



COVID-19: an opportunity to restructure surgical education

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The COVID-19 pandemic has drastically changed how institutions manage their surgical services. Elective procedures are postponed to prioritize emergency surgeries, due to the high risk of COVID-19 exposure to the surgical staff. Hospitals have also changed the roles and schedules of healthcare workers, with resident and attending surgeons instructed to stay at home and eliminate all risky transmission activities, including academic, non-essential clinical, and administrative tasks [1].

How has this pandemic impacted the education of surgical trainees? The reduced number of elective procedures has decreased the training opportunities in the operating theater. Moreover, a number of staff members in the surgical team have had to self-isolate after reporting symptoms of COVID-19. As a result, this phenomenon has led to more focused efforts at continuing with quality surgical education, while simultaneously ensuring the safety and health of trainees [1]. Strategies are being implemented to

adapt face-to-face activities to remote learning, using technologies and virtual platforms [2].

This pandemic presents a huge opportunity to re-construct the method by which surgical trainees learn and adapt to their curricular activities. In our institution, we noticed how surgical residents took initiative in improving their engagement with academic activities by pursuing research that they would not have otherwise been engaged in or have had the time to pursue. We noticed that our surgical trainees have had more time to spend on academic rather than administrative work, resulting in reduced symptoms of burnout amongst attending and resident surgeons. We would like to see wider studies address this topic: has the reduced surgical workload during the COVID-19 pandemic resulted in lower rates of burnout among surgical residents? And has the reduction in clinical work resulted in an increase in academic activity? How does this correlate with developing a more holistic surgeon who is competent in both technical skills and academic research? Studies in the future would be beneficial to determine the long-term impact of this pandemic on surgical training.

Surgical residents have had more time to practice their basic laparoscopic skills using low-cost and portable surgical box trainers at home. This provides the surgical resident with a constant refresher of their technical skills that may still be used in the absence of real-world surgical procedures and training in the operating room. The construction of low-cost laparoscopic box trainers has been previously outlined [3], and institutions that do not have access to high-end surgical training kits can still provide their surgical residents with opportunities using this accessible tool during the current pandemic.

The drastic changes triggered by the COVID-19 pandemic necessitate a re-evaluation of surgical education and training. Institutions have had to adapt to

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different ways in which their surgical trainees learn, and—in our institution at least—have focused on reducing clinical activities and the high workload associated with surgical training to instead focus on academic and technical skills' training. Innovative steps such as virtual platforms and low-cost surgical box trainers have facilitated this transition. Future studies on the wider implications of this pandemic on surgical education would better outline the further adaptations required to deliver surgical training in a post-COVID-19 world. These modifications should primarily focus on the quality of surgical education provided and result in patient safety, while simultaneously preserving the integrity and health of surgical trainees.

Conflict of interest A. Juanz-González, J.A. Barreras-Espinoza, A. Soualhi, E. Leyva-Moraga, F.A. Leyva-Moraga, F. Leyva-Moraga, M.J. Serrato-Félix, J.M. Ibarra-Celaya, and

G. Castillo-Ortega declare that they have no competing interests.

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