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Correspondence

**COVID 19 a challenge for emergency medicine
and every health care professional**


To the Editor,

Contemporary emergency and rescue medicine has to cope with the COVID-19 outbreak. Taking into account the capabilities of modern medicine, including diagnostics, as well as of means of communication, general public knowledge, and the knowledge of medical personnel, the chances of fighting the pandemic are many times higher than during previous large-scale pandemics that decimated Europe. However, it is clear that the potential of health care units in any country, even the most developed one, can be quickly exhausted in the event of a rapid increase in the number of infections.

The whole medical world gathers information related to the pandemic, including analyses of its spread conditions, disease characteristics, statistics on morbidity and mortality, as well as factors limiting and conducive to infection and severe course, and, above all, treatment options. Currently, there is no specific vaccination, but work is ongoing and many governments, also European, as well as international corporations are funding research in this field.

A number of attempts are being made to treat and reduce the severe infections. Experimental research is being conducted on the use of various antiviral drugs, chloroquine and derivatives, and antibiotics, especially in combined therapy. In the case of a severe course of the infection, the main focus is the full-profile intensive care, mainly concentrated on ARDS and septic shock treatment. Unfortunately, in some patients, despite survival of the period of multi-organ failure and ARDS, permanent respiratory failure is observed or fibrosis, sometimes requiring lung transplantation or long-term ventilation support. A number of factors are identified that affect the severity of the infection course, including overweight and obesity, co-morbidities, hypertension, diabetes mellitus, immunosuppressive disorders, and, above all, the patient's age. Therefore, particular attention should be paid to isolating the elderly and all measures should be taken to maximally reduce the contact of people at risk with population centres or even with any person who might pose an epidemiological risk due to potential exposure to the highly infectious virus.

As for prehospital activities, it is important to follow the recommendations. While procedures are strictly adhered to in infectious disease departments, well equipped and trained emergency departments, or dedicated intensive care departments, while appropriate equipment, procedures, isolation wards, and experienced medical personnel are available, many of these elements may be missing at the prehospital stage. Prehospital activities should focus on the use of personal protective equipment; attention should be paid to strict adherence to the procedures for putting on and, above all, taking off protective clothing,

goggles, and masks; unnecessary exposure should be avoided. Proper ambulance disinfection is of extreme significance. Medical rescuers often can only count on themselves, they do not have adequate support of hospital specialists, they do not have such advanced equipment or relevant experience. It is important to implement proper disinfection, contact time of these substances, strict observance of procedures. Although in some countries it is suggested that the infection is unavoidable and everyone has to acquire immunity, even in this scenario the number of patients, especially in severe condition, should not increase rapidly as the ICU resources will become exhausted; this is perfectly visible in Italy, fighting heroically against the pandemic.

The COVID-19 epidemic can bring about huge changes in the functioning of many societies. Some of these will certainly be beneficial, even in a short term. Among them is the understanding of the need to ensure adequate resources for investment in health care units, the provision of appropriate equipment in hospitals and emergency units, the improvement of intensive care units accessibility, increase in the ratio of the number of ICU beds to the total number of hospital beds. In the present situation, it can be seen that with a permanent shortage of ICU vacancies, any epidemic, pandemic, or increase in the number of diseases requiring intensive therapy constitutes a threat to public health. The huge mortality in many countries, including China, Italy, or Spain, will certainly force governments to take decisive actions to improve health safety. A significant increase in expenditure on health care and a real improvement in the equipment and training of civil protection and medical rescue units can be expected. Importantly, many countries will see a change in the perception of these units and the need to spend large amounts of funding to protect against similar epidemics and disasters in the future. Many decision-makers will realise that it is not only a question of ventilators, but above all of a holistic, comprehensive approach to preparing a country or local community for an emergency, a disaster. The experience of the current pandemic shows that many countries have to rely only on themselves in the realm of producing key medical equipment, but also masks with specific filters, or simple protective measures as providing them from another continent or even another country can prove to be a very serious problem in some emergencies.

Another issue is that not everything can be made economically viable. A good example is the number of physicians specialising in infectious diseases and the number infectious disease departments. Strategic planning must take into account the need to maintain certain equipment and human resources, including specialists in the fields concerned, even if for a certain period their usefulness is limited owing to the lack of infection data. It seems that the design of new hospital wards or even entire hospitals should take into account the necessity to rapidly transform any unit into that capable of treating patients with dangerous pathogens. As in the case of earthquakes in seismically active areas, significant technological restrictions are introduced for erecting buildings, the issue of the need to isolate patients must now be addressed in newly built hospitals or during the renovation of existing facilities. The current pandemic may serve as a warning to societies but above all to those in power, with reference to the role of medical services, to the need of wise investments for

the future, and to applying principles that have been known for years in disaster medicine.

In this difficult situation, we should remember about solidarity with other countries and, above all, about support for families, relatives, the elderly, people at risk; we should, however, remember that we must not put our own safety at risk. Examples in recent weeks have shown that irresponsible behaviour, medical personnel's failure to comply with quarantine, even when not required by law but because of their presence in areas with high levels of infection, can lead to the exclusion of large groups of medical staff, partial closure of hospitals or other health care units, and mass exposure of patients. Obviously, a large proportion of people, including medical personnel, for various reasons going on vacation or taking part in conferences, underestimated the epidemiological situation; in front of our eyes, we had previous epidemics which expired without such a threat to the inhabitants of Europe, America, or other continents. This time, however, the pandemic reached proportions that could threaten millions of people around the world, lead to huge adverse changes in the economy and health care system, pose huge challenges to each country individually and to solidarity between countries.

In this hard time, it is important to remember about our own mental health. This emergency situation affects not only us but also our colleagues and families and contact with specialists in this field is important. The need to make choices as to which patients will be offered treatment and who, because of lack of adequate resources, will be deprived of their chances can have a devastating impact on the mental state of the medical personnel. Physicians, paramedics, nurses, as well as the entire medical personnel are only humans.

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