

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.



Available online at www.sciencedirect.com

## **ScienceDirect**

journal homepage: www.jfma-online.com



Letter to the Editor

## The impact of Covid-19 on the education of residents: A Peruvian experience



The coronavirus disease 2019 (COVID-19) has posed a great challenge to our health system in relation to hospital capacity and the health care workforce. Likewise, it has dramatically affected the education of doctors in training due to the closure of universities and the impossibility of hospital practices for medical students and changes in the academic curricula for residents as hospitals try to manage the large influx of COVID-19 patients.<sup>1</sup>

Before the pandemic, the residency program in our country was perceived as deficient. In an attempt to supply the need for specialists, in recent years more places have been offered to carry out residency. However, this was not in accordance with improvements in the infrastructure dedicated to our training or with the provision of hospital supplies.<sup>2</sup> Nor have there been any incentives to implement new educational platforms (adaptive learning, personalized learning and flipped classrooms) that have emerged in recent years as practical solutions to meet the needs of continuous learning among residents in training.<sup>3</sup>

During the COVID-19 pandemic, these limitations have likely worsened. The Edgardo Rebagliati Martins National Hospital, which has the largest number of residents annually in Peru, currently provides care for patients with COVID-19. Due to the state of emergency, the residents have had to carry out activities other than the training program as a containment measure against this pandemic. Elective procedures and surgeries have been canceled, and consequently, we have experienced a dramatic decline in the hands-on, interactive and supervised experiences crucial to our learning.

Likewise, with social distancing being an effective measure to decrease the transmission of the disease, this measure has prevented residents from meeting in conference rooms or small learning groups. However, many virtual platforms have emerged, which allow continuous education and have significantly innovated the way of teaching and the relationship among residents.<sup>4</sup> At our institution, the use of these platforms has made our sessions more attractive than usual, encouraging active participation through chats and voting, and also recorded sessions allow colleagues to review the sessions at their own pace, as well as pause, review, and adjust playback speed. However, this does not replace the learning of skills that are only possible in direct interaction with patients.

Furthermore, in Department of Cardiology, residents show interesting cases, often with images (electrocardiograms, echocardiograms, cardiac catheterizations, computed tomography images, and magnetic resonance images), and the group engages in discussions regarding diagnosis and management plans. Virtual platforms also support immersive, high-quality, multimedia interaction between remote individuals, attend international scientific events and greater participation of residents of different hospital sites in the academic activities of our scientific society. This was especially valuable to residents on sick leave or quarantine and could serve as an invaluable solution to physical separation.

Amidst the devastating effects of COVID-19 on the global health system and economy, we must make the most of our new digital infrastructures and generate new practices for the future.

## References

- Rose S. Medical student education in the time of COVID-19. *JAMA* 2020;323(21):2131-2. https://doi.org/10.1001/jama. 2020.5227.
- Herrera-Añazco P, Toro-Huamanchumo CJ. Medical education during the COVID -19 pandemic: global initiatives for undergraduate, internship, and medical residency. Acta Méd Peru

Letter to the Editor 1159

2020;**37**(2):169–75. https://doi.org/10.35663/amp.2020.372.

3. Narang A, Velagapudi P, Rajagopalan B, LeBude B, Kithcart AP, Snipelisky D, et al. A new educational framework to improve lifelong learning for cardiologists. *J Am Coll Cardiol* 2018 Jan 30;71(4):454–62. https://doi.org/10.1016/j.jacc.2017.11.045.

**4.** Almarzooq Z, Lopes M, Kochar A. Virtual learning during the COVID-19 pandemic: a disruptive technology in graduate medical education. *J Am Coll Cardiol* 2020;**75**:2635—8.

Javier Torres-Valencia\* Facultad de Medicina Alberto Hurtado, Universidad Peruana Cayetano Heredia, Lima, Perú

Médico Residente de Cardiología, Departamento de Cardiología, Hospital Nacional Edgardo Rebagliati Martins, Lima, Perú Samuel Pecho-Silva Escuela de Medicina, Universidad Científica del Sur, Lima,

Médico Especialista en Neumología, Servicio de Neumología, Hospital Nacional Edgardo Rebagliati Martins, Lima, Perú

\*Corresponding author. 1750 Almirante Guise Street Apartment 603, Lince, Lima, Peru. E-mail address: javier.torres@upch.pe (J. Torres-Valencia)

11 October 2020