



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

Perspective

# Spine surgery in Atlantic Canada in the COVID-19 era: lessons learned so far

Antonios El Helou, MD<sup>a,b,\*</sup>

<sup>a</sup> Department of Neurosurgery, The Moncton Hospital, Horizon Health Network New Brunswick, 135 MacBeath Avenue, Moncton, New Brunswick, Canada

<sup>b</sup> Department of Surgery, “Centre de formation Médicale du Nouveau Brunswick”, University of Sherbrooke, Sherbrooke, Quebec, Canada

Received 15 April 2020; revised 28 April 2020; accepted 28 April 2020

**Keywords:** Spine surgery; COVID-19 pandemic; Educational activity; Clinical adjustments; Telemedicine

The novel coronavirus (COVID-19) is a widely spreading infectious disease, initially reported in Wuhan, China in December 2019. The World Health Organization (WHO) declared it a pandemic in March 2020. Due to the rapid spread across the globe, many changes have been enacted at different levels, from social distancing to lockdowns in an attempt to “flatten the curve,” reduce the burden on the healthcare system, and to lower the number of critically infected patients and deaths [1].

North America was the last to be hit by the virus spread, but fast progression put the United States as the country reporting the largest number of cases by the end of April worldwide. Canada’s reaction, specifically in the Atlantic part, was homogenous; a rapid frontier closure between provinces to limit travel for urgent and essential matters only. Nonessential business in addition to schools and universities were closed. Healthcare professionals directed by their health authorities have found themselves rapidly involved in the pandemic emergency either directly by being frontline in the management of patients presenting with COVID-19 or indirectly by reducing or canceling nonurgent consultations and surgeries. Those measures were taken not only to lower the spread of the disease but also to help reduce the use of inpatient resources, materials such as gowns, gloves and eye protective shields, and to redeploy professional workers to the services in need [2].

The American College of Surgeons [3], followed by other societies including The North American Spine Society (NASS) [4], developed recommendations for surgical

management in which emergency surgeries should be performed as usual without delays, urgent cases to be scheduled in a reasonable time according to the area pandemic situation and the recommendations of local health authorities, and elective cases to be deferred.

At first, this situation created confusion between spine providers and their patients. Office visits were largely cancelled, and scheduled surgeries were reviewed by hospital panels trying to adjust to the limited resources. In-person teaching rounds were cancelled at first, and then moved to virtual platforms. On the other hand, live conferences, courses, and meetings were cancelled altogether.

At an educational level, many centers and societies developed online rounds and courses with materials that have been made widely available. Most of these virtual rounds have been free of charge, but some that provide continuous medical education credits have a cost. The COVID situation has taught us that didactic education can be uninterrupted via virtual means, and that “necessary” in person meetings can focus on hands-on courses to learn new techniques and be introduced to advanced technology.

Attending educational meetings online can help physicians at nonuniversity centers to have more regular access to continuing medical education without the major costs incurred with travel and module purchase. Virtual learning available to many participants can potentially reduce the knowledge gaps in spine care in more rural and isolated regions.

A decrease in major trauma cases, mainly those related to motor vehicle accidents, due to lockdown and reduced travels has been observed at our local level. Urgent surgical procedures are still performed but patients who were scheduled for nonurgent cases are still suffering from conditions that should be addressed. A time frame consensus according to the local progression of the pandemic and adapted to the situation should be developed to manage those patients.

FDA device/drug status: not applicable.

Author disclosures: *AEH*: Nothing to disclose.

\*Corresponding author. Department of Neurosurgery, The Moncton Hospital, 135 MacBeath Avenue, Moncton, New Brunswick, Canada.

E-mail address: [Dr.Antonios.Elhelou@Horizonnb.ca](mailto:Dr.Antonios.Elhelou@Horizonnb.ca)

This will not only provide the care needed for the patient but will reinstate the financial compensation for surgeons and their institution [5].

Telemedicine has changed some of the clinical assessment concepts. For example, physical evaluation can be adapted to the teleconference without direct physical contact with the patient [6]. Confidentiality between health care worker and the patient changed from being very discreet in a closed examination room to virtual online where it can be breached despite the high security and encryption. The latter led to the rise of new ethical considerations for confidentiality and information storage; as an additional element to the paper or electronic chart, the recording of virtual consults must be stored in a secure way. In many facilities where telemedicine was not used routinely, general online platforms were used initially out of necessity; this should be regulated as soon as possible. More application of telemedicine can become the standard after the pandemic. As an example, established patients with a known condition or those who have had their surgery already can be followed virtually, which can save travel time and cost. However, physicians' fees should be adapted to this new concept. The requirement of an in-person physical exam can be per physician discretion. New guidance using virtual care should be developed especially for those patients who radiologically do not fit the criteria for urgent surgical intervention, which will facilitate their access to specialist evaluation, lower the waiting time, and help triage surgical patients. Coding and billing of virtual consults was routine for some physicians but, in some jurisdictions, a new code was developed during the pandemic. This will also need a reevaluation once the pandemic settles down. Billing should be permanently updated; a new coding system may be useful.

Health Insurance Portability and Accountability Act (HIPAA) policies should be adapted rapidly to the new virtual care to allow the emerging telehealth systems to continue to grow [7]. The use of home hospitalization, which is an old concept that has not been frequently used, may become a safe way to lower the risk of nosocomial COVID-19 spread and save hospital beds for the sicker patients.

This pandemic has spurred changes in spinal care that were rapidly adopted by different stakeholders. We have learned many lessons at different levels showing our adaptive capability to ultrafast changes.

## References

- [1] Lipsitch M, Swerdlow DL, Finelli L. Defining the epidemiology of Covid-19—studies needed. *N Engl J Med* 2020;382:1194–6. <https://doi.org/10.1056/NEJMp2002125>.
- [2] Ranney ML, Griffith V, Jha AK. Critical supply shortages—the need for ventilators and personal protective equipment during the Covid-19 pandemic. *N Engl J Med* 2020 2020 Mar 25. <https://doi.org/10.1056/NEJMp2006141>.
- [3] American College of Surgeon. <https://www.facs.org/covid-19/clinical-guidance/elective-case>. Updated March 30, 2020. Accessed April 1, 2020.
- [4] Bono CM, Dohring EJ, Finkenberg JG, Ghogawala Z, Kauffman CP, Kreiner S. et al. NASS Guidance Document on Elective, Emergent and Urgent Procedures. <https://www.spine.org/Portals/0/assets/downloads/Publications/NASSInsider/NASSGuidanceDocument040320.pdf>. Updated March 30,2020. Accessed April 1, 20205.
- [5] Ghogawala Z, Shekar K, Falavigna A, Groff MW, Sciubba DM, Wu J-C, et al. COVID-19 and spinal surgery. *J Neurosurg Spine* 1 2020:1–3. no. aop <https://doi.org/10.3171/2020.4.SPINE20468>.
- [6] Brockmeyer DM, Barnett ML, Anne B. Rapidly converting to “virtual practices”: outpatient care in the era of Covid-19. *NEJM Catalyst Innovations Care Delivery* 2020. <https://doi.org/10.1056/CAT.20.0091>.
- [7] HIPAA Guidelines on Telemedicine. <https://www.hipaajournal.com/hipaa-guidelines-on-telemedicine/>. Accessed April 13th, 2020