doi:10.1093/eurheartj/ehaa440

The 'Black Death' and the physician at the time of COVID-19

'Doctor, I implore you, tell him I always loved him, that he is not alone, and I will always be with him'

The difference between a conventional healthcare emergency and an epidemic is qualitative as well as quantitative, and this is related to our relationship with death. The above quote is the heart-wrenching request of the wife of a 75-year-old patient who is dying while in isolation and on mechanical ventilation in the intensive care unit (ICU). The woman asks the doctor—the only allowed contact with the patient—to 'take his hand' and accompany him to the end as she would have done.

New roles, new uncertainties

This is a paradigmatic scene of the anthropological disaster produced by the COVID-19 pandemic. The contact with the Black Death that hovers on the world scene forces the doctor to take on new roles, and risks changing his certainties and sensitivities. In addition to being a professional that treats patients, the doctor becomes a potential patient himself, an involuntary plague spreader, communication link between dying patients and family, administrator of last rites, and first support of bereaved family members.

Similar to doctors working for humanitarian organizations in war, health workers are paying a high price for COVID-19. As of 16 April, 121 physicians and 30 nurses have fallen to COVID-19 in Italy alone. From the start of the epidemic, more than 16 050 health workers have become ill (10.6% of the total).[1] These numbers are particularly high, and controversy has ensued regarding inadequate protection (*Figure 1*). However, unlike wartime medicine, the (invisible) infection transforms the physician into the most efficient of plague spreaders. In the context of a virus with a reproduction number (R0) of probably ~2.5 for the general population, and given the high number of interpersonal contacts a physician is obliged to make within a hospital, the number of subjects who may plausibly be infected by a single doctor is alarmingly high. In fact, this disease is looming mainly as an intrahospital infection!

The doctor, death, and the 'pietas'

Another aspect that dramatically characterizes this pandemic era is how we manage the end of life care. This has always been one of the most difficult and delicate features of the medical profession, carried out on hospital wards or in hospices. In that context, the good doctor has always offered the patient physical and psychological closeness, prepared the family, communicated the death appropriately, and offered support. The magnitude of the pandemic, however, has transformed an individual and organized undertaking to a 'mass' scenario that is hard to manage. At the peak of the epidemic, in many hospitals in Northern Italy there have been as many as 70–80 deaths a day; the bodies needed to be immediately moved to morgues and cemeteries that are now saturated. The military are frequently called in for rapid transport of the remains to cemeteries and crematoria in neighbouring cities.

The physician—a tested pilot of uncertainty—now faces a crowd of frightened patients who come to hospitals looking for treatment, reassurance, and a point of reference after the disappearance of community care. These patients face doctors who may be even more afraid than they are, and who are experiencing uncertainty, cultural and material impotence (lack of beds, crematoria, protective equipment, etc.), and are exhausted and concerned about their own safety. In this context, there is a real risk of losing the essential quality of 'pietas' (or honour and respect) for the deceased. The magnitude of the number of deaths over a short period is diametrically opposed to the conditions required for the development of 'pietas', as this is based on a one-to-one relationship (*Figure 2*). This is a direct extension of the one-to-one dimension of the

Figure 1 The need to protect against a dark enemy during an epidemic has not changed over the centuries. left: the doctor during the plague, Europe, 1656. right: doctors and nurses in a COVID-19 intensive care unit, Europe, 2020.

Figure 2 Pietas towards a single dead loved person. 'Lamentation (the Mourning of Christ)', Giotto, 1304, (left) vs. a 'tangle of bodies' during an epidemic (right) 'The Triumph of Death', Pieter Breugel, 1562.

clinic (deriving from the ancient Greek κλίνη, *klínē*, meaning bed), in which clinical practice is an expression of the medical arts in relation to the bed-bound person—an absolutely individual relationship between physician and patient

'Pietas' for the deceased are one of the oldest and most universal human sentiments, and can be found in many cultures and religions. In the Christian religion, an ideal continuity exists between the care of the body of the deceased (after being taken down from the cross, the body of Christ was washed and anointed with scented oils on the stone of the sepulchre) and the (aesthetic) services provided by modern-day US funeral businesses. The pandemic turns this culture on its head. This phenomenon is captured very well in late medieval and early renaissance European painting, where the essence of the epidemic and Black Death is represented as a tangle of bodies (*Figure 2*).

One of the risks we run, as humans and physicians, is losing sight of the significance and importance of every single death within a forest of epidemiology numbers. Daily contact with death can desensitize consciences and accustom them to tragedy ('A single death is a tragedy; a million deaths is a statistic'. Joseph Stalin).

The black 'Lady' will not triumph: looking beyond COVID-19 (with greater humility)

Until very recently, medicine was engaged in high-level cultural ambitions such as incorporating digital health, artificial intelligence, and genetic engineering, and addressing ensuing technical, cultural, and ethical issues. This world was hit by the pandemic; the whole system was caught unprepared. As if mocking the types of high-level issues with which the medical world had been preoccupied, one of many millions of viruses present in the wild makes a jump from one host species to another and the entire medical–scientific world is floored. It implodes, with a lack of ideas on how to react. The defence strategy consists of 'hiding', and shutting down society, despite the knowledge that this cannot last, the price being social upheaval. The central issue is timing, the dilemma being between keeping business and public/social life on hold to contain the epidemic and loosening the lockdown, giving the virus new breathing space. We will therefore need to choose a strategy that will not lead to eradication but rather to the virus becoming endemic. And what then? We want to believe that an effective defensive mechanism will be found, but when will this be? The last experience with a coronavirus—the Middle East respiratory syndrome (MERS) epidemic—is not at all encouraging. It exploded in 2012; the infection became and still remains endemic with minor annual surges. Despite an extremely high mortality of 34% (>10 times higher than that of COVID) neither vaccine nor specific drugs have been found in the 8 years following the acute onset of the epidemic.

The vast potential reserve of epidemic agents is linked to the rapid changes in humanity and its living conditions. Globalization, a shrinking world, and the exponential increase in contacts has greatly increased the risk of pandemics that we can therefore expect to recur in the future. Population growth, coupled with ever greater invasion of wild habitats, has facilitated the leaps of viral agents to humans that led to the HIV pandemic and the emergence of Malburg and Ebola, not to mention SARS, MERS, and COVID-19.[2,3]

If this situation were to repeatedly lead to a worldwide emergency, life would become exceedingly difficult and countries would necessarily need to prepare for major pandemics, which should then become expected matters of urgency rather than unexpected emergencies.

References

References are available as supplementary material at *European Heart Journal* online.

Claudio Rapezzi, MD
Cardiovascular Center, University of Ferrara, Italy
Maria Cecilia Hospital, GVM Care & Research, Cotignola (RA), Italy
Email: claudio.rapezzi@unife.it
Telephone: +39 0532 239882

Luigi Tavazzi, MD
Maria Cecilia Hospital, GVM Care & Research, Cotignola (RA), Italy

Roberto Ferrari, MD
Cardiovascular Center, University of Ferrara, Italy
Maria Cecilia Hospital, GVM Care & Research, Cotignola (RA), Italy