

First generation of residents in the era of Covid-19. Giving honor to whom honor is due

Abstract

Since its first report in December 2019, coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has become the most recent pandemic rapidly affecting all countries of the planet, leaving until today a balance of 118 754 336 infected persons and 2 634 370 fatalities in the world. As the COVID-19 pandemic progresses, it has modified our way of life, the economy has been severely damaged, and health systems have been insufficient throughout the planet. The COVID-19 pandemic had in a short time rapid and unavoidable effects on the training and work plans of all new healthcare personnel, especially residents, interns, and nurses, as well as undergraduate students from medicine and nursing. The first generation of specialists and subspecialists trained under these changes have just graduated. The last year of their medical training was damaged due to the time they had to spend managing COVID-19 patients. Many of these young doctors lost their lives in the line of fire. The training of the fellows who survived should be complemented in their first years of their practice as specialists, but their knowledge and skills acquired during their residency will benefit global health by having doctors properly trained in the fight against COVID-19.

Keywords: medical education, residents, interns, nurses, COVID-19

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Introduction

It's graduation time; around the planet thousands of young residents, fellows and nurses are graduating from their respective hospitals. They receive their certificate in selected specialties or subspecialties of medicine and surgery, although an unknown number of these young doctors never had the joy of completing their training because they died in the battle against COVID-19. The goal of these young doctors when entering a residency program did not count on the confrontation of this pandemic that originated in December 2020 in a wet market in the Chinese city of Wuhan,¹⁻³ a calamity that in the blink of an eye spread to each and every one of the countries on the planet, exceeding not only scientific capacity, but all aspects of human activity.^{4,5} The economy fell, damaging production chains, millions of jobs were lost, poverty increased, violence intensified, governments were affected and many politicians failed to properly handle this pandemic. Even the more developed health systems were affected in such a way that their hospitals were overwhelmed in their demands for care, and patients died at the doors of hospitals queuing for medical attention. As of March 11th, 2021 there were 118 754 336 confirmed cases, 2 634 370, confirmed deaths, and 223 countries, areas or territories with COVID-19 cases.⁶

Health workers had to radically modify their routines. Of this group, the most affected were the young doctors and nurses in training who at the beginning of the pandemic had to work long overtime; not only to acquire the knowledge and skills of their training, but also to dedicate most of their time to manage COVID-19 patients. At the beginning of the pandemic, thousands were infected because they did not know the transmission mechanisms of this virus and we saw how the reports of deaths in the health sector grew, with Mexico being the country with the most deaths in this group,^{7,8} followed by USA, UK, Brazil, Russia and India.⁹ The lack of personal protective equipment (PPE), medical supplies, medicines and other items, as well as the long periods of exposure during shifts in emergency services, in

hospitalization sectors, in intensive care rooms, operating rooms and radiology among other areas, facilitated more infections and unexpected deaths. Even so, the young doctors and nurses-in-training redoubled their efforts, modified their study programs to read tons of information about this new disease, becoming experts in managing COVID-19 infected patients.

The COVID-19 pandemic produced an inevitable deterioration not only in the health systems, but also in the learning and training plans of all residency programs;¹⁰⁻¹⁴ education priorities changed to manage the pandemic; clinical rotations were affected, duties underwent substantial changes, face-to-face classes were changed to virtual conferences, videoconferencing, podcasts, and simulation programs. Although the mentors and their students have adapted to these modifications, the final results in professional training have been damaged. This has led all specialist training programs to modify their goals and formats in such a way that the learning curves of residents, nurses, and interns are maintained with minimal damage. Online educational programs have a good track record, with physicians-in-training and recent graduates benefiting the most. This type of teaching improves knowledge retention and the key to success lies in the motivations of the students and their sense of self-fulfillment.^{15,16} Nevertheless, online education can have negative consequences, including increased mentor and student burnout due to computer screen fatigue, possible loss of information due to limitations of the medium, as well as difficulty discussing sensitive topics.¹⁷

Burnout syndrome is common among doctors from long hours and high pressure situations. This syndrome is serious and can be fatal by promoting high suicide rates among physicians. This situation became even more critical since it diminishes the capacity to provide the best care to patients, favors the possibility of contagion and affects professional training. The COVID-19 pandemic has exerted considerable physical and emotional stress on front-line health workers, with resident and intern doctors being the most affected

since they are a special group that has simultaneous tasks of caring for their patients and acquiring new knowledge and technical skills. Being a women, being single and some specialties with greater stress -such as anesthesiology and critical care medicine-, are contributing factors to the development of depression, anxiety, exhaustion and low professional and family productivity.¹⁸⁻²¹ Fear, despair, anguish, and fatigue affected the resilience of many trainees, some were not able to overcome so many critical moments and developed burnout syndrome. Figure 1 shows the facial damage in an anesthesia resident moments after a difficult long daytime and overnight shift caring for COVID-19 patients.



Figure 1 Facial signs after a long and difficult day caring for COVID-19 patients.

Modifications in programs to training doctors in multiple specialties should not be affected by the COVID-19 pandemic. Universities, medical colleges, national and international medical societies as well as health systems are developing substantial changes to create new content and systems to teach and to evaluate learning through distance education, online pedagogies, in addition to the possibility of acquiring skills with medical simulators.^{14,22,23} The transformation must be fast, optimal and in accordance with each educational program, in such a way that the final result in each resident does not affect their cognitive and labor skills, maintaining the same educational standards as before this pandemic. This challenge is a valuable opportunity for teachers, instructors, residents and interns.

On one hand, the training of these young specialists has been negatively affected and each of them must overcome these deficiencies as soon as possible to avoid that these deficits have a negative impact on the health of their future patients. Specialists graduated before this era of COVID-19 have the academic and moral responsibility to help them in this task of complementing their training using all the teaching methods available in our work centers, especially day-to-day clinical activities as well as the development of surgical-

medical skills. On the other hand, the medical community and the general population will benefit from the graduation of this generation new specialists, since due to the time they dedicated to managing patients with COVID-19, they have acquired knowledge and skills not previously seen in their respective specialties. Today we have doctors and nurses who, in addition to the knowledge of their specialty, are all experts in the prevention, diagnosis and management of this disease. The difficult times will continue to come until we manage to dominate this pandemic. It is necessary to foster an open culture of trust and support while promoting resilience among colleagues, especially among health personnel in training.²⁴

COVID-19 pandemic has been devastating; new mutant strains, diverse treatments, uncertainty in some available vaccines, insufficient vaccination plans, covidiot's behavior, new outbreaks, curves that do not flatten, countries like Brazil and France with a return to almost total isolation are just some factors and indicators that this pandemic it is far from being controlled. Undoubtedly, there will be new generations of specialists who during their training will confront SARS-Cov-2 with innovative educational programs that will make their residency and internship even better and safer. The generation of specialists graduated in 2021 will be remembered as the first generation of young doctors, nurses, and technicians in various areas of health who not only risked their lives treating patients affected with COVID-19; but also, sacrificed a valuable year of their training by dedicating all this time to unscheduled teaching and support activities, which undoubtedly affected the standard of their specialized training.

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