Anaesthesiologist and Critical Care Physician during COVID-19 Pandemic. What have we learned over last 8 months? Where have we failed?

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It has been almost 8 months since World Health Organization (WHO) declared a state of global pandemic caused by Corona virus. Spread of the deadly virus, the aforementioned decision and subsequent actions of Governments, local authorities and Professional Health Organizations placed anaesthesiologist and critical care physicians on the frontlines of treating patients affected by COVID-19. Given the role and expertise of anaesthesiologists in airway management, one of the our earliest initiatives was the creation of special teams responsible for endotracheal intubation of high risk patients [1]. Since endotracheal intubation is one of the aerosol-generating procedures that pose especially high risk of infection to health care providers, the team focused immediate on rapid development of reliable and effective protocols for infection control and the use of personal protective equipment (PPE) for this process. In addition to the specific PPE ensemble and donning and doffing procedures, this included specific assignment of roles and simulation training; procedures for increased isolation of patients and adequate ventilation of the space after the procedure was completed and for cleaning of the patient area and reprocessing or disposal of the equipment.

Anaesthesiologist have been heavily involved in the intensive care management of the patients most severely affected. While we have been relatively fortunate at our city and our center with respect to resources, in many other cities management of critically ill COVID patients has been further complicated with severe shortages of adequately trained staff (especially ICU nurses and respiratory therapists) and equipment, from simple PPE components, to basic consumables, monitors and ventilators. In centers with greater access to technology, patients who do not respond to mechanical ventilation have been supported with extracorporeal membrane oxygenation (ECMO). Despite a high percentage of successful weaning from ECMO, these patients remain at very high risk of significant complications and poor outcomes.

In addition to direct patient care, the clinical expertise and institutional position of anaesthesiologists has also placed them in many critical leadership and support roles in hospital administration, as well as rapid research and development initiatives targeting acute needs of hospitals concerned about supply chain disruptions and shortages of teste, drugs and critical medical devices. For example, anaesthesiologists at our center have collaborated closely with other clinicians and technical experts to develop new PPE, airway management strategies and emergency ventilation systems [2]. As one of the medical specialties constantly working at the interface and patient bodies and therapeutic technologies, anaesthesiologists are well positioned to contribute to the development of technologies that prioritize the needs of patients, health care providers and the infrastructure and institutions that support them.

A lot has happened in a matter of a few months this spring. In several parts of the word, the first wave of COVID-19 pandemic had a very dramatic course. All of us remember the terrifying pictures and descriptions from our colleagues in Northern Italy, New York, France, Spain, Iran and many other places. We also recognize tremendous achievements of other countries (Taiwan, South Korea, Vietnam, Singapore and New Zealand), which have managed to control the spread of the virus often in very effective and resource-efficient ways. In the summer, the curve flattened in most places, many medical systems developed strategies to cope with the virus, economies started to reopen and supplies of PPE and several other critical pieces of medical equipment improved. Some jurisdictions started to plan and prepare for second wave, some not. As anaesthesiologists and intensivists we were able to

"divert" some of our energies back to operating rooms and the growing number of patients who did not suffer from COVID-19 but had other urgent needs. We are all aware of the terrifying statistics showing increased rates of deaths from myocardial infarction, stroke, cancer and many other diseases, which were unintentionally "neglected" during first wave of pandemic. In the early phase of the global emergency our focus was necessarily narrow. Now, partially back to our regular activities we realize that in order to provide proper care to all our patients during a prolonged crisis, we must follow two pathways at once: one for regular medicine and one for patients who are affected directly by the emergency.

Now fall has come and we see once again staggering numbers of infected patients, deaths and the magnitude of second wave. The number of severely ill patients has fortunately been much lower than many models predicted, but the long-term effects of mild to moderate cases is raising concern for the long-term burden of this pandemic on our health and health care systems. Some countries have decided to lock down again, often against significant public resistance. What have we learned over last 8 months? Why are we not able to reproduce the success achieved in South East Asia? Is the failure related largely to decisions that have been made during the pandemic or to deeper, longer term causes such as lack of investment in public services and health related infrastructure? Is it a failure of our forms of government or of medical systems, which until recently seemed to be functioning reasonably well? Is it a failure of leadership? A recent, highly publicized editorial in The New England Journal of Medicine was entitled: "Dying in the leadership vacuum" [3]. The authors concluded that response of their nation's leaders had been consistently inadequate. Unfortunately, the same could be said about many countries.

Times of crisis bring opportunities for change and redefinition. Physicians across many specialties, including anaesthesiologists, have a chance to reassess their practice and position. We can ask how our daily clinical, educational and research work relates to the health of the populations we serve and the healthy functioning of the institutions we work in. How can we build on the kind of work and leadership displayed during the pandemic in order to make our practice and health care systems more resilient in the face of future crises? How can we play a larger role in shaping the institutions and technologies that so strongly influence our daily care of patients and the well-being of our colleagues and ourselves? As a specialty which includes emergency management and risk mitigation as core skills, anaesthesiologists have a unique contribution to make in these domains.

The scope and ingenuity demonstrated by generations of anaesthesiologists and intensivists in the development of perioperative medicine has been brought to the fore during this pandemic. Now it is time to transform it into routine practice. We have knowledge, experience and skills to coordinate large, interdisciplinary teams of health care providers, prepare advance plans and think "three steps ahead". There is one task and virtue necessary to achieve this aim: "Solidarność"- Solidarity has special meaning in Poland. We need it among anaesthesiologist and critical care physicians now more than ever.

Piśmiennictwo/References

1. Lee DW, Ma M, Parotto M, Wąsowicz M. Intubation outside of the operating room: new challenges and opportunities in COVID-19 era. Curr Opin Anaesthesiol. 2020; 33: 608-611.
2. Han JS, Mashari A, Singh D, et al. Personalized Ventilation to Multiple Patients Using a Single Ventilator: Description and Proof of Concept. Crit Care Explor. 2020 May 6;2(5):e0118.
3. The Editors. Dying in leadership vacuum. N Engl J Med 2020; 383: 1479-80.