What will nonoperating room anesthesia look like in the postcoronavirus disease 2019 era?

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As of today (30 May 2020) in the third month of the pandemic, over 6 million coronavirus disease 2019 (Covid-19) cases have been confirmed and over 366 000 deaths due to the Covid-19 disease have been reported worldwide <https://www.worldometers.info/coronavirus/>. Certainly this pandemic will influence virtually all the aspects of our life and will significantly change in future the way we are practicing perioperative medicine. Probably, from now on, we will all wish to be always 'overprepared' for any medical disasters that may come our way [1].

Over 1 year ago, I accepted with pleasure the invitation of Prof Hugo van Aken to serve as non-operating room anesthesia (NORA) Section Editor of the August 2020 issue of the *Current Opinion in Anesthesiology* (COA). The subjects to be presented in the August 2020 issue of COA were chosen with a view to updating and summarizing the recent developments of NORA in different perioperative settings all over the world, considering that, as for now, NORA represents the highest percentage of the overall anesthetic case volume in many countries.

Half a year ago nobody from the invited authors, including myself, was aware of or could have even predicted the forthcoming catastrophe of the Covid-19 outbreak. The accepted subjects to be presented in the current COA issue were divided into three areas, starting from very broad and complex topics such as NORA in different parts of the world or the value of NORA registries, through other important general topics like sedation, communication and safety, ethical aspects, regional anesthesia, patient selection, comorbidities or standard operation procedures in NORA, up to more specific areas referring to NORA procedures in children, obstetrics, elderly patients as well as in interventional radiology and cardiac procedures.

In March this year, when almost all the articles for this issue were completed as previously planned, WHO declared Covid-19 pandemic ([https://www.google.pl/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=2ahUKEwjeyoXYq5_pAhVCx4sKHZtMDYAQFjABegQIARAB&url=https%3A%2F%2Fwww.who.int%2Fdg%2Fspeeches%2Fdetail%2Fwho-director-general-s-opening-remarks-at-](https://www.google.pl/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=2ahUKEwjeyoXYq5_pAhVCx4sKHZtMDYAQFjABegQIARAB&url=https%3A%2F%2Fwww.who.int%2Fdg%2Fspeeches%2Fdetail%2Fwho-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-11-march-2020&usq=A0vVaw0FKylSBgS8uHGtlkwyHdF)

[the-media-briefing-on-covid-19—11-march-2020&usq=A0vVaw0FKylSBgS8uHGtlkwyHdF](https://www.google.pl/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=2ahUKEwjeyoXYq5_pAhVCx4sKHZtMDYAQFjABegQIARAB&url=https%3A%2F%2Fwww.who.int%2Fdg%2Fspeeches%2Fdetail%2Fwho-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-11-march-2020&usq=A0vVaw0FKylSBgS8uHGtlkwyHdF)) in the aftermath of the rise and spread of catastrophic Covid-19 outbreaks in some regions of the world [2,3]. It became clear that from now on nothing will be the same. This was the reason why in April we invited the authors of the forthcoming issue of COA on NORA to update the already sent manuals into Covid-19 crisis context if they wished and thought it might be necessary. Despite the scarcity of publications on this topic at that time, some authors undertook this task, updated their manuals into Covid-19 context and I would like to appreciate them and thank them very much for their cooperation. As a result, we have in COA one of the first published chapters on NORA in the context of Covid-19 pandemic and I encourage all the anesthesiologists to read them very carefully. The first invited author who responded to the call was David Borshoff. In his article on NORA: safety, monitoring and cognitive aids he summarizes all the aspects of safety in the context of NORA and emphasizes that the recent severe acute respiratory syndrome coronavirus 2 pandemic is a *prima facie* example of anesthesiologists providing leadership, protocols and guidelines for anesthesia in emergency departments, ICUs, wards and makeshift field hospitals. He argues that 'perhaps there has never been a more compelling incentive for the employment of cognitive aids than Covid-19,' with the clear and important message that we need ad-hoc teams formation where patient safety and healthcare risk management are of equal importance and relevance. He concludes that embedding cognitive aids in all anesthesiology working environments has never been more important. In another article on Terminology, Communication and Information

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Systems in NORA in the Covid-19 Era the group of the authors led by Robert E. Freundlich interestingly summarize all possible innovations in this field and suggest that the regime of working in pandemic conditions may even result in NORA cases being pushed to nonclinical areas, to accommodate surge capacity. Probably this is the time for closer integration of the user-friendly anesthesia management information systems as well as clinical support tools into NORA environments. The authors conclude that as the Covid-19 pandemic continues to progress, informatics tools may facilitate rapid development and refinement of clinical care pathways for the NORA environment. Problem of Risk Stratification in Patients Undergoing NORA is presented by Jan Poelaert and his coworkers. The authors summarize the current general risk assessment in patients undergoing NORA, with special attention to the recent problems connected with the accuracy and reliability of preoperative testing for potential Covid-19 infections in patients qualified for NORA. Reino Pöyhä in his article entitled Non-Operating Room Anesthesia for Patients with Serious Comorbidities reviews recent publications on NORA indications for patients with serious comorbidities, including all current state publications in the Covid-19 context, and calls for international and national guidelines to help to take care of the patients during the Covid-19 pandemic. We are all aware that a lot of changes are to be expected in healthcare systems in the post-Covid-19 era worldwide. Even such fundamental procedure as tracheal intubation, which we perform every day, has to be viewed in a different way than before. A group of the authors under the lead of Marcin Wąsowicz present an important topic: Intubation Outside of the Operation Room. New challenges and opportunities in the Covid-19 Era and deliver a brief summary on this topic. It is worth remembering that airway management in patients outside operating

room is associated with even higher risk, and therefore it is recommended to follow the newly modified guidelines for difficult airway management. Staff safety is of paramount importance and sometimes takes priority over the patient's health urgency.

Many important subjects, nicely presented and supported by the recent references in this issue of COA, are of great value and are certainly worth detailed reading – I would like to thank very much to all the contributors. Due to the limited space for an editorial message, I have focused mainly on the aspects of NORA in the context of Covid-19, which, in my opinion, will remain in the near future a major challenge for all of us. While writing this Editorial, I am aware of the limited knowledge we have on the Covid-19 disease – hopefully next months or years will bring the solution to this health disaster, such as I have never seen before in my almost 40 years of medical practice. This virus will probably stay with us forever so the question is: how can we learn to live with it?

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