

Senior Medical Students in the COVID-19 Response: An Opportunity to Be Proactive

On March 13, 2020, the United States declared the novel coronavirus (COVID-19) pandemic a national emergency. By March 18, 2020, according to the Centers for Disease Control and Prevention, COVID-19 had spread to all 50 U.S. states, with 7,038 cases and 97 deaths.¹ The trajectory of cases mirrors that of Italy, where doctors are forced to consider who is more deserving of a ventilator.² In response, social distancing measures are being promoted across the United States in the hopes of slowing the growth in new cases, i.e., “flattening the curve.” This could maintain the demand for acute care within the health care system’s capacity to treat.³ Travel has been curtailed, conferences and concerts have been canceled, and schools and universities have moved students off campus and classes online. Medical schools are following suit, with added motivators. In canceling classes and rotations, medical schools hope to promote social distancing, limit the risk of students contracting the virus, limit the number of health care workers who might spread the virus to unaffected patients, minimize the teaching burden on frontline providers, and preserve personal protective equipment (PPE) for essential personnel. These are logical reasons for removing students from hospitals. But, despite our best efforts, there may come a point in the US when, as is set to happen in Italy, medical demand outpaces medical capacity.² If the same happens here, is there a plan in place for incorporating senior medical students into emergency relief efforts?

Medical schools are rightly prioritizing patient care, provider safety, and pandemic control over student learning. In most settings, students demand more attention and resources than the benefit they provide. The Association of American Medical Colleges (AAMC) published guidelines recommending that schools move nonclinical activities to online-only

environments and eliminate early clinical experiences. For students on clerkships or elective rotations, the guidelines encourage limiting “direct care of known or suspected cases of COVID-19 infection” and were updated to acknowledge that some schools may need to suspend all student clinical activity.⁴ Many already have. For students in their pre-clinical years, the transition from in-person to online learning should be relatively straightforward: many schools already utilize online lectures and virtual anatomy tools with high levels of student satisfaction.⁵ For students in clinical training, the implications are less clear. Online modules and standardized patients cannot replace hospital-based learning. But this is a time of crisis, and presumably medical schools and the AAMC will find ways to obtain clinical exposure for junior medical students as the trajectory of the pandemic becomes clearer.

One group of students notably missing from this discussion, however, are senior fourth-year medical students who have completed their clinical training and, in many cases, all of their medical school requirements. These students discovered on March 16, 2020, whether or not they matched into a residency program, and on Match Day, March 20, they will learn where that program will be. Last year, approximately 18,000 U.S. medical students matched into first-year residency positions. The only mention of graduating students in the AAMC guidelines is to discourage Match Day celebrations. While senior medical students are unprepared to be frontline providers, they are experienced navigators of hospitals and hospital teams. They are trained in health information privacy and electronic medical record systems, and they have security clearance to work in local hospitals. They have spent hundreds of hours obtaining patient data from outside hospitals; speaking with pharmacists, lab

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technicians, residents, and nurses to coordinate patient care; assisting in simple procedures; and speaking with patients and their family members about next steps. Medical students are often given the advice that to succeed on clinical rotations, they must find ways to minimize resident workload, i.e., to save more time than they take up. By graduation, this is a skill at which most students are adept.

The United States may succeed where other countries have failed and sufficiently flatten the curve through social distancing, but there is a very real possibility that, here too, medical demand will soon outpace medical capacity. Given the recommendation that anyone testing positive for the virus self-quarantine for 2 weeks, the pool of available health care providers could rapidly decline. An emergency medicine doctor in New Jersey and another in Washington State who tested positive for COVID-19 are in critical condition. Approximately 24% of U.S. doctors are above the age of 60, placing them at high mortality risk if they were to contract the virus.⁶ In China, thousands of health care workers were infected. In the Lombardy region of Italy, one of the most affected areas of the world, approximately 20% of health care workers were infected, with some dying.² This has led Italian officials to promote 10,000 senior medical students 8 to 9 months ahead of schedule.⁷ England's Chief Medical Officer, Chris Whitty, has acknowledged that responding to the pandemic may require expanding prescribing and treatment privileges of first-year residents and final-year medical students. In New York, one of the most affected U.S. states, Governor Andrew Cuomo has reached out to medical schools to identify possible reserve health care professionals.

Approximately 18,000 residency-matched students could offer a significant boost to a beleaguered medical workforce. Students are at lower risk of negative outcomes from infection than older providers, but they are also less important to critical care. Students could therefore be restricted to working with low-acuity COVID-19 patients. Alternatively, if PPE supplies remain limited, senior medical students could assist in nonpatient facing tasks and in the care of patients hospitalized with noninfectious diseases, effectively freeing more time for frontline providers to treat the critically ill. Senior students stand to benefit from participating in the pandemic response as well: there is a real possibility of a second peak in COVID-19 cases this fall, when these students will be on the wards as residents.³ Either way, this will almost certainly not be the

last pandemic of students' lifetimes, and being a part of the response now could be important to preparedness in the future. Many of the countries proving more successful in responding to COVID-19 are the same ones that successfully contained previous outbreaks of severe acute respiratory syndrome and the H1N1 flu virus. Finally, if senior medical students are called on to assist, medical schools should consider discounting final-year tuition. No medical provider should incur further debt while assisting in the COVID-19 response.

Medical schools in the United States prepare students to effectively support medical teams. The COVID-19 pandemic is likely to test the capacity of our health care system, and students may be called on to participate in the response. Now is the time to develop plans for making that transition as safe as possible for students, medical teams, and most importantly, for patients. Students can receive online training specific to COVID-19 and disaster-preparedness, and health care systems can develop workflows that integrate students where they can be most effective. Early recognition that senior students can contribute meaningfully to the U.S. COVID-19 response can bolster the current healthcare workforce and increase preparedness for future pandemics.

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Daniel C. Stokes, MS 

(daniel.stokes@pennmedicine.upenn.edu)

*Center for Emergency Care Policy and Research,
Perelman School of Medicine, University of Pennsylvania,
Philadelphia, PA*

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References

- Centers for Disease Control and Prevention. Coronavirus Disease 2019 (COVID-19): Cases in the U.S. 2020. Available at: <https://www.cdc.gov/coronavirus/2019-ncov/cases-in-us.html>. Accessed Mar 18, 2020.
- Remuzzi A, Remuzzi G. COVID-19 and Italy: what next? *Lancet*. 2020.
- Anderson RM, Heesterbeek H, Klinkenberg D, Hollingsworth TD. How will country-based mitigation measures influence the course of the COVID-19 epidemic? *Lancet* 2020;395:931–4.

4. Whelan A, Young G, Catanese V. Medical Students and Patients with COVID-19: Education and Safety Considerations. 2020. Available at: <https://www.aamc.org/system/files/2020-03/Role%20of%20medical%20students%20and%20COVID-19-FINAL.pdf>. Accessed Mar 13, 2020.
5. Tang B, Coret A, Qureshi A, Barron H, Ayala AP, Law M. Online lectures in undergraduate medical education: scoping review. *JMIR Med Educ* 2018;4:e11.
6. Young A, Chaudhry HJ, Pei X, Arnhart K, Dugan M, Steingard SA. FSMB census of licensed physicians in the United States, 2018. *J Med Regul* 2019;105:7–23.
7. Reuters. Italy Rushes to Promote New Doctors to Relieve Coronavirus Crisis. 2020. Available at: <https://www.reuters.com/article/us-health-coronavirus-italy-idUSKBN214245>. Accessed Mar 17, 2020.