COVID-19 Impact on Postgraduate Medical Education: Looking at the Silver Lining

O Impacto da COVID-19 no Ensino Médico Pós-Graduado: Renascer das Cinzas

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Wuhan! A not well-known Chinese city became part of history as the birthplace of COVID-19 pandemic. Over the past years, SARS-CoV-2 unstoppable global spreading presented the most challenging public health issue in a century. Even exemplar healthcare systems faced severe difficulties to assure the best care amid the uncertainty of a new highly infectious and mortal disease, with unprecedented number of acute respiratory failure patients and shortages of health staff and other resources.

Unprecedented international scientific collaboration developed guidelines and successful vaccines; healthcare systems were quickly reorganized, creating new medical wards and redeployment of many clinicians - residents included.[1,2] In spite of the world's fast and joint movement, medical education, particularly postgraduate, became forcedly neglected in face of very demanding care needs. Curriculum development and reforms are extremely delicate processes which very often cannot keep up with all the brisk changes. After two years of COVID-19 pandemic, lessons learned from this remarkable time may seem clearer and it is time to reflect on the experience and apply the opportunities on national postgraduate medical education. How were residencies affected? What long term consequences are to be expected? Are there any resolutions that can minimize harmful outcomes? What new possibilities have been created?

Physical distancing is COVID-19 pandemic hallmark. Minimal interpersonal contact was pursued, physical examination required fully individual protection equipment, outpatients' visits became telemedicine visits. These changes caused a distress on residents' education, which created from the beginning an armored medical-patient relationship, with serious limitations on time-performing patient assessment and attending supervision. Bedside observation and case discussion with senior peers, which are considered cornerstones of medical education, were deeply diminished.[3-5] These skills are among the first to develop during medical training, and early years residents may have faced delayed competence acquisition or failed it at all. Postgraduate medical training has often little structure and is left to happen by chance. However, the educational process cannot be stopped, and it still occurred through these troubled times, even with fewer opportunities of clinical and peer interaction.

Medical specialties that require a significant volume of procedures to achieve proficiency encountered a marked reduction of those techniques, due to clinical activities cancellations or redeployment of residents to COVID-19 areas. Also, both for medical and surgical specialties, a decrease in non-COVID-19 related admissions was observed. Alongside with redeployment in COVID-19 areas, this may have resulted in a lower ex-

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perience with health conditions that would usually be part of everyday resident practice. Without solid simulation programs that could mitigate these low case numbers, residents may reach the end of their training period without the required experience or skill acquisition. These problems affected particularly final years residents, as they are not able to recover in future years.

In Portugal, residents are expected to actively engage in scientific and academic activities. When universities suspended their activities, teaching opportunities were lost. Moreover, medical gatherings were limited, scientific meetings suspended, and non-COVID-19 related research went to a halt, which contributed to a substantial decrease in residents' scientific activity. Networking with peers at other institutions was also compromised, foremost with internships cancellations at reference national or international departments. Alongside the expanding use of telemedicine, which was implemented without a timeframe to provide proper training, e-learning flourished as a substitute to traditional teaching methods.[6] Although being cost-effective and allowing harmonization of learning opportunities and access to top experts, particularly significant to residents in less solid training programs, it also raises some issues. Virtual platforms' widespread use may lack proper content validation, jeopardizing residents' training if incorrect or biased information is used. No formal peer review process or institutional support existed in several online resources. Similarly, most mentors excellent at bedside teaching lacked proper training on online tutoring, not fulfilling the full potential of digital resources. The amount of information available online is staggering, so much that residents may enter a cycle of FOMO (fear of missing out) regarding learning opportunities. This flood of information, especially because most of it is provided at off work hours, may prove quite exhausting.

Mental health issues, particularly burnout, were already prevalent in the resident's population, often erroneously dismissed as part of the process of becoming a doctor. COVID-19 pandemic could have provided the optimal catalyst to further exacerbate this problem by mixing social isolation with management of an unknown disease, work outside the area of expertise and lack of human and material resources, all known factors that lead to burnout.[7-9]

Most of the residents that lived through COVID-19 pandemic will complete their training in the next few years. They will present themselves to board certification with an unparalleled experience of fighting a pandemic that required swift adaptations of their skills, familiarity with telemedicine and online resources.[10] In contrast, they may have suboptimal case records, procedures, papers, or academic curriculum. Additionally, these trainees may have not benefited from the same mentoring support from their supervisors. Despite less training time and experience in their area of expertise, those residents will present themselves to board certification exams after being recognised as competent by internship leaders and department directors. Ultimately, this signals a shift from a fixed time internship to a competence based one, which can be an important lesson from the pandemic experience.

Nowadays in Portugal, board certification exams assign points to each of the aforementioned items to decide the final grade. This will be the grade that will sort candidates to any position open in 'Serviço Nacional de Saúde', competing not only with same year residents, but also with those that have not endured COVID-19 during their internship. This may be a handicap that will perdure during their career.

Medical boards and societies, as well as internship leaders, now have the opportunity to prove that COVID-19 pandemic was also a game changer for medical postgraduate education.[11] Guidance for the use of trustworthy online resources must be provided to prevent misinformation. Blended learning methods that merge online content, both synchronous and asynchronous, with on-site training proved as an optimal learning setting and are expected to become more prevalent in the near future. Funding opportunities may not be wasted, it is mandatory the creation of a nationwide framework to develop digital competence in health, both for clinicians and educators.

COVID-19 raised awareness of something already known, it is pivotal to make curriculum reforms on Portuguese postgraduate medical education. We need a more flexible approach and therefore potentially more resilient to major disruptions of any nature. Competency based learning, entrustable professional activities or even individualized curriculum are a few examples already implemented in other countries with proven results.[12] We need to break the dogma that every resident needs the same time to acquire competency, rushing some and delaying others to board certification.

Finally, we need to further improve burnout recognition and management. Applying routine screenings and offering support through all residency programs could be the first step towards creating healthier learning environments. The pandemic brought to light the crucial role of the health workforce in promoting and protecting health, but this potential can only be achieved through investing in the backbone of the health service - its professionals. This investment necessarily means supporting medical education development across the continuum of professional life.

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