is possible that because of the higher burden of multimorbidity and consequent atypical presentation of COVID-19 in older people, a diagnostic delay may have occurred in some cases leading to more severe pneumonia and worst prognosis.

Overall, these data suggest that Italian national health care system was not suited and prepared to respond to this sudden and dramatic outbreak. First, our system, like our older frail patients, is lacking functional reserve able to increment the overall efficiency and maintain the system homeostasis under stressful conditions. The immediate shortages of ICU beds and ventilators are one of the major causes of the incredibly high mortality rates observed in Italy. Second, our health system is probably well oriented to the cure and prevention of multifactorial conditions very common in western countries like cancer, cardiovascular diseases, and metabolic conditions but it is no longer used to counteract infection diseases outbreaks. From this point of view, the Italian tragedy suggests that a prompt population mass testing for detecting asymptomatic infected people along with immediate, widespread, draconian measures of social isolation, along with contact tracing and quarantine, might have more strongly reduced the rate of COVID-19 transmission, with the greatest benefit for frail patients, more prone to a complicated course of the disease. Third, retirement homes for the older adults and nursing home should develop and implement specific strategies and protocols to prevent external contamination and widespread of the infection between their residents. Fourth, social isolation might be particularly negative for older people and might be associated with worsening of many chronic conditions. It is of paramount importance to guarantee indirect contact with older patients and their caregivers, like a teleconsultation service for older persons.

Geriatric care teams must be integrated along with infectious disease specialists, pneumologists, and anesthesiologists into the management of this SARS-CoV-2 infection crisis and must develop tailored management strategies for older patients and should promptly investigate and describe the peculiar clinical presentation of COVID-19 in older patients in order to facilitate immediate recognitions of the disease and start available therapy to prevent the most severe form of pneumonia complicated by respiratory failure (9). In this perspective, the GeroCovid Initiative of the Italian Society of Gerontology and Geriatrics aims at expanding the knowledge of the disease and its impact on health status and needs of care as well as at promoting health care strategies tailored to multiple different settings and different available resources. Any Geriatric Society or working group can voluntarily join the GeroCovid group at www.sigg.it. This would allow explore the effects of Covid19 pandemic on the older population through the same protocol and, thus, have comparable data. Each Geriatric society or geriatric working group will use its own data besides contributing to the whole study. We hope that such a working method will make geriatricians able to recognize the disease, help their patients, and provide valuable information to the health authorities.

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