

(PaO₂) to fractional inspired oxygen (FiO₂) ratios.³ The current NEWS2 system in use in NHS hospitals treats oxygen delivery as a yes/no binary score without demonstrating a graded increase from increasing oxygen demand.¹

Consider the following two scenarios:

- > Patient A is a COVID-19 patient on 1 L nasal cannula to maintain O₂ saturations >92%, a respiratory rate (RR) of 20 breath per minute and a heart rate (HR) of 100 beats per minute. This patient scores 3 on NEWS2.
- > Patient B is a COVID-19 patient on continuous positive airway pressure (CPAP) on 60% FiO₂, 15 cmH₂O to maintain O₂ saturations of 92%, with RR of 20 breath per minute and HR of 100 beats per minute. This patient also scores 3 using NEWS2 despite the vast difference in clinical status.

While the Royal College of Physicians (RCP) has recognised this issue, stating that 'ANY increase in oxygen requirements should trigger an escalation call to a competent clinical decision maker', this statement does not differentiate acuity of a required clinical review between patients A and B should their oxygen demand increase.⁴ Patient safety may be at risk when healthcare staff with only basic training are monitoring observations on the ward unaware of this problem. The window of time for recognition and escalation would be shortened if the oxygen delivery systems could be scored in an escalating ladder (see supplementary material S1).

Given the limitations of denoting oxygen on NEWS2 highlighted by guidance issued by the RCP, NEWS2 would benefit from a re-evaluation and updated scoring system in the interests of patient safety in anticipation of future waves during the COVID-19 pandemic. ■

Supplementary material

S1 – Proposed oxygen delivery scoring system.

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Legal proceedings against doctors in the COVID-19 era: an Italian phenomenon

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Editor – At the time of writing, more than 165,000 cases of SARS-CoV-2 infection have been confirmed in Italy. Although the number of new daily positives is decreasing, the situation is still severe, especially for healthcare workers who struggle every day, risking their own lives and that of their relatives. The situation is aggravated by the fact that in recent weeks in Italy, several law firms have taken advantage of the desperation of these days to advertise and bring lawsuits against doctors, making them the scapegoat for the global pandemics.

In Italy, more than 116 doctors died due to the SARS-CoV-2 infection since the beginning of the pandemic.¹ We collected data on each one of them, using local newspapers and obituaries as sources. We found out that 110 were male (95%) and only 6 were female (5%), the youngest was 49 years old, the oldest 94 years old and the average age was 70 years old. Five of these doctors had returned from retirement to help with the emergency, only 21 were retired. Eighty-two per cent of the deceased worked closely with patients at the time of the infection.

On 19 March 2020 and 26 March 2020 there were 8 deaths, the highest number in the whole month; 49 were family doctors, followed by dentists (10 deaths). Those most at risk were doctors who operate outside hospitals. General practitioners, since the emerging of more and more COVID-19 cases, have highlighted the problem of not having enough personal protective equipment or even just detergents. To cope with the problem, they have adopted various safety measures, including communications with the patients by telephone and prescriptions strictly made online. Moreover, given the shortage of medical specialists, healthcare workers had to drastically increase working hours to provide adequate assistance to the ill.

In addition to these dramatic circumstances, as the number of SARS-CoV-2 infected people grew, more and more physicians started being denounced by lawyers who wanted to speculate on this situation, requiring the intervention of the country's National Federation of Orders of Surgeons and Dentists (FNOMCeO).²

The moral question we would like to raise is: 'To what extent one doctor, who fights in the front lines endangering his own life, and that of his relatives, should be held accountable for the death of a patient with COVID-19?'

It should be noted that, according to the current Italian law, if a doctor is an employee of a health facility, whether private or public, he will be protected by the health facility which can move in recourse if the doctor has acted with willful misconduct or gross negligence. The current system would already provide for guarantees that contemplate emergency situations. To put these guarantees in place, however, criminal investigations would still have to be carried out.

This phenomenon, if not curbed immediately, is likely to reduce the availability of healthcare professionals, thus aggravating the shortage of health specialists and giving way to long and expensive legal proceedings that would distract doctors from their work and increase the psychological pressure on them.

For this reason, we believe that during this unprecedented global health crisis, lawyers should not be allowed to sponsor lawsuits against doctors and new measures must be taken to safeguard health professionals, not only physically and financially, but legally

too. However, these measures should at the same time prevent any ethically incorrect behavior from passing under a penal shield. ■

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Is computed tomography really the future of biology for diagnosing COVID-19 infection?

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Editor – Though the COVID-19 outbreak has now reached every continent and contaminated more than 1 million people causing tens of thousands of deaths and the lockdown of almost 3 billion people. To confirm the diagnosis, the Centers for Disease Control and Prevention recommends the collection of SARS-CoV-2 ribonucleic acid using reverse transcription polymerase chain reaction (RT-PCR) on nasopharyngeal swab specimens. This highly specific technique presents three main drawbacks: nasopharyngeal collection is complex and technician-dependent; after healing, the viral antigens disappear and RT-PCR becomes negative; and RT-PCR test for COVID-19 exhibited sensitivity as low as 60–70%.¹ Following one of the first significant study demonstrating that chest computed tomography (CT) has a sensitivity of 97% and a negative predictive value of 83%, the authors suggest CT may be considered as a primary tool for COVID-19 detection, that consequently lead some practitioners to use it as a SARS-CoV-2 primary diagnostic tool.¹ More recently, others conclude that chest CT is important in the screening of patients in whom disease is clinically suspected, especially those who have negative initial RT-PCR results.² However, in 2020 it is difficult for scientific community to perceive how a radiological exam as CT may supersede the biological tests in the diagnosis of a specific infectious agent.

Since 1985, the HIV pandemic has illustrated the excellence of serological diagnosis test capabilities, limiting the role of RT-PCR to the diagnosis of primo-infection and quantification

of the viral load to assess treatment efficacy.³ Acute viral and bacterial pathogens stimulate immune system, generating memory antigen-specific B cells differentiating to plasma cells that secrete immunoglobulin M (IgM) and IgG antigen-specific antibodies, the main support of the future vaccine effectiveness.⁴ The presence of COVID-19 specific antibodies has recently been confirmed, allowing to understand the development of this new infection disease and the activation of the immune response by specific antigens.⁵ Thus, serology has certainly more than ever a role to play in this warfare against the COVID-19 pandemic because it requires a simple venous blood sample; costs a fraction of RT-PCRs or CT price; provides results in less than 2 hours; helps distinguish healed from asymptomatic and never-infected people; and enables positive COVID-19 diagnosis from the first week following the onset of symptoms. A mass testing should be made available quickly, to securely and adequately exit the global lockdown. Academic laboratories, healthcare companies, and governments have the responsibility to diligently build and provide the necessary tools to fight COVID-19 pandemic. Finally, CT should continue to be used in cases of severe and atypical clinical presentations, and maybe should not be used in the screening of clinically suspected patients.⁶ ■

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