



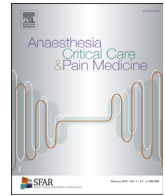
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## Editorial

# The COVID-19 pandemic: a gateway between one world and the next!



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In a recent editorial published in *Anaesthesia Critical Care and Pain Medicine*, Collange et al. [1] discuss *70 years of progress from epidemics to resilience to exceptional healthcare crises*, describing the creation of intensive care medicine (ICM) during the poliomyelitis epidemic by Dr Bjorn Ibsen, a Danish anaesthesiologist. At that time, the incessant work of anaesthesiologists, nurses and medical students in delivering positive pressure ventilation reduced the mortality of bulbar poliomyelitis from 87% to a rate below 15% [2]. Such astonishing results led to epochal changes, and among others, prompted the development of mechanical ventilation and creation of dedicated special units for acute care and respiratory support. The concept of intensive care units (ICUs) was born! The disastrous conditions created by epidemics and pandemics have challenged us throughout our existence, calling for innovation and providing opportunities for disciplines such as anaesthesiology and critical care to make major strides in their advancement [3].

Almost 70 years later, at the end of 2019, a pandemic of coronavirus began in the Wuhan region in China and few months later hit Europe profoundly, with Italy being the first and more aggressively affected European country. On the 11<sup>th</sup> of March 2020, the World Health Organization, highly concerned by the spread and severity, declared that coronavirus disease 2019 (COVID-19) had characteristics of a pandemic. Two years later, has this pandemic triggered any epochal change? Probably not, but certainly several aspects deserve attention and discussion in the polyvalent anaesthesiology and ICU community.

From an organisational perspective, the creation of new “ICU beds” was one of the first necessary responses to the massive surge of patients with acute respiratory failure admitted to the hospitals. However, what is an ICU bed? The answer provided to this simple question is probably among the biggest scientific and political failures experienced during the current pandemic. Indeed, we likely failed in communicating that equipment is just a minor component of the ICU bed. For instance, at the beginning of the pandemic there was a lack of ventilators. Even the rearrangement

of the operating theatre as a “technical ICU bed” was not enough to satisfy the need for acute respiratory support. Delayed intubation may have happened frequently because of the lack of ICU beds, and even if an impact on patient’s prognosis has not been clearly demonstrated [4,5], recent multicentre evidence supports an early intubation strategy [6]. However, clinicians had to balance the indication on the need for invasive mechanical support with the safety aspects regarding the availability of ICU beds; moreover, they had to take the challenging decision to orientate their greater effort towards the patients with higher chances of survival, similarly to the triage taking place during mass casualties. Under such conditions, the lack of ventilators triggered a simple public answer: to increase their production and simplify the process of acquisition of new ones. Meanwhile, it was also considered to use one ventilator for the respiratory support of two patients [7,8]. Similarly, there was a lack of masks for non-invasive respiratory support, and even snorkelling masks were adapted. This approach in communication created the overall impression that an ICU bed is just about technical equipment. Unfortunately, this resulted in hiding the dust under the carpet, as not enough attention was devoted to the availability of skilled human resources.

On reflection, our community did not properly deliver the message of the importance of trained ICU personnel. We probably failed in explaining that ICU nurses are not just nurses, as well as physicians working in ICU are not just physicians. Moving a nurse to the ICU area does not translate into generating the appropriate nursing for the sickest patients in the hospital. Knowledge of highly sophisticated equipment cannot be acquired in days or weeks, especially if learning is supposed to happen under stressful conditions. Pumps and intravenous drugs, ventilators and extracorporeal circulation circuits, etc. are not as easy to manage as other typical tasks on the ward floor. Nonetheless, it is true that no one can generate the necessary skills to work in ICU in few weeks, as this process requires years of training, and somehow we had to support as many patients as possible.

Critical care, often the back end of healthcare systems, is the last line of defence in the tragic interplay between life and death. In this pandemic battle, anaesthesia and critical care personnel across the world suddenly found themselves on the frontlines. The “pandemic management” of ICU, anaesthesiology and emergency department (ED) personnel, with staff deployed to the ICU area and asked to deal with multiple patients according to the staff shortage, created a strong base for “pandemic burnout” among healthcare professionals. Compounded by the unyielding focus on COVID-19 for the entire period in our personal, social and

professional lives, this placed our mental and physical wellbeing under immense threat. Invariably, many sustained moral distress and moral injury [9]. We must salute the many colleagues across the world who have been severely affected or succumbed to this pandemic.

Meanwhile, it should be a political task to increase the attractiveness of working in the operating theatres, ICU and in the ED area, providing these highly skilled operators with cultural recognition of their work and with the requisite financial acknowledgment for their extra efforts. Unfortunately, in most countries, salaries are similar regardless of the area of work. A nurse is a nurse. A physician is a physician. So, why should anyone prefer to work harder and with sickest patients? Why should anyone want to be at greater infectious risk for themselves (and their families)? Importantly, it remains to be seen what the impact of the pandemic would be in attracting future young doctors into these medical specialities.

Rather than an increase in anaesthesia and ICU positions, plans for preparedness for future healthcare crisis should include a basic but well-structured training of all physicians in the use of non-invasive ventilation (through masks or high-flow nasal cannula), as these have shown very good results in the management of most patients, at least for the initial phase. Such an approach would spare the efforts of skilled anaesthesiologists and ICU physicians to the advanced cases requiring their skilled inputs. Moreover, this would allow anaesthesiologists to run elective surgery without deployment to other critical areas. This will be crucial in the optimisation of competencies and resources in responding to future healthcare crisis. Whether it will be feasible to create a pool of anaesthesiologists and ICU physicians that could be readily transferrable in any new areas of crisis remains an intriguing and opened question.

Being multi-skilled physicians who can perform a wide range of acute care tasks, anaesthesiologists faced a great challenge by being heavily incorporated in the management of patients with COVID-19 in ICUs in addition to their pivotal role in operating theatres. Despite the downgrading of many elective procedures during the early stages of the pandemic [10,11], there was still a need for anaesthesiologists in emergency surgeries as well as obstetric theatres; furthermore, the repeated waves of the disease for over two years made impossible to stop all elective surgical interventions. In the beginning, anaesthesiologists were loaned to COVID-19 areas, out from anaesthesia schedules; however, this produced a shortage in the operating theatres, and they were thereafter delegated to cover both COVID-19 units in short shifts overlapping with anaesthesia duties. Most airway-related procedures are aerosol generating, thus placed anaesthesiologists at risk for developing infections and being placed off work [12], possibly complicating the already disrupted scheduling of duties [13].

As part of the need to create an appropriate number of skilled professionals and to facilitate their movement in case of necessity, structural consideration should be given to the possibility of rapidly creating new ICU beds. The hospital of the future should be a network with highly flexible capacity and reconfigurations. Indeed, when ICU beds are not a limiting factor, clinicians will evaluate the appropriateness and the correct timing of intubation without including in their evaluation the need for (possibly long) inter-hospital transfer. Under hazardous conditions performing long transfers of mechanically ventilated patients (on high fraction of inspired oxygen, and possibly on significant haemodynamic support) is not without additional risks [14]. Lack of ICU beds may delay intubation in the hope an ICU bed becomes available, or simply because the first available ICU bed is far away. Furthermore, even if intubation is deemed necessary and timely accomplished, a prolonged stay in the ED with delayed ICU admission is another

issue. Undeniably, delayed ICU admission has shown a significant impact on critically ill patients [15,16], and there are no reasons why this should impact differently in specific disease as COVID-19. Certainly, a mechanically ventilated patient remaining for several hours in the ED because of absence of ICU beds will not receive the specialised treatment that can be fully delivered only in the ICU. Here, only a better staff-to-patient ratio, a greater level of training in critical illness, and the presence of high-performing equipment will allow the delivery of appropriate care.

During the course of this pandemic, we have learnt the importance of communication. Indeed, social media have created a strong nest for miscommunication with the provision of fake information by non-experts leading to very severe consequences. The widespread off-label use of non-evidence-based pharmacological interventions (such as hydroxychloroquine, azithromycin and ivermectin) especially in countries where there are lax restrictions on buying medication from pharmacies, and the unjustified panic of receiving the vaccine are classical examples of this [17–19]. A large part of the population with whom we deal has graduated as empowered armchair epidemiologists and pharmacologists from the “school of Google”, making them distrustful of the conflicted medical fraternity. In future crisis, it is crucial that healthcare providers and representative societies consider the importance of being unambiguous in the communication. Providing clear and simple messages that can be easily understood and not misinterpreted is of paramount importance to avoid confusion and mystification. Clinicians should refrain from their desire for visibility and popularity on talk shows, leaving only experts in delivering messages of huge impact on people’s well being [20,21]. Additionally, we have had to re-imagine scientific publishing models and reconsider how we communicate science. The pre-print and retraction debacles have made that abundantly clear. We also need to reaffirm and strengthen the importance of infection prevention and control practices. Anaesthesiologists, keen on throwing away their operating theatre masks in the pre-COVID-19 period, should reconsider hanging on to them for own protection. Teaching, learning and assessment have been re-envisioned within our disciplines by the pandemic with an exponential use of virtual platforms and digital systems; telemedicine is deeply entrenched across the globe. We have had to rethink our supply chains of the various products, ensuring that they are flexible to meet varying up- and downscaling needs.

The Indian Booker prize-winning writer Arundhati Roy suggested that “Historically, pandemics have forced humans to break with the past and imagine their world anew. This one is no different. It is a portal, a gateway between one world and the next.” Let us make the most of this portal as we grasp the opportunity that has emerged from this adversity called COVID-19.

#### Conflict of interest

Dean P. Gopalan is a member of the Ministerial Advisory Committee on COVID-19, South Africa 2020–2021. The authors have no other competing interests.

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